

2012 HEAVY-DUTY DIESEL ENGINES

North American Availability & Specifications
37-1120 kW (50-1500 hp)



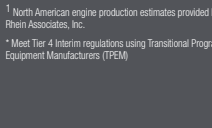
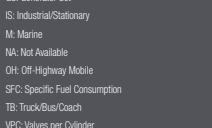
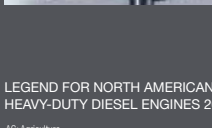
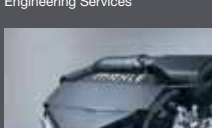
Driven by performance

MAHLE PRODUCTS

Engine Systems and Components



Filtration and Engine Peripherals



Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2011 Production Volume 1	U.S./EU Emissions Level	Layout	Cylinder Head, VPC	Power, kW (hp) @ rpm	Torque, Nm (lb-ft) @ rpm	Bore x Stroke, mm (in)	Compression Ratio	Applications	MAHLE Components
General Engine Products	Optimiser	6500	6.5	Franklin, OH	100	NA	VB	DL2	119-187 (160-250) @ 2000-3400	303-746 (250-550) @ 1700-2000	103 x 97 (4.06 x 3.82)	20.2:1	GS, M, TB	✓
Caterpillar	C	C2.2	2.2	Peaborough, UK, Griffin, GA	5,000	Tier 4 Interim / Stage IIIA	4 inline	DL1	31.4-83 (41.6-66.1) @ 2400-3000	130-206 (95.9-152.7) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, GS, OH	✓
Caterpillar	C	C3.4	3.4	Peaborough, UK, Griffin, GA	7,800	< 56 kW - Tier 4 Interim / Stage IIIA > 56 kW - Tier 4 Interim / Available in other regulated areas	4 inline	DL1	47.42-83.83 @ 2500	200-265 (147.5-41.6) @ 1800	84 x 120 (3.3 x 4.7)	22.1:1	AG, GS, OH	✓
Caterpillar	C	C3.4B	3.4	Japan	6,700	< 56 kW - Tier 4 Final / Stage IIIB > 56 kW - Tier 4 Interim / EU Stage IIIB	4 inline	DL1	45-86 (60.3-115.3) @ 2200-2500	243-420 (178.2-309.8) @ 1400-1600	89 x 119 (3.5 x 4.3)	17.0:1	AG, GS, OH	✓
Caterpillar	C	C4.4	4.4	Peaborough, UK	20,000	Tier 4 Interim	4 inline	DL1	55.5-83 (74.4-111.3) @ 2200-2400	307-416 (225-308) @ 1400	105 x 127 (4.1 x 5.0)	18.2:1	AG, GS, OH	✓
Caterpillar	C	C4.4 ACERT	4.4	Peaborough, UK	20,000	Tier 4 Interim	4 inline	DL1	61.5-106 (82.5-142) @ 2200	360-556 (265-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	C	C4.4 ACERT	4.4	Peaborough, UK	15,000	Tier 4 Interim / Stage IIIA	4 inline	DL1	61.5-106 (82.5-142) @ 2200	347-750 (256-530) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, GS, OH	✓
Caterpillar	C	C6.6 ACERT	6.6	Peaborough, UK	22,000	Tier 4 Interim	6 inline	DL1	89-205 (119.8-278.8) @ 1800-2100	546-1050 (402-776) @ 1400	125 x 137 (4.9 x 5.4)	16.2:1	AG, GS, OH	✓
Caterpillar	C	C6.6 ACERT	6.6	Peaborough, UK	9,500	Tier 4 Interim / Stage IIIA	6 inline	DL1	89-205 (119.8-278.8) @ 1800-2100	545-835 (402-608.5) @ 1400	125 x 137 (4.9 x 5.4)	16.5:1	AG, GS, OH	✓
Caterpillar	C	C7 ACERT	7.2	Shenandoah, VA	4,300	Tier 4 Interim	6 inline	DL1	168-224 (225-300) @ 1800-2200	1028-1274 (758-940) @ 1400	130 x 137 (5.1 x 5.4)	16.5:1	AG, GS, OH	✓
Caterpillar	C	C7 ACERT	7.2	Peaborough, UK	3,100	Tier 4 Interim / Stage IIIA	6 inline	DL1	145-225 (197.7-307.7) @ 2200	859-1274 (626.4-918.6) @ 1400	125 x 137 (4.9 x 5.4)	16.5:1	AG, GS, OH	✓
Caterpillar	C	C9 ACERT	9.0	Peaborough, UK	17,800	Tier 4 Interim	6 inline	DL1	205-293 (275-378) @ 1800-2100	1225-1666 (904-1238)	132 x 146 (5.2 x 5.7)	17.1:1	AG, GS, OH	✓
Caterpillar	C	C9.3 ACERT	9.3	Massville, IL	2,000	Tier 4 Interim / Stage IIIA	6 inline	DL1	224-361 (300-350) @ 1800-2200	752-878.4 (551.1-638.4) @ 1400	130 x 146 (5.1 x 5.7)	17.0:1	AG, GS, OH	✓
Caterpillar	C	C11 ACERT	11.1	Massville, IL	400	Tier 4 Interim	6 inline	DL1	245-336 (325-450) @ 1800-2100	1442-2056 (1057-1516) @ 1400	130 x 146 (5.1 x 5.7)	17.2:1	AG, GS, OH	✓
Caterpillar	C	C11 ACERT	11.1	Massville, IL	4,000	Tier 4 Interim	6 inline	DL1	202-300 (275-400) @ 1800-2100	1107-1510 (804-1144) @ 1400	125 x 146 (4.9 x 5.7)	17.1:1	AG, GS, OH	✓
Caterpillar	C	C13 ACERT	12.5	Massville, IL	4,200	Tier 4 Interim / Stage IIIA	6 inline	DL1	287-388 (385-520) @ 1800-2100	968.4-1308 (700-954) @ 1400	130 x 157 (5.1 x 6.2)	16.6:1	AG, GS, OH	✓
Caterpillar	C	C15 ACERT	15.0	Massville, IL	3,000	Tier 4 Interim	6 inline	DL1	328-444 (440-595) @ 1800-2100	207-2718 (1504-2004) @ 1400	137 x 171 (5.4 x 6.7)	18.1:1	AG, GS, OH	✓
Caterpillar	C	C15 ACERT	15.0	Massville, IL	17,500	Tier 4 Interim / Stage IIIA	6 inline	DL1	284-423 (475-560) @ 1800-2100	1187-1480 (865-1068) @ 1400	132 x 171 (5.2 x 6.7)	17.2:1	AG, GS, OH	✓
Caterpillar	C	C16 ACERT	16.1	Massville, IL	3,100	< 559 kW - Tier 4 Interim / Available in other regulated areas > 559 kW - Tier 4 Interim / Available in other regulated areas	6 inline	DL1	429-507 (575-680) @ 1800-2100	267-1759 (1938-2559) @ 1400	145 x 163 (5.7 x 7.2)	16.5:1	AG, GS, OH	✓
Caterpillar	C	C18 ACERT	18.1	Massville, IL	4,700	< 559 kW - Tier 4 Interim / Available in other regulated areas > 559 kW - Tier 4 Interim / Available in other regulated areas	6 inline	DL1	447-587 (600-800) @ 1800-2100	197-2-3658 (2027-2897) @ 1400	145 x 163 (5.7 x 7.2)	17.1:1	AG, GS, OH	✓
Caterpillar	C	C27 ACERT	27.0	Griffin, GA	1,100	Tier 4 Interim / Available in other regulated areas	VI2	DL1	597-868 (800-1150) @ 1800-2100	3607-5255 (2687-3876) @ 1400	137.2 x 152.4 (5.4 x 6.0)	16.5:1	AG, GS, OH	✓
Caterpillar	C	C32 ACERT	32.1	Griffin, GA	3,100	Tier 4 Interim / Available in other regulated areas	VI2	DL1	597-783 (800-1050) @ 1800-2100	2003-2641 (2686-3542) @ 1400	137.2 x 152.4 (5.4 x 6.0)	16.1:1	AG, GS, OH	✓
Caterpillar	C	C32 ACERT	32.1	Griffin, GA	2,100	Tier 4 Interim / Available in other regulated areas	VI2	DL1	709-1007 (900-1300) @ 1800-2100	4338-6166 (2020-4548) @ 1400	145 x 162 (5.7 x 6.3)	16.5:1	AG, GS, OH	✓
