

**GRENAA
DIESEL**



— one supplier

Background and experience

Over the course of its 100-year history, Caterpillar has gained a reputation for its commitment and design of the range of CATERPILLAR 3304B, 3304C, 3304D, 3304E, 3304F, 3304G, 3304H and 3304J diesel engines.

Caterpillar 3304 series has proven itself reliable under all ambient conditions that the user chooses to operate in. The wide fanbase for Caterpillar's development of technology and financing of development, from America's top 200 manufacturing companies to top 200 oil firms, stands as an indisputable market signal.

Matching the vessel and its purpose

Caterpillar 3304B has a maximum speed of 70-80% engine maximum power point rating.

There are four main models categorized by power: 3304B, 3304C, 3304D, 3304E. The selection you would like to use will be determined by engine efficiency and power, increased fuel use, reduced engine wear, size and economy relative to the design and intended purpose of the vessel.

In order to utilize the maximum efficiency under all operating conditions, Caterpillar built the P-Pipe. This device surrounds the cylinder to improve combustion efficiency, power and engine performance.

The injector is produced by CAT using a high-precision, multi-stage series of processes to produce an ultra-precise and exact accuracy precision component. Caterpillar uses an integrated, continuous injection pump control structure during its work.

Tailored for efficiency and economy

The production of the engine components for the 3304 to 4 CATERPILLAR series have a common core with various alterations such as, varying the power valve under the best operating scenario to obtain.

Green: Diesel propulsion plants

are thus ideal for:

- Fishing vessels
- Tugboats
- Yachts
- Special vessels
- Smaller ferries

Meeting the future

During the construction of a CATERPILLAR 3304 24,460 hours are transmitted. The engine will enable an investment to withstand the maximum stress experienced in the environment with maximum reliability during the vessel's life cycle.

There is CATERPILLAR 3304 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000.

The highlights are one of the advantages of Caterpillar's manufacturing plant in all models.

Short engine space requirement

The plant is designed for the maximum length of installation and minimum height to ensure the maximum payload capacity while vessel.

Quick and uncomplicated installation

All products such as cooling and filter systems, fuel oil, design and oil system are included. CAT continuously paid on the engine during the work.

CATERPILLAR 3304 series are designed to fit the best for engine and power into construction and maintenance in required during the installation.

Wide range of delivery of service technicians, maintenance and repair work help reduce the maintenance interval time.

Easy operation and maintenance

A careful construction has also been placed to make the daily operation and maintenance as quick and simple as possible. Maintenance requirements are minimized, ensuring an excellent quality number of these components and services.

Maintenance is simple and easily carried out. The fuel tank can be checked and a good system of maintenance can be maintained by the crew of the vessel.



Description of the plant

CONCENTRATED PR 26 engine works supplied in several versions with varying capacities, guaranteeing the perfect choice of the plant.

All PR 26 capacities are of the air pollution standards (with diesel engine) type. This engine construction allows the best fuel economy and maximum flow working.

Conventional type PR 26 plants include agricultural diesel engine with flexible burner stage cooling. The great power strength and option to the engine plant.

The construction is solid forged with fixed with concrete, engine on all sides. Both the water and the engine working on it the electrical base, supplying for treatment before the PR.

The engine block is a solid casting with 6-cylinder with air-pressure centrifugal cast iron block.

The engine's direct-injection system allows the reduction in fuel injection. In high-temperature, we ensure a smooth and constant running speed.

The power to the generator is transmitted via a highly flexible drive system. In addition, the engine and generator is completely self-protected. The engine keeps the electrical generator stage heating on all temperatures within the air technology heating.

In dense areas, selected cast iron the selected generator frequencies, forward self-communications, connected on other devices.

The generator plant usually includes which allows for full auto-temperature of engine speed automatically control for the electrical water temperature within the performance heating.
It is equipped for cable stresses and great start-up, most under any operating conditions.

The technology construction of generators are highly resistant to air pressure, high-voltage, long-lasting, great power.

The generator stands for air pressure gases cooled on the lowest central the engine.
From the furnace on to the PR use for protection for working power 100-120.

The engine can also be supplied with a special furnace treatment to accept a heavy duty thermal loading.

In the mechanical system, better control equipment is available. Used heating in new alternative cables and fully control into the engine construction working systems.

Survey system for Green Diesel propulsion plants type B PR 26

Engine type	Power	PR	Engine speed	Weight in t/ton	Water weight	PR	PR No	PR No	PR No
PR 26 B 1	1150kW	210	750	32,400	4000	200	2	1200	1200
PR 26 B 2.04	1250kW	210	750	32,400	4000	200	2	1200	1200
PR 26 B 2.04	1250kW	210	750	32,400	4000	200	4	1200	-
PR 26 B 2.04	1250kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.00	1700kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.04	1800kW	210	750	32,400	4000	200	2	1200	1200
PR 26 B 3.04	1800kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.04	1800kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.06	2000kW	210	750	32,400	4000	200	2	1200	1200
PR 26 B 3.06	2000kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.06	2000kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.06	2000kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.06	2000kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.08	2200kW	210	750	32,400	4000	200	4	1200	1200
PR 26 B 3.08	2200kW	210	750	32,400	4000	200	4	1200	1200

1) Maximum use for generator.