Caterpillar	C	C32 ACERT	32.1	Griffin, GA	2,400	Tier 4 Interim	VI2	DL1	709-885 (900-1200) @ 1800-2100	2383-2987 (2189-4005) @ 1400	145 x 162 (5.7 x 6.3)	15.1:1	AG, GS, OH	✓
Caterpillar	3000	3006	34.5	Lafayette, IN	75	Available in other regulated areas	VI2	DL1	507-746 (680-1000) @ 1200-1800	16 x 483 (31.44) @ 1200	170 x 180 (6.7 x 7.1)	13.0:1	AG, GS, OH	✓
Caterpillar	3000	3008	34.5	Lafayette, IN	200	Tier 4 Interim / Available in other regulated areas	VI2	DL1	746-803 (1000-1100) @ 1800	16 x 483 (31.44) @ 1200	170 x 180 (6.7 x 7.1)	14.0:1	AG, GS, OH	✓
Caterpillar	3000	3012	51.8	Lafayette, IN	50	Available in other regulated areas	VI2	DL1	761-1119 (1020-1500) @ 1200-1800	16 x 621 (31.69) @ 1200	170 x 180 (6.7 x 7.1)	13.0:1	AG, GS, OH	✓
Caterpillar	3000	3012	51.8	Lafayette, IN	2,400	Tier 4 Interim / Available in other regulated areas	VI2	DL1	1119-1221 (1500-1800) @ 1200-1800	16 x 621 (31.69) @ 1200	170 x 180 (6.7 x 7.1)	14.0:1	AG, GS, OH	✓
Caterpillar	3000	3016	69.0	Lafayette, IN	3,600	Available in other regulated areas	VI2	DL1	1011-1462 (1350-2000) @ 1200-1800	16 x 831 (31.99) @ 1200	170 x 180 (6.7 x 7.1)	13.0:1	AG, GS, OH	✓
Caterpillar	400	4000-22	2.2	Griffin, GA	2,000	Tier 4 Interim / Stage IIIA	4 inline	DL1	31.4-83 (41.6-66.1) @ 2200-3000	130-142 (95.9-105.2) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, GS, OH	✓
Caterpillar	400	4000-22T	2.2	Griffin, GA	1,600	Tier 4 Interim / Stage IIIA	4 inline	DL1	31.4-83 (41.6-66.1) @ 2200-3000	130-142 (95.9-105.2) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, GS, OH	✓
Caterpillar	400	4000-22TA	2.2	Griffin, GA	1,200	Tier 4 Interim / Stage IIIA	4 inline	DL1	31.4-83 (41.6-66.1) @ 2200-3000	130-142 (95.9-105.2) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, GS, OH	✓
Caterpillar	400	4000-33	3.3	Griffin, GA	1,000	Tier 4 Interim / Stage IIIA	4 inline	DL1	47.42-83.83 @ 2500	200-265 (147.5-41.6) @ 1800	84 x 120 (3.3 x 4.7)	22.1:1	AG, GS, OH	✓
Caterpillar	400	4000-33T	3.3	Japan	8,800	< 56 kW - Tier 4 Final / Stage IIIB > 56 kW - Tier 4 Interim	4 inline	DL1	55-86 (60.3-115.3) @ 2200-2500	243-420 (178.2-309.8) @ 1400-1600	89 x 119 (3.5 x 4.3)	17.0:1	AG, GS, OH	✓
Caterpillar	400	4000-33TA	3.3	Japan	2,200	Tier 4 Interim / Stage IIIB	4 inline	DL1	55-86 (60.3-115.3) @ 2200-2500	243-420 (178.2-309.8) @ 1400-1600	89 x 119 (3.5 x 4.3)	17.0:1	AG, GS, OH	✓
Caterpillar	400	4000-33TB	3.3	Japan	4,500	Tier 4 Interim / Stage IIIB	4 inline	DL1	55-86 (60.3-115.3) @ 2200-2500	243-420 (178.2-309.8) @ 1400-1600	89 x 119 (3.5 x 4.3)	17.0:1	AG, GS, OH	✓
Caterpillar	1100	1100D-44T	4.4	Peaborough, UK	20,000	Tier 4 Interim	4 inline	DL1	55.5-83 (74.4-111.3) @ 2200-2400	307-416 (225-308) @ 1400	105 x 127 (4.1 x 5.0)	18.2:1	AG, GS, OH	✓
Caterpillar	1100	1100D-44TA	4.4	Peaborough, UK	15,000	Tier 4 Interim	4 inline	DL1	55.5-83 (74.4-111.3) @ 2200-2400	307-416 (225-308) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	1100	1100D-44TB	4.4	Peaborough, UK	15,000	Tier 4 Interim	4 inline	DL1	55.5-83 (74.4-111.3) @ 2200-2400	307-416 (225-308) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	1100	1100D-64T	4.4	Peaborough, UK	15,000	Tier 4 Interim	4 inline	DL1	61.5-106 (82.5-142) @ 2200	360-556 (265-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	1100	1100D-64TA	4.4	Peaborough, UK	15,000	Tier 4 Interim	4 inline	DL1	61.5-106 (82.5-142) @ 2200	360-556 (265-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	1100	1100D-64TB	4.4	Peaborough, UK	22,000	Tier 4 Interim	4 inline	DL1	61.5-106 (82.5-142) @ 2200	360-556 (265-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TA	4.4	Peaborough, UK	15,000	Tier 4 Interim	4 inline	DL1	74.5-166.2 (99.9-142.0) @ 2200-2400	469-556 (345-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TA	4.4	Peaborough, UK	15,000	Tier 4 Interim	4 inline	DL1	74.5-166.2 (99.9-142.0) @ 2200-2400	469-556 (345-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TB	4.4	Peaborough, UK	15,000	Tier 4 Interim	4 inline	DL1	74.5-166.2 (99.9-142.0) @ 2200-2400	469-556 (345-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TA	4.4	Peaborough, UK	18,000	Tier 4 Interim / Stage IIIA	4 inline	DL1	61.5-106 (82.5-142) @ 2200	347-560 (256-410) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TA	4.4	Peaborough, UK	18,000	Tier 4 Interim / Stage IIIA	4 inline	DL1	61.5-106 (82.5-142) @ 2200	347-560 (256-410) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TB	4.4	Peaborough, UK	9,500	Tier 4 Interim / Stage IIIA	4 inline	DL1	105.1-129.4 (141-173.5) @ 2200	630-730 (464-553) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TB	4.4	Peaborough, UK	9,500	Tier 4 Interim / Stage IIIA	4 inline	DL1	105.1-129.4 (141-173.5) @ 2200	630-730 (464-553) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TB	4.4	Peaborough, UK	9,500	Tier 4 Interim / Stage IIIA	4 inline	DL1	89-129.4 (119.8-173.5) @ 2200	545-835 (402-608.5) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TB	4.4	Peaborough, UK	9,500	Tier 4 Interim / Stage IIIA	4 inline	DL1	89-129.4 (119.8-173.5) @ 2200	545-835 (402-608.5) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, GS, OH	✓
Caterpillar	1200	1200E-64TB	4.4	Peaborough, UK	9,500	Tier 4 Interim / Stage IIIA	4 inline	DL1	145-225 (1					

2012

HEAVY-DUTY DIESEL ENGINES



North American Availability & Specifications 37-1120 kW (50-1500 hp)

MAHLE PRODUCTS



LEGEND FOR NORTH AMERICAN HEAVY-DUTY DIESEL ENGINES 2012

- AG: Agriculture
- GS: Generator Set
- IS: Industrial/Stationary
- M: Marine
- NA: Not Available
- OH: Off-Highway Mobile
- SFC: Specific Fuel Consumption
- TB: Truck/Bus/Coach
- VPC: Valves per Cylinder

¹ North American engine production estimates provided by Rhein Associates, Inc.

* Meet Tier 4 Interim regulations using Transitional Program for Equipment Manufacturers (TPEM)

Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2011 Production Volume 1	U.S./EU Emissions Level	Layout	Cylinder Head, VPC	Power, kW (hp) @ rpm	Torque, N•m (lb•ft) @ rpm	Bore x Stroke, mm (in)	Compression Ratio	Application	MAHLE Components
AM GENERAL														
General Engine Products	Optimizer	6500	6.5	Franklin, OH	100	NA	V8	IDI, 2	119-187 (160-250) @ 3000 to 3400	393-746 (290-550) @ 1700-2000	103 x 97 (4.06 x 3.82)	20.2:1	GS, M, MI, TB	✓
CATERPILLAR														
Caterpillar	C	C2.2	2.2	Peterborough, UK; Griffin, GA	5,500	Tier 4 Interim / Stage IIIA	4, inline	IDI	31.0-49.3 (41.6-66.1) @ 2400-3000	130-208.4 (95.9-153.7) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, IS, OH	✓
Caterpillar	C	C3.4	3.3	Japan	7,800	< 56 kW = Tier 4 Interim / Stage IIIA >56 kW = * Tier 4 Interim / Available in other regulated areas	4, inline	IDI/DI	47-62 (63-83) @ 2500	200-265 (147.5-195.4) @ 1600	94 x 120 (3.7 x 4.7)	22:1	AG, IS, OH	✓
Caterpillar	C	C3.4B	3.4	Japan	6,700	< 56 kW = 2013 Tier 4 Final / Stage IIIB >56 kW = Tier 4 Interim / EU Stage IIIB	4, inline	DI	45-86 (60.3-115.3) @ 2200-2500	243-420 (179.2-309.8) @ 1400-1600	99 x 110 (3.9 x 4.3)	17.0:1	AG, IS, OH	✓
Caterpillar	C	C4.4	4.4	Peterborough, UK	20,000	* Tier 4 Interim	4, inline	DI	55.5-83 (74.4-111.3) @ 2200-2400	307-418 (226-308) @ 1400	105 x 127 (4.1 x 5.0)	18.2:1	AG, IS, OH	✓
Caterpillar	C	C4.4 ACERT	4.4	Peterborough, UK	25,000	* Tier 4 Interim	4, inline	DI	61.5-106.2 (82.5-142) @ 2200	360-556 (265-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, IS, OH	✓
Caterpillar	C	C4.4 ACERT	4.4	Peterborough, UK	15,000	Tier 4 Interim / Stage IIIB	4, inline	DI	61.5-129.4 (82.5-173.5)	347-750 (256-553) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Caterpillar	C	C6.6 ACERT	6.6	Peterborough, UK	22,000	* Tier 4 Interim	6, inline	DI	89-205 (119.4-274.9) @ 1800-2500	545-1050 (402-774) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, IS, OH	✓
Caterpillar	C	C6.6 ACERT	6.6	Peterborough, UK	9,500	Tier 4 Interim / Stage IIIB	6, inline	DI	89-129.4 (119.3-173.5)	545-825 (402-608.5) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Caterpillar	C	C7 ACERT	7.2	Greenville, SC	4,300	* Tier 4 Interim	6, inline	DI	168-224 (225-300) @ 1800-2200	1028-1274 (758-940) @ 1400	110 x 127 (4.33 x 5.0)	16.5:1	AG, IS, OH	✓
Caterpillar	C	C7.1 ACERT	7.0	Peterborough, UK	3,000	Tier 4 Interim / Stage IIIB	6, inline	DI	140-225 (187.7-301.7) @ 2200	890-1274 (656.4-939.6) @ 1400	105 x 135 (4.1 x 5.3)	16.5:1	AG, IS, OH	✓
Caterpillar	C	C9 ACERT	8.8	Greenville, SC	17,800	* Tier 4 Interim	6, inline	DI	205-280 (275-375) @ 1800-2200	1225-1668 (904-1230)	112 x 149 (4.41 x 5.87)	16.3:1	AG, IS, OH	✓
Caterpillar	C	C9.3 ACERT	9.3	Mossville, IL	2,000	Tier 4 Interim / Stage IIIB	6, inline	DI	224-261 (300-350) @ 1800-2200	753.2-878.4 (1010-1178) @ 1400	115 x 149 (4.53 x 5.87)	17.08:1	AG, IS, OH	✓
Caterpillar	C	C11 ACERT	11.1	Mossville, IL	400	* Tier 4 Interim	6, inline	DI	242-336 (325-450) @ 1800-2100	1487-2056 (1097-1516) @ 1400	130 x 140 (5.12 x 5.51)	17.2:1	AG, IS, OH	✓
Caterpillar	C	C13 ACERT	12.5	Mossville, IL	4,500	* Tier 4 Interim	6, inline	DI	287-388 (385-520) @ 1800-2100	1107-1151 (1484-1544) @ 1400	130 x 157 (5.12 x 6.2)	17.3:1	AG, IS, OH	✓
Caterpillar	C	C13 ACERT	12.5	Mossville, IL	4,200	Tier 4 Interim / Stage IIIB	6, inline	DI	287-388 (385-520) @ 1800-2100	969.4-1308 (1300-1754) @ 1400	130 x 157 (5.12 x 6.2)	16.95:1	AG, IS, OH	✓
Caterpillar	C	C15 ACERT	15.2	Mossville, IL	5,000	* Tier 4 Interim	6, inline	DI	328-444 (440-595) @ 1800-2100	2012-2716 (1484-2004) @ 1400	137.2 x 171.4 (5.4 x 6.75)	18:1	AG, IS, OH	✓
Caterpillar	C	C15 ACERT	15.2	Mossville, IL	17,500	Tier 4 Interim / Stage IIIB	6, inline	DI	354-433 (475-580) @ 1800-2100	1197-1460 (1605-1958) @ 1400	137 x 171 (5.4 x 6.73)	17:1	AG, IS, OH	✓
Caterpillar	C	C18 ACERT	18.1	Mossville, IL	3,000	<=559 kW = * Tier 4 Interim / Available in other regulated areas >559 kW = * Tier 4 Interim / Available in other regulated areas	6, inline	DI	429-597 (575-800) @ 1800-2100	2627-1759 (1938-2359) @ 1400	145 x 183 (5.71 x 7.2)	16.3:1	AG, IS, OH	✓
Caterpillar	C	C18 ACERT	18.1	Mossville, IL	4,700	<=559 kW = Tier 4 Interim / Stage IIIB > 559 kW = Tier 4 Interim or Tier 4 Final	6, inline	DI	447-597 (600-800) @ 1800-1900	1512-3656 (2027-2697) @ 1400	145 x 183 (5.71 x 7.2)	17:1	AG, IS, OH	✓
Caterpillar	C	C27 ACERT	27.0	Griffin, GA	1,000	* Tier 4 Interim / Available in other regulated areas	V12	DI	597-858 (800-1150) @ 1800-2100	3657-5255 (2697-3876) @ 1400	137.2 x 152.4 (5.4 x 6.0)	16.5:1	AG, IS, OH	✓
Caterpillar	C	C27 ACERT	27.0	Griffin, GA	3,100	Tier 4 Interim	V12	DI	597-783 (800-1050) @ 1800-2100	2003-2641 (2686-3542) @ 1400	137.2 x 152.4 (5.4 x 6.0)	16:1	AG, IS, OH	✓
Caterpillar	C	C32 ACERT	32.1	Griffin, GA	1,000	* Tier 4 Interim / Available in other regulated areas	V12	DI	708-1007 (950-1350) @ 1800-2100	4338-6166 (3200-4548) @ 1400	145 x 162 (5.71 x 6.38)	16.5:1	AG, IS, OH	✓
Caterpillar	C	C32 ACERT	32.1	Griffin, GA	2,400	Tier 4 Interim	V12	DI	709-895 (950-1200) @ 1800-2100	2363-2987 (3169-4005) @ 1400	145 x 162 (5.71 x 6.38)	15:1	AG, IS, OH	✓
Caterpillar	3500	Lafayette	34.5	Lafayette, IN	25	Available in other regulated areas	V8	DI	507-746 (680-1000) @ 1200-1800	Up to 4263 (3144) @ 1400	170 x 190 (6.7 x 7.5)	13.0:1	AG, IS, OH	✓
Caterpillar	3500	3508B	34.5	Lafayette, IN	700	* Tier 4 Interim / Available in other regulated areas	V8	DI	746-820 (1000-1100) @ 1800	Up to 4337 (3199) @ 1400	170 x 190 (6.7 x 7.5)	14.0:1	AG, IS, OH	✓
Caterpillar	3500	3512	51.8	Lafayette, IN	50	Available in other regulated areas	V12	DI	761-1119 (1020-1500) @ 1200-1800	Up to 6210 (4580) @ 1400	170 x 190 (6.7 x 7.5)	13.0:1	AG, IS, OH	✓
Caterpillar	3500	3512B	51.8	Lafayette, IN	2,400	* Tier 4 Interim / Available in other regulated areas	V12	DI	1119-1231 (1500-1650) @ 1800	Up to 7153 (5276) @ 1400	170 x 190 (6.7 x 7.5)	14.0:1	AG, IS, OH	✓
Caterpillar	3500	3516	69.0	Lafayette, IN	3,650	Available in other regulated areas	V16	DI	1011-1492 (1355-2000) @ 1200-1800	Up to 8391 (6189) @ 1400	170 x 190 (6.7 x 7.5)	13.0:1	AG, IS, OH	✓
Perkins	400	404D-22	2.2	UK; Griffin, GA	5,000	Tier 4 Interim / Stage IIIA	4, inline	IDI	31.0-38.0 (41.6-51.0) @ 2200-3000	130-142.9 (95.9-105.2) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, IS, GS, OH	✓
Perkins	400	404D-22T	2.2	UK; Griffin, GA	6,000	Tier 4 Interim / Stage IIIA	4, inline	IDI	36.3-45.5 (48.7-61.0) @ 2600-3000	154.0-189.1 (113.6-139.5) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, IS, GS, OH	✓
Perkins	400	404D-22TA	2.2	UK; Griffin, GA	1,200	Tier 4 Interim / Stage IIIA	4, inline	IDI	49.3 (66.1) @ 2800	208.4 (153.7) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, IS, GS, OH	✓
Perkins	800	804D-33	3.3	Japan	1,000	Tier 4 Interim / Stage IIIA	4, inline	IDI	47.0 (63.0) @ 2500	200 (147.5) @ 1600	94 x 120 (3.7 x 4.7)	22.0:1	AG, IS, GS, OH	✓
Perkins	800	804D-33T	3.3	Japan	6,800	< 56 kW = Tier 4 Interim / Stage IIIA >56 kW = * Tier 4 Interim	4, inline	DI	55-62 (73.8-83) @ 2500	245-265 (180.7-195.4) @ 1600	94 x 120 (3.7 x 4.7)	19.5:1	AG, IS, GS, OH	✓
Perkins	800	854E-E34TA	3.4	Japan	2,200	Tier 4 Interim / Stage IIIB	4, inline	DI	63-86.0 (84.5-115.3) @ 2200-2500	340-420 (250-309.8) @ 1400-1600	99 x 110 (3.9 x 4.3)	17.0:1	AG, IS, GS, OH	✓
Perkins	800	854F-E34T	3.4	Japan	4,500	Tier 4 Final / Stage IIIB	4, inline	DI	45-55.4 (60.3-74.3) @ 2200-2500	243-310 (179.2-228.6)	99 x 110 (3.9 x 4.3)	17.0:1	AG, IS, GS, OH	✓
Perkins	1100	1104D-44T	4.4	Peterborough, UK	20,000	* Tier 4 Interim	4, inline	DI	55.5-74.5 (74.4-99.9) @ 2200-2400	307-392 (226-289) @ 1400	105 x 127 (4.1 x 5.0)	18.2:1	AG, IS, GS, OH	✓
Perkins	1100	1104D-44TA	4.4	Peterborough, UK	10,000	* Tier 4 Interim	4, inline	DI	68-83 (91.2-111.3) @ 2200-2400	393-418 (290.6-308) @ 1400	105 x 127 (4.1 x 5.0)	18.2:1	AG, IS, GS, OH	✓
Perkins	1100	1104D-E44T	4.4	Peterborough, UK	15,000	* Tier 4 Interim	4, inline	DI	61.5-74.5 (82.5-99.9) @ 2200	360-420 (265-309) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, IS, GS, OH	✓