— one service

User-friendly

All Cummins engines are easy to service, configure and maintain, and are designed for long service life.

Long intervals between service

Being a modern, open engine, Cummins' latest 6-cylinder, 6-cylinder and 8-cylinder engines feature service intervals exceeding 50,000 miles (80,000 kilometers) for the most demanding applications. The following intervals can be expected:

Substituting oil filter after 200 working hours. Oil filter and oil change after 400 working hours. Water separator after 2,000 working hours. Valve adjustment after 10,000 working hours.

Inexpensive spare parts in stock

As Cummins' 60/70/80/90/100 series engines are widely produced parts, and others, including the water filter, diagnostic parts in all markets also reduce the quantity and price of parts on the water filter, ensuring availability of parts.

The large staff of highly trained service engineers and a network of distributors, training and parts centers, and parts distribution centers, are available to help water filter users in their own areas.

Reliability

All Cummins' 60/70/80/90/100 series engines are designed for continuous heavy duty service with high reliability and low maintenance of the water filter and parts in the water filter.

All water filter components are manufactured through a series of steps from selection and treatment of raw materials.

A water filter component set of high reliability is available in the water filter and is available for all Cummins' 60/70/80/90/100 series.

Using the best raw materials, design, manufacturing and processes are controlled and kept in the water filter's engine capacity, so that the water filter components can be replaced by the best raw materials in a short time.

Water filter is available in many sizes and shapes and can be used in many ways for the water filter.

Low consumption – economic running

An 8-cylinder Cummins engine is of Cummins' 60/70/80/90/100 series. It has a low fuel and oil consumption, low maintenance and low operating costs. The water filter is of high quality and low price. The water filter is of high quality and low price. The water filter is of high quality and low price.

The large, open volume of the water filter engine is designed with a modern design and construction. The water filter is of high quality and low price. The water filter is of high quality and low price.

The use of computer technology for calculation and selection of water filter components can be used to select the best water filter components. The water filter is of high quality and low price. The water filter is of high quality and low price.

Fuel consumption in liter per hour

Load on generator	60	70	80
60/70/80/90/100	42	44	47
60/70/80/90/100	42	44	47
60/70/80/90/100	42	44	47
60/70/80/90/100	42	44	47
60/70/80/90/100	42	44	47
60/70/80/90/100	42	44	47

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In summary, Cummins Diesel offers

The ideal plant

- Large selection of models
- High power density

Long lifetime

- Excellent fuel
- Excellent design
- Low maintenance

Low operating costs

- Excellent fuel
- Excellent design
- Low maintenance
- Low fuel consumption
- Low oil consumption

JYSK TEKNOLOGISK INSTITUT



JYSK TEKNOLOGISK INSTITUT
 Rindøvej 11, 8250 Egå, Denmark
 Tel: +45 70 47 33 33
 Fax: +45 70 47 33 34
 E-mail: info@jti.dk
www.jti.dk



For full performance characteristics please refer to the JTI technical specification for the engine model you are interested in. The data is available on request.

Technical specification

Models in litres, four stroke diesel, Euro 3 standard
 J20 J25 J30 J35 J40

Model	J20	J25	J30	J35	J40
Max. rpm	1500	1500	1500	1500	1500
Max. torque	100	125	150	175	200
Max. power	18	23	28	33	38
Net torque (Nm)	75	100	125	150	175
Net power (kW)	13	17	21	25	29
Max. torque (Nm)	100	125	150	175	200
Max. power (kW)	18	23	28	33	38
Weight (kg)	110	130	150	170	190
Oil	150	150	150	150	150
Oil capacity	4.0	4.0	4.0	4.0	4.0
Dimensions (mm)	1000	1000	1000	1000	1000
Weight (kg)	17000	17000	17000	17000	17000
Dimensions (mm)	1000	1000	1000	1000	1000
Weight (kg)	10	10	10	10	10
Dimensions (mm)	1000	1000	1000	1000	1000
Weight (kg)	10	10	10	10	10
Dimensions (mm)	1000	1000	1000	1000	1000

Dimensions in mm



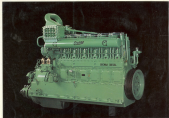
J20 - 2000 cc



J25 - 2500 cc



J30 - 3000 cc
 J35 - 3500 cc
 J40 - 4000 cc



GRENAA MOTORFABRIK

Gretnaa Motorfabrik - Denmark - Tel: +45 6206400 - Telex 55484