2012

HEAVY-DUTY DIESEL ENGINES

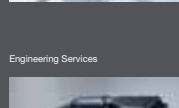


North American Availability & Specifications 37-1120 kW (50-1500 hp)

MAHLE PRODUCTS

Engine Systems and Components

Filtration and Engine Peripherals



Engineering Services

LEGEND FOR NORTH AMERICAN HEAVY-DUTY DIESEL ENGINES 2012

- AG: Agriculture
- GS: Generator Set
- IS: Industrial/Stationary
- M: Marine
- NA: Not Available
- OH: Off-Highway Mobile
- SFC: Specific Fuel Consumption
- TB: Truck/Bus/Coach
- VPC: Valves per Cylinder

¹ North American engine production estimates provided by Rhein Associates, Inc.

* Meet Tier 4 Interim regulations using Transitional Program for Equipment Manufacturers (TPEM)

Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2011 Production Volume 1	U.S./EU Emissions Level	Layout	Cylinder Head, VPC	Power, kW (hp) @ rpm	Torque, N•m (lb•ft) @ rpm	Bore x Stroke, mm (in)	Compression Ratio	Application	MAHLE Components
CATERPILLAR Continued														
Perkins	1100	1104D-E44TA	4.4	Peterborough, UK	15,000	* Tier 4 Interim	4, inline	DI	74.5-106.2 (99.9-142.0) @ 2200-2400	468-556 (345-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, IS, GS, OH	✓
Perkins	1100	1106D-E66TA	6.6	Peterborough, UK	22,000	* Tier 4 Interim	4, inline	DI	89-205 (119-275) @ 1800-2500	545-1050 (402-774) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, IS	✓
Perkins	1200	1204E-E44TA	4.4	Peterborough, UK	18,000	Tier 4 Interim / Stage IIIB	4, inline	DI	61.5-110.1 (82.5-147.6) @ 2200	347-560 (256-413) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Perkins	1200	1204E-E44TTA	4.4	Peterborough, UK	18,000	Tier 4 Interim / Stage IIIB	4, inline	DI	105.1-129.4 (141-173.5) @ 2200	630-750 (464.7-553) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Perkins	1200	1206E-E66TA	6.6	Peterborough, UK	9,500	Tier 4 Interim / Stage IIIB	6, inline	DI	89-129.4 (119.3-173.5) @ 2200	545-825 (402-608.5) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Perkins	1200	1206E-E70TTA	7.0	Peterborough, UK	3,500	Tier 4 Interim / Stage IIIB	6, inline	DI	140-225 (187.7-301.7) @ 2200	890-1274 (656.4-939.6) @ 1400	105 x 135 (4.1 x 5.3)	16.5:1	AG, IS, OH	✓
CUMMINS														
Cummins	B	B3.3	3.3	Japan; India	32,000	Tier 4 Interim	4, inline	DI, 2	45-63 (60-85)	214-181 (158-245) @ 1600	95 x 115 (3.74 x 4.53)	NA	AG, IS, OH, GS	✓
Cummins	B	QSB3.3	3.3	Japan	10,000	Tier 4 Interim	4, inline	DI, 4	56-89 (75-120)	375-415 (277-306) @ 1600	95 x 115 (3.74 x 4.53)	NA	AG, IS, OH, GS	✓
Cummins	B	QSB4.5	4.5	Rocky Mount, NC	3,500	Tier 4 Interim	4, inline	DI, 4	82-122 (110-163)	488-632 (360-466) @ 1500	107 x 124 (4.21 x 4.88)	NA	AG, IS, OH, GS	✓
Cummins	B	QSB6.7	6.7	Rocky Mount, NC	24,000	Tier 4 Interim	6, inline	DI, 4	194-224 (146-300)	540-760 (732-1030) @ 1500-1800	107 x 124 (4.21 x 4.88)	NA	AG, IS, OH, M, GS	✓
Cummins	B	ISB6.7	6.7	Rocky Mount, NC	116,000	EPA 2010	6, inline	DI, 4	200-325 (149-243) @ 2300	705-1017 (520-750 800) @ 1600/1800	107 x 124 (4.21 x 4.88)	NA	TB	✓
Cummins	C	ISC8.3	8.3	Rocky Mount, NC	19,000	EPA 2010	6, inline	DI, 4	194-261 (260-350) @ 2000	895-1356 (660-1000) @ 1400	114 x 135 (4.5 x 5.3)	NA	TB	✓
Cummins	L	QSL9	8.9	Rocky Mount, NC	20,000	Tier 4 Interim	6, inline	DI, 4	172-298 (230-400)	915-1627 (675-1200)	114 x 145 (4.5 x 5.7)	NA	AG, IS, OH, GS	✓
Cummins	L	ISL9	8.9	Rocky Mount, NC	12,000	EPA 2010	6, inline	DI, 4	257-283 (345-380) @ 1900	1150-1300 (1559-1763) @ 1400	114 x 145 (4.5 x 5.7)	NA	TB	✓
Cummins	X	QSX11.9	11.9	Jamestown, NY	500	Tier 4 Interim	6, inline	DI, 4	224-373 (290-500)	1481-2169 (1090-1600) @ 1400	130 x 150 (5.11 x 5.91)	NA	AG, IS, OH, GS	✓
Cummins	X	ISX12	11.9	Jamestown, NY	9,900	EPA 2010	6, inline	DI, 4	231-317 (310-425) @ 1800	1559-2237 (1150-1650) @ 1200	130 x 150 (5.11 x 5.91)	NA	TB	✓
Cummins	X	QSX15	14.9	Jamestown, NY	200	Tier 4 Interim	6, inline	DI, 4	298-447 (400-600) @ 1800	2034-2778 (1500-2050) @ 1400	137 x 169 (5.39 x 6.65)	NA	AG, IS, OH, GS	✓
Cummins	X	ISX15	14.9	Jamestown, NY	79,000	EPA 2010	6, inline	DI, 4	298-447 (400-600)	1966-2779 (1450-2050) @ 1100	137 x 169 (5.39 x 6.65)	NA	TB	✓
Cummins	K	QSK19	19.0	Seymour, IN	1,500	* Tier 4 Interim	6, inline	DI, 4	377-597 (506-800) @ 2100	2755-3084 (2032-2275) @ 1500	159 x 159 (6.25 x 6.25)	NA	AG, IS, OH, M, GS	✓
Cummins	K	QSK23	23.0	Oyama, Japan	3,500	* Tier 4 Interim	6, inline	DI, 4	567-708 (760-950) @ 1800-2100	3468-3928 (2558-2897) @ 1350-1400	170 x 170 (6.69 x 6.69)	NA	IS, OH, M, GS	✓
Cummins	T	QST30	30.5	Seymour, IN	1,500	* Tier 4 Interim	V12	DI, 4	567-895 (760-1200) @ 1800-2100	3350-5084 (2471-3750) @ 1300-1400	140 x 165 (5.5 x 6.5)	NA	IS, OH, M, GS	✓
Cummins	K	QSK38	37.8	Daventry, UK	2,000	* Tier 4 Interim	V12	DI, 4	810-940 (1086-1260) @ 1800	4869-5235 (3591-3861) @ 1350-1400	159 x 159 (6.25 x 6.25)	NA	IS, OH, M, GS	✓
Cummins	K	QSK50	50.3	Daventry, UK	1,500	* Tier 4 Interim	V16	DI, 4	1044-1492 (1400-2000) @ 1800-1900	6382-7871 (4707-5805) @ 1300-1500	159 x 159 (6.25 x 6.25)	NA	IS, OH, M, GS	✓
DAIMLER														
Detroit Diesel	DD Platform	DD13	12.8	Detroit, MI; Mannheim, Germany	21,000	EPA 2010	6, inline	DI, 4	260-350 (350-470) @ 1800	1695-2240 (1250-1650) @ 1100	132 x 156 (5.20 x 6.15)	17.3:1	OH, TB	✓
Detroit Diesel	DD Platform	DD15	14.8	Detroit, MI; Mannheim, Germany	35,000	EPA 2010	6, inline	DI, 4	340-418 (455-560) @ 1800	2100-2510 (1550-1850) @ 1100	139 x 163 (5.47 x 6.42)	18.4:1	OH, TB	✓
Detroit Diesel	DD Platform	DD16	15.6	Detroit, MI; Mannheim, Germany	7,000	EPA 2010	6, inline	DI, 4	354-447 (475-600) @ 1800	2370-2780 (1750-2050) @ 1100	139 x 171 (5.47 x 6.73)	17.1	OH, TB	✓
DEUTZ														
Deutz	TCD 2.9 L4		2.9	Germany	1,100	Tier 4 Final / Stage III B	4, inline	DI, 2	55.4 (75) @ 2600	255 (188) @ 1600-1800	92 x 110 (3.6 x 4.3)	17:1	AG, OH	✓
Deutz	TCD 3.6 L4		3.6	Germany	11,800	Tier 4 Final / Stage III B	4, inline	DI, 2	75-90 (100-120) @ 2300-2600	390-480 (288-354) @ 1600	98 x 120 (3.9 x 4.7)	18:1	AG, OH	✓
Deutz	912 W		3.8-5.7	Germany	14,000	Tier 2	4, 5, 6 inline	DI, 2	46-69 (64-93) @ 2500	198-298 (146-220) @ 1500	102 x 125 (4.02 x 4.92)	22:1	AG, IS, OH, GS, TB	✓
Deutz	912		3.8-5.7	Germany	1,000	Tier 2	4, 5, 6 inline	DI, 2	46-70 (64-94) @ 2300	247-370 (182-273) @ 1450	100 x 120 (3.94 x 4.72)	18:1	M	✓
Deutz	2011		3.6	Germany	15,000	Tier 3 / Stage III A	4, inline	DI, 2	46-74.9 (62-100) @ 2800	190-350 (140-258) @ 1600/1700	96 x 125 (3.78 x 4.92)	18:1-19:1	IS, OH, GS	✓
Deutz	2009	TD2009L4	2.3	Germany	5,000	Tier 4 Interim / Stage III A	4, inline	DI, 2	50 (67) @ 2800	190 (140) @ 1600	90 x 90 (3.54 x 3.54)	18:1	IS, OH, GS	✓
Deutz	2012	TCD2012L4	4.0	Germany	40,000	Tier 4 Interim / Stage III A	4, inline	DI, 2	103 (138) @ 2400	520 (384) @ 1600	101 x 126 (3.98 x 4.96)	18:1	AG, IS, OH, GS	✓
Deutz	1013	BF4M1013E/C	4.8	Germany	9,000	Tier 4 Interim / Stage III A	4, inline	DI, 2	90-115 (121-154) @ 2300	442-548 (326-404) @ 1400	108 x 130 (4.25 x 5.12)	17.6:1	AG, IS, OH, GS	✓

2012

HEAVY-DUTY DIESEL ENGINES



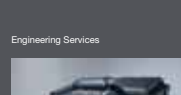
North American Availability & Specifications 37-1120 kW (50-1500 hp)

MAHLE PRODUCTS

Engine Systems and Components



Filtration and Engine Peripherals



Engineering Services

LEGEND FOR NORTH AMERICAN HEAVY-DUTY DIESEL ENGINES 2012

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- SFC: Specific Fuel Consumption
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- VPC: Valves per Cylinder

¹ North American engine production estimates provided by Rhein Associates, Inc.

* Meet Tier 4 Interim regulations using Transitional Program for Equipment Manufacturers (TPEM)

Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2011 Production Volume 1	U.S./EU Emissions Level	Layout	Cylinder Head, VPC	Power, kW (hp) @ rpm	Torque, N•m (lb•ft) @ rpm	Bore x Stroke, mm (in)	Compression Ratio	Application	MAHLE Components
FPT INDUSTRIAL														
FPT Industrial	F1 Series	S 30	3.0	Torino, Italy	8,000	Euro 4/5	4, inline	DI, 4	85-169 (114-227) @ 3500-4000	360-480 (266-354) @ 1800-2400	95.8 x 104 (3.77 x 4.09)	NA	TB	✓
FPT Industrial	F5 Series	F 32	3.2	Torino, Italy	79,000	Tier 4 Interim / Stage III B	4, inline	DI, 4	47-57 (63-76) @ 1800	320 (236) @ 1400	99 x 104 (3.90 x 4.09)	18.1	GS	✓
FPT Industrial	NEF Series	N 45	4.5	Torino, Italy	70,000	Tier 4 Interim / Stage III B	4, inline	DI, 4	75-125 (101-168) @ 2200	472-700 (348-516) @ 1400-1500	104 x 132 (4.09 x 5.20)	17.5:1	AG, GS, IS, M, OH	✓
FPT Industrial	NEF Series	N 67	6.7	Torino, Italy	35,000	Tier 4 Interim / Stage III B	6, inline	DI, 4	129-210 (173-282) @ 2200	810-1143 (597-843) @ 1500	104 x 132 (4.09 x 5.20)	17.5:1	AG, GS, IS, M, OH	✓
FPT Industrial	Cursor Series	C 78	7.8	Bourbon-Lancy, France	10,000	Euro 4/5	6, inline	DI, 4	294-368 (400-500) @ 2600	1601-1645 (1181-1215) @ 1600-1800	115 x 125 (4.53 x 4.93)	16.0:1	TB	✓
FPT Industrial	Cursor Series	C 87	8.7	Bourbon-Lancy, France	25,000	Tier 4 Interim / Stage III B	6, inline	DI, 4	245-295 (329-396) @ 2150	1430-1640 (1055-1210) @ 1100-1600	117 x 135 (4.60 x 5.31)	16.0:1	AG, GS, IS, M, OH	✓
FPT Industrial	Cursor Series	C 10	10.3	Bourbon-Lancy, France	13,000	Tier 3	6, inline	DI, 4	335 (449) @ 1800	NA	125 x 140 (4.92 x 5.51)	16.5:1	GS	✓
FPT Industrial	Cursor Series	C 13	12.9	Bourbon-Lancy, France	12,000	Tier 4 Interim / Stage III B	6, inline	DI, 4	332-407 (445-546) @ 2100	1900-2400 (1400-1770) @ 1400	135 x 150 (5.31 x 5.91)	16.5:1	AG, GS, IS, M, OH	✓
FORD														
Ford	Vulcan	Powerstroke 6.7L	6.7	Chihuahua, Mexico	362,000	EPA 2010	V8	DI, 4	298 (400) @ 2800	1085 (800) @ 1600	99.1 x 108 (3.90 x 4.25)	16.2:1	TB	✓
GENERAL MOTORS														
GM/Isuzu	Duramax	6.6L	6.6	Moraine, OH	3,000	EPA 2010	V8	DI, 4	194 (260) @ 3100	727 (525) @ 1600	103 x 99 (4.0 x 3.9)	16.8:1	TB	✓
GM/Isuzu	Duramax	6.6L	6.6	Moraine, OH	61,000	EPA 2010	V8	DI, 4	296 (397) @ 3000	1037 (765) @ 1600	103 x 99 (4.0 x 3.9)	16.6:1	TB	✓
GM/Isuzu	Isuzu	7800	7.8	Tochigi, Japan	3,000	EPA 2010	6, inline	DI, 4	149-224 (200-300) @ 2200	706-1167 (520-860) @ 1450	115 x 125 (4.53 x 4.92)	16.8:1	TB	✓
JOHN DEERE														
John Deere	PowerTech M	4024T	2.4	Torreon, Mexico	2,500	Interim Tier 4 / Stage III A	4, inline	DI, 2	36 (48) @ 2800	175 (129) @ 1500	86 x 105 (3.4 x 4.1)	20.5:1	AG, GS, IS, OH	✓
John Deere	PowerTech E	4024H	2.4	Torreon, Mexico	11,000	Interim Tier 4 / Stage III A	4, inline	DI, 2	45-49 (60-66) @ 2400-2800	214-256 (158-189) @ 1800-2000	86 x 105 (3.4 x 4.1)	18.2:1	AG, GS, IS, OH	✓
John Deere	PowerTech E	4024H	2.4	Torreon, Mexico	9,000	Tier 3 / Stage III A	4, inline	DI, 2	60 (80) @ 2800	283 (209) @ 2000	86 x 105 (3.4 x 4.1)	18.2:1	AG, GS, IS, OH	✓
John Deere	PowerTech E	5030H	3.0	Torreon, Mexico	3,200	Tier 3 / Stage III A	5, inline	DI, 2	57-74 (76-99) @ 2400-2800	204-252 (276-341) @ 1800-2000	86 x 105 (3.4 x 4.1)	18.2:1	AG, GS, IS, OH	✓
John Deere	PowerTech M	4045T/H	4.5	Saran, France; Torreon, Mexico	9,000	Tier 3 / Stage III A	4, inline	DI, 2	56-74 (75-99) @ 2200-2400	275-383 (203-282) @ 1600-1700	106.5 x 127 (4.2 x 5.0)	19.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech M	4045T	4.5	Saran, France; Torreon, Mexico	16,000	Interim Tier 4	4, inline	DI, 2	55 (74) @ 2400	265 (195) @ 1700	106.5 x 127 (4.2 x 5.0)	19.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech E	4045T/H	4.5	Saran, France; Torreon, Mexico	6,000	Tier 3 / Stage III A	4, inline	DI, 2	63-104 (85-140) @ 2200-2400	313-525 (231-387) @ 1500-1600	106.5 x 127 (4.2 x 5.0)	19.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech Plus	4045H	4.5	Saran, France; Torreon, Mexico	3,000	Tier 3 / Stage III A	4, inline	DI, 4	111-129 (149-173) @ 2000-2400	574-645 (424-476) @ 1400	106.5 x 127 (4.2 x 5.0)	17.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech PWX	4045H	4.5	Saran, France; Torreon, Mexico	12,000	Interim Tier 4 / Stage III B	4, inline	DI, 4	63-91 (85-122) @ 2200-2400	333-480 (245-354) @ 1600	106.5 x 127 (4.2 x 5.0)	17.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech PVX	4045H	4.5	Saran, France; Torreon, Mexico	7,000	Interim Tier 4 / Stage III B	4, inline	DI, 4	93-129 kW (125-173) @ 2200-2400	492-645 (363-476) @ 1600	106.5 x 127 (4.2 x 5.0)	16.7:1	AG, GS, IS, OH	✓
John Deere	PowerTech Marine	4045TFM	4.5	Saran, France; Torreon, Mexico	500	Marine Tier 2	4, inline	DI, 2	80-101 (107-135) @ 2400-2600	420-477 (310-352) @ 1600-1800	106.5 x 127 (4.2 x 5.0)	17.6:1	M, GS	✓
John Deere	PowerTech E	6068H	6.8	Saran, France; Torreon, Mexico	4,000	Tier 3 / Stage III A	6, inline	DI, 2	104-149 (139-200) @ 2200-2400	598-785 (441-579) @ 1500	106.5 x 127 (4.2 x 5.0)	19.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech Plus	6068H	6.8	Saran, France; Torreon, Mexico	9,000	Tier 3 / Stage III A	6, inline	DI, 4	134-205 (180-275) @ 2000-2400	690-1025 (509-756) @ 1400	106.5 x 127 (4.2 x 5.0)	17.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech PVX	6068H	6.8	Saran, France; Torreon, Mexico	20,000	Interim Tier 4 / Stage III B	6, inline	DI, 4	104-187 (140-250) @ 2000-2400	549-1025 (405-756) @ 1600	106.5 x 127 (4.2 x 5.0)	17.2:1	AG, GS, IS, OH	✓
John Deere	PowerTech PSX	6068H	6.8	Saran, France; Torreon, Mexico	7,000	Interim Tier 4 / Stage III B	6, inline	DI, 4	168-224 (225-300) @ 2200-2400	1000-1057 (738-780) @ 1600-1700	106.5 x 127 (4.2 x 5.0)	17.2:1	AG, GS, IS, OH	✓
John Deere	PowerTech Marine	6068AFM	6.8	Saran, France; Waterloo, IA	100	Marine Tier 2	6, inline	DI, 4	172-246 (230-330) @ 2300-2600	955-1106 (704-816) @ 1700-1900	106.5 x 127 (4.2 x 5.0)	16.8:1	M	✓
John Deere	PowerTech Marine	6068SFM	6.8	Saran, France; Waterloo, IA	100	Marine Tier 2	6, inline	DI, 4	186-298 (249-400) @ 2400-2800	987-1232 (728-909) @ 1800-2200	106.5 x 127 (4.2 x 5.0)	16.8:1	M	✓
John Deere	PowerTech Plus	6090H	9.0	Waterloo, IA	3,000	Tier 3 / Stage III A	6, inline	DI, 4	168-298 (225-400) @ 2000-2200	984-1554 (726-1146) @ 1500	118 x 136 (4.7 x 5.4)	16.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech PVX	6090H	9.0	Waterloo, IA	9,000	Interim Tier 4 / Stage III B	6, inline	DI, 4	187-224 (250-300) @ 2000-2200	1120-1305 (826-963) @ 1600	118 x 136 (4.6 x 5.4)	16.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech PSX	6090H	9.0	Waterloo, IA	6,000	Interim Tier 4 / Stage III B	6, inline	DI, 4	242-317 (325-425) @ 2000-2200	1444-1685 (1065-1243) @ 1600	118 x 136 (4.6 x 5.4)	16.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech Marine	6090AFM	9.0	Waterloo, IA	50	Marine Tier 2	6, inline	DI, 4	213-317 (285-425) @ 2100-2400	1271-1500 (937-1106) @ 1600-1900	118 x 127 (4.6 x 5.0)	16.0:1	M	✓
John Deere	PowerTech Marine	6090SFM	9.0	Waterloo, IA	50	Marine Tier 2	6, inline	DI, 4	242-410 (325-550) @ 2100-2500	1444-1832 (1065-1351) @ 1600-1900	118 x 127 (4.6 x 5.0)	16.0:1	M	✓
John Deere	PowerTech Plus	6135H	13.5	Waterloo, IA	500	Tier 3 / Stage III A	6, inline	DI, 4	261-448 (350-600) @ 1900-2100	1602-2550 (1182-1881) @ 1400	132 x 165 (5.2 x 6.50)	16.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech PSX	6135H	13.5	Waterloo, IA	1,600	Interim Tier 4 / Stage III B	6, inline	DI, 4	298-448 (400-600) @ 1900-2100	1870-2660 (1379-1962) @ 1500-1600	132 x 165 (5.2 x 6.50)	15.3:1	AG, GS, IS, OH	✓
John Deere	PowerTech Marine	6135AFM	13.5	Waterloo, IA	175	Marine Tier 2	6, inline	DI, 4	272-429 (365-575) @ 1800-2100	1998-2483 (1474-1831) @ 1300-1500	132 x 165 (5.2 x 6.5)	15.3:1	M, GS	✓
John Deere	PowerTech Marine	6135SFM	13.5	Waterloo, IA	150	Marine Tier 2	6, inline	DI, 4	317-559 (425-750) @ 1800-2200	2328-2913 (1717-2149) @ 1300-1700	132 x 165 (5.2 x 6.5)	15.3:1	M, GS	✓

2012

HEAVY-DUTY DIESEL ENGINES



North American Availability & Specifications
37-1120 kW (50-1500 hp)

MAHLE PRODUCTS



LEGEND FOR NORTH AMERICAN HEAVY-DUTY DIESEL ENGINES 2012

- AG: Agriculture
- GS: Generator Set
- IS: Industrial/Stationary
- M: Marine
- NA: Not Available
- OH: Off-Highway Mobile
- SFC: Specific Fuel Consumption
- TB: Truck/Bus/Coach
- VPC: Valves per Cylinder

¹ North American engine production estimates provided by Rhein Associates, Inc.
* Meet Tier 4 Interim regulations using Transitional Program for Equipment Manufacturers (TPEM)

Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2011 Production Volume 1	U.S./EU Emissions Level	Layout	Cylinder Head, VPC	Power, kW (hp) @ rpm	Torque, N•m (lb•ft) @ rpm	Bore x Stroke, mm (in)	Compression Ratio	Application	MAHLE Components
KUBOTA														
Kubota	03M Series	V2403-M-T-E3B	2.4	Japan	30,000	Tier 4 Interim / Stage IIIA	4	NA	44 (59) @ 2700	165.1 (121.8) @ 1800	87 x 102.4 (3.43 x 4.03)	NA	AG, IS, M, OH	✓
Kubota	07 Series	V2607-DI-T-E3B	2.6	Japan	6,000	Tier 4 Interim / Stage IIIA	4	NA	49.2 (66) @ 2700	220.3 (162.5) @ 1600	87 x 110 (3.43 x 4.33)	NA	AG, IS, M, OH	✓
Kubota	07 Series	V3307-DI-T-E3B	3.3	Japan	15,000	Tier 4 Interim / Stage IIIA	4	NA	55.4 (74.3) @ 2600	265 (195.5) @ 1600	94 x 120 (3.7 x 4.72)	NA	AG, IS, M, OH	✓
Kubota	V3 Series	V3600-E3B	3.6	Japan	8,000	Tier 3	4	NA	49.8 (66.8) @ 2600	221 (163) @ 1600	98 x 120 (3.86 x 4.72)	NA	AG, IS, M, OH	✓
Kubota	V3 Series	V3600-T-E3B	3.6	Japan	7,000	Tier 3	4	NA	63.0 (84.5) @ 2600	296 (218.3) @ 1600	98 x 120 (3.86 x 4.72)	NA	AG, IS, M, OH	✓
Kubota	BG	V3600-T-E3BG	3.6	Japan	5,000	Tier 3	4	NA	43.1 (57.8) @ 1800	NA	98 x 120 (3.86 x 4.72)	NA	GS, IS	✓
Kubota	BG	V3800DI-T-E3BG	3.8	Japan	5,000	Tier 3	4	NA	52.8 (70.8) @ 1800	NA	100 x 120 (3.94 x 4.72)	NA	GS, IS	✓
Kubota	V3 Series	V3800DI-T-E3B	3.8	Japan	25,000	Tier 3	4	NA	74.0 (99.2) @ 2600	325 (239.7) @ 1600	100 x 120 (3.94 x 4.72)	NA	AG, IS, M, OH	✓
MTU														
MTU/Mercedes-Benz	Series 900	904	4.2	Mannheim, Germany	500	Stage IIIA / Tier 3	4, inline	DI, 4	75-130 (101-174) @ 2200	400-675 (295-498) @ 1200-1600	102 x 130 (4.02 x 5.12)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 900	924	4.8	Mannheim, Germany	6,000	Stage IIIB / Tier 4 Interim	4, inline	DI, 4	95-150 (127-201) @ 2200	500-800 (370-590) @ 1200-1600	106 x 136 (4.2 x 5.4)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 900	906	6.4	Mannheim, Germany	4,000	Stage IIIA / Tier 3	6, inline	DI, 4	130-205 (174-275) @ 2200	675-1100 (516-811) @ 1200-1600	102 x 130 (4.02 x 5.12)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 900	926	7.2	Mannheim, Germany	16,000	Stage IIIB / Tier 4 Interim	6, inline	DI, 4	175-240 (234-322) @ 2200	1020-1300 (750-960) @ 1200-1600	106 x 136 (4.2 x 5.4)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 460	460	12.8	Mannheim, Germany	100	Stage IIIA / Tier 3	6, inline	DI, 4	220-375 (295-503) @ 1800	1300-2200 (960-1620) @ 1300	128 x 166 (5.0 x 6.5)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 460	460	12.8	Mannheim, Germany	1,000	Stage IIIB / Tier 4 Interim	6, inline	DI, 4	265-375 (355-503) @ 1800	1750-2200 (1290-1620) @ 1300	128 x 166 (5.0 x 6.5)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 500	501	12.0	Mannheim, Germany	100	Stage IIIA / Tier 3	V6	DI, 4	260-315 (349-422) @ 1800	1730-2000 (1257-1475) @ 1300	130 x 150 (5.1 x 5.9)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 500	501	12.0	Mannheim, Germany	900	Stage IIIB / Tier 4 Interim	V6	DI, 4	265-350 (355-469) @ 1800	1850-2300 (1365-1695) @ 1300	130 x 150 (5.1 x 5.9)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 500	502	15.9	Mannheim, Germany	500	Stage IIIA / Tier 3	V8	DI, 4	330-480 (442-644) @ 1800	2150-2800 (1585-2065) @ 1300	130 x 150 (5.1 x 5.9)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 500	502	15.9	Mannheim, Germany	5,500	Stage IIIB / Tier 4 Interim	V8	DI, 4	375-480 (503-644) @ 1800	2400-3000 (1770-2210) @ 1300	130 x 150 (5.1 x 5.9)	18.0:1	AG, IS, OH	✓
MTU/Detroit Diesel	Series 60	S60	12.7	Detroit, MI	200	Stage II / Tier 2	6, inline	DI, 4	224-354 (300-475) @ 1800-2100	3075-3400 (2283-2504) @ 1300 3400 (2504) @ 1800 3550 (2618) @ 1700	130 x 160 (5.1 x 6.3)	16.0:1	AG, IS, M, OH	✓
MTU/Detroit Diesel	Series 60	S60	14.0	Detroit, MI	5,000	Stage IIIA / Tier 3	6, inline	DI, 4	242-615 (325-825) @ 1800-2300	1559-3017 (1150-2225) @ 1350	133 x 168 (5.2 x 6.6)	16.0:1	AG, IS, M, OH	✓
MTU	Series 1600	6R1600	10.5	Friedrichshafen, Germany	2,500	Stage IIIA / Tier 3	6, inline	DI, 4	249-343 (334-460) @ 1500-1800	NA	122 x 150 (4.8 x 5.9)	17.5:1	GS, OH	✓
MTU	Series 1600	8V1600	14.0	Friedrichshafen, Germany	2,500	Stage IIIA / Tier 3	V8	DI, 4	325-448 (436-601) @ 1500-1800	NA	122 x 150 (4.8 x 5.9)	17.5:1	GS, OH	✓
MTU	Series 1600	10V1600	17.5	Friedrichshafen, Germany	1,500	Stage IIIA / Tier 2	V10	DI, 4	400-575 (536-770) @ 1500 510-560 (683-750) @ 1800	NA	122 x 150 (4.8 x 5.9)	17.5:1	GS, OH	✓
MTU	Series 1600	12V1600	21.0	Friedrichshafen, Germany	600	Stage IIIB / Tier 2	V12	DI, 4	524-635 (702-850) @ 1500 560-670 (750-898) @ 1800 660-690 (885 - 925) @ 1900 565-625 (757-838) @ 2100	3075-3400 (2283-2504) @ 1300 3400 (2504) @ 1800 3550 (2618) @ 1700	122 x 150 (4.8 x 5.9)	17.5:1	GS, IS, OH	✓
MTU	Series 2000	12V2000	26.8	Aiken, SC; Friedrichshafen, Germany	400	Tier 4 Interim	V12	DI, 4	783-858 (1050-1151) @ 2100	4640 (3422) @ 1100	135 x 156 (5.3 x 6.1)	16.5:1	IS, OH	✓
MTU	Series 2000	16V2000	26.8	Aiken, SC; Friedrichshafen, Germany	1,200	Tier 4 Interim	V16	DI, 4	970-1163 (1301-1560) @ 2100	5471 (4035) @ 1300	136 x 156 (5.3 x 6.1)	16.5:1	IS, OH	✓
MTU	Series 2000	8V2000	17.9	Friedrichshafen, Germany	900	Tier 2	V8	DI, 4	332-932 (445-1250)	NA	130 x 150 (5.12 x 5.9), 135 x 156 (5.3 x 6.1)	16.0:1	M, OH	✓
MTU	Series 2000	10V2000	22.3	Friedrichshafen, Germany	200	Tier 2	V10	DI, 4	900 (1205) - 1193 (1600)	NA	135 x 156 (5.3 x 6.1)	16.0:1	M, OH	✓
MTU	Series 2000	12V2000	23.9-26.8	Aiken, SC; Friedrichshafen, Germany, Suzhou, China	400	Tier 2	V12	DI, 4	498-1432 (668-1920) @ 1800-2250	3084-3919 (2275-2890) @ 1200-1350	130 x 150 (5.12 x 5.9), 135 x 156 (5.3 x 6.1)	16.0:1	GS, IS, M, OH	✓
MTU	Series 2000	16V2000	31.8-35.7	Aiken, SC; Friedrichshafen, Germany, Suzhou, China	700	Tier 2	V16	DI, 4	664-1939 (898-2600) @ 1500-2450	4459-5287 (3288-3900) @ 1350-1500	130 x 150 (5.12 x 5.9), 135 x 156 (5.3 x 6.1)	16.0:1	GS, IS, M, OH	✓
MTU	Series 4000	8V4000	32.5-38.2	Friedrichshafen, Germany	250	Stage IIIA / Tier 2	V8	DI, 4	700-1200 (940-1609) @ 1800-2000	5470-6570 (4030-4850) @ 1600	165 x 190 (6.5 x 7.5), 170 x 210 (6.7 x 8.3)	13.7:1	IS, M, OH	✓
MTU	Series 4000	12V4000	48.7-57.3	Aiken, SC; Friedrichshafen, Germany	750	Stage IIIA / Tier 2 Stage IIIB / Tier 4	V12	DI, 4	1050-2580 (1410-3460) @ 1800-2100	7610-9437 (5615-6959) @ 1500-1700	165 x 190 (6.5 x 7.5), 170 x 210 (6.7 x 7.5), 170 x 210 (6.7 x 8.3)	13.7:1	GS, IS, M, OH	✓

2012

HEAVY-DUTY DIESEL ENGINES



North American Availability & Specifications 37-1120 kW (50-1500 hp)

MAHLE PRODUCTS

Engine Systems and Components



Filtration and Engine Peripherals



Engineering Services



Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2011 Production Volume 1	U.S./EU Emissions Level	Layout	Cylinder Head, VPC	Power, kW (hp) @ rpm	Torque, N•m (lb•ft) @ rpm	Bore x Stroke, mm (in)	Compression Ratio	Application	MAHLE Components
NAVISTAR														
Navistar	MaxxForce	MaxxForce 7	6.4	Huntsville, AL	63,000	EPA 2010	V8	DI, 4	164-224 (220-300) @ 2600	762-898 (560-660) @ 1400	98.2 x 105 (3.87 x 4.13)	17.5:1	TB	✓
Navistar	MaxxForce	MaxxForce DT	7.6	Huntsville, AL	40,000	EPA 2010	6, inline	DI, 4	160-224 (215-300) @ 2400	760-1166 (560-860) @ 1300	116.5 x 118.9 (4.59 x 4.68)	16.1:1	TB	✓
Navistar	MaxxForce	MaxxForce 9	9.3	Huntsville, AL	1,500	EPA 2010	6, inline	DI, 4	223-246 (300-330) @ 2200	1166-1288 (860-950) @ 1200	116.5 x 146.1 (4.59 x 5.75)	17.5:1	TB	✓
Navistar	MaxxForce	MaxxForce 10	9.3	Huntsville, AL	3,000	EPA 2010	6, inline	DI, 4	230-260 (310-350) @ 2200	1425-1560 (1050-1150) @ 1200	116.5 x 146.1 (4.59 x 5.75)	17.1:1	TB	✓
Navistar	MaxxForce	MaxxForce 11	10.5	Huntsville, AL	9,000	EPA 2010	6, inline	DI, 4	246-291 (330-390) @ 1900-2100	1693-1966 (1250-1450) @ 1000	120 x 155 (4.72 x 6.10)	17:1	TB	✓
Navistar	MaxxForce	MaxxForce 13	12.4	Huntsville, AL	20,000	EPA 2010	6, inline	DI, 4	306-354 (410-475) @ 1900-2100	1964-2302 (1450-1700) @ 1000	126 x 166 (4.96 x 6.54)	17:1	TB	✓
PACCAR														
Paccar	PX	PX-6	6.7	Columbus, MS	5,000	EPA 2010	6, inline	DI, 4	149-242 (200-325)	705-1017 (520-750) @ 1600-1610	107 x 124 (4.21 x 4.88)	17.3:1	TB	✓
Paccar	PX	PX-8	8.3	Columbus, MS	2,000	EPA 2010	6, inline	DI, 4	194-261 (260-350)	895-1356 (660-1000) @ 1300-1400	114 x 135 (4.49 x 5.31)	16.6:1	TB	✓
Paccar	MX	MX265, MX300, MX340	12.9	Columbus, MS	6,000	Euro 4/5	6, inline	DI, 4	265-340 (360-462) @ 1500-1900	1775-2300 (1309-1696) @ 1000-1410	130 x 162 (5.12 x 6.38)	17.7:1	TB	✓
Paccar	MX	MX375	12.9	Columbus, MS	9,000	Euro 4/5	6, inline	DI, 4	375 (510) @ 1500-1900	2500 (1844) @ 1000-1410	130 x 162 (5.12 x 6.38)	16.5:1	TB	✓
VOLVO														
Mack	Maxidyne	MP7	11.0	Hagerstown, MD	1,500	EPA 2010	6, inline	DI, 4	242-302 (325-405) @ 1500-1900	1627-2007 (1200-1480) @ 1200	123 x 152 (4.84 x 5.98)	16:1	TB	✓
Mack	Econodyne	MP7	11.0	Hagerstown, MD	3,200	EPA 2010	6, inline	DI, 4	242-302 (325-405) @ 1500-1800	1708-1979 (1260-1460) @ 1200	123 x 152 (4.84 x 5.98)	16:1	TB	✓
Mack	MaxiCruise	MP7	11.0	Hagerstown, MD	800	EPA 2010	6, inline	DI, 4	257-295 (345-395) @ 1500-1700	1844-2115 (1360-1560) @ 1200	123 x 152 (4.84 x 5.98)	16:1	TB	✓
Mack	MaxiCruise	MP8	13.0	Hagerstown, MD	1,200	EPA 2010	6, inline	DI, 4	309-362 (415-505) @ 1500-1700	2251-2386 (1660-1760) @ 1200	131 x 158 (5.16 x 6.22)	16:1	TB	✓
Mack	Maxidyne	MP8	13.0	Hagerstown, MD	5,500	EPA 2010	6, inline	DI, 4	317-362 (425-505) @ 1500-1900	2088-2305 (1570-1760) @ 1200	131 x 158 (5.16 x 6.22)	16:1	TB	✓
Mack	Econodyne	MP8	13.0	Hagerstown, MD	5,500	EPA 2010	6, inline	DI, 4	317-362 (425-505) @ 1500-1800	2115-2251 (1560-1760) @ 1200	131 x 158 (5.16 x 6.22)	16:1	TB	✓
Mack	MaxiCruise	MP10	16.0	Hagerstown, MD	400	EPA 2010	6, inline	DI, 4	391-451 (525-605) @ 1600-1800	2522-2793 (1860-2060) @ 1200	144 x 165 (5.67 x 6.50)	16:1	TB	✓
Mack	Maxidyne	MP10	16.0	Hagerstown, MD	800	EPA 2010	6, inline	DI, 4	391-414 (525-555) @ 1600-1800	2657-2793 (1960-2060) @ 1200	144 x 165 (5.67 x 6.50)	16:1	TB	✓
Volvo	D11	D11	11.0	Hagerstown, MD	3,000	EPA 2010	6, inline	DI, 4	242-302 (325-405) @ 1500-1900	1627-2007 (1250-1450) @ 1200	123 x 152 (4.84 x 5.98)	16:1	TB	✓
Volvo	D13	D13	13.0	Hagerstown, MD	15,000	EPA 2010	6, inline	DI, 4	250-361 (375-500) @ 1350-1550	1830-2237 (1450-1750) @ 1100	131 x 158 (5.16 x 6.22)	16:1	TB	✓
Volvo	D16	D16	16.0	Hagerstown, MD	2,000	EPA 2010	6, inline	DI, 4	335-447 (500-600) @ 1350-1550	2237-2780 (1850-2050) @ 1200	144 x 165 (5.7 x 6.50)	16:1	TB	✓
YANMAR														
Yanmar	TNV	4TNV84T	2.0	Japan	10,000	Tier 4 / Stage IIIA	4, inline	DI, 4	42.7 (57.3) @ 3000	131 (96) @ 3000	84 x 90 (3.30 x 3.54)	18.9:1	AG, GS, IS, OH	✓
Yanmar	TNV	4TNV98	3.3	Japan	36,000	Tier 4 / Stage IIIA	4, inline	DI, 4	52.1 (69.9) @ 2500	193 (142) @ 2500	98 x 110 (3.85 x 4.33)	18.5:1	AG, GS, IS, OH	✓
Yanmar	TNV	4TNV98T	3.3	Japan	15,000	Tier 4 / Stage IIIA	4, inline	DI, 4	64.1 (86.0) @ 2500	238 (175) @ 2500	98 x 110 (3.85 x 4.33)	18.1:1	AG, GS, IS, OH	✓

LEGEND FOR NORTH AMERICAN HEAVY-DUTY DIESEL ENGINES 2012

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- GS: Generator Set
- IS: Industrial/Stationary
- M: Marine
- NA: Not Available
- OH: Off-Highway Mobile
- SFC: Specific Fuel Consumption
- TB: Truck/Bus/Coach
- VPC: Valves per Cylinder

¹ North American engine production estimates provided by Rhein Associates, Inc.

* Meet Tier 4 Interim regulations using Transitional Program for Equipment Manufacturers (TPEM)