

OFF-HIGHWAY

ENGINEERING

MAHLE

Driven by performance

HEAVY-DUTY DIESEL ENGINES

North American Availability & Specifications

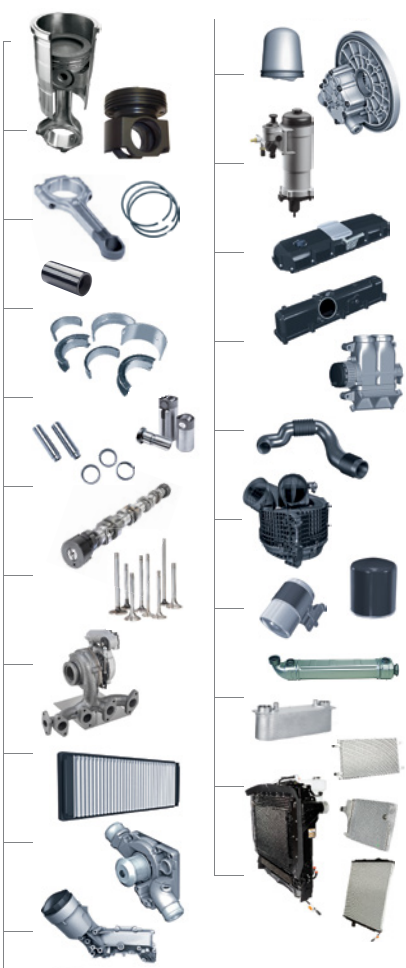
37-1120 kW (50-1500 hp)

MAHLE PRODUCT PORTFOLIO

Brand (Make)	Engine Family	Engine Model	Displacement (L)	Production Location	2013 Production Volume 1	U.S. Emissions Level	Layout	Cylinder Head VPC	Power, kW (hp) @ 1500	Power, kW (hp) @ 1800	Torque, Nm (lb-ft) @ 1500	Stroke, mm (in)	Compression Ratio	Application	MAHLE Components
All General	General	Optimiser	5000	3.5 Franklin, OH	25	NA	4 inline	D	224 (300) @ 1500	276 (375) @ 1800	81 x 150 (3.1 x 5.9)	16.1	GS, M		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	Caterpillar	C	C2.2	2.2 Peterborough, UK, Griffin, GA	300	Ter 4 inline / Stage IIIA / Stage II	4 inline	D	31.4-45.1 (42.5-61.0) @ 2200-3000	130-152 (95.4-110.0) @ 1800	84 x 100 (3.3 x 3.9)	23.3	AG, GS, M		
	Caterpillar	C	C2.2	2.2 Peterborough, UK, Griffin, GA	300	Ter 4 inline / Stage II	4 inline	D	36.4-50 (48.8-67.1) @ 2000	156-208 (121.6-151.4) @ 1800	84 x 90 (3.3 x 3.5)	23.3	AG, GS, M		
	Caterpillar	C	C2.2	2.2 Peterborough, UK, Griffin, GA	10,000	Ter 4 inline	4 inline	D	31.4-45.1 (42.5-61.0) @ 2200-3000	147-208 (106.4-151.4) @ 1800	84 x 100 (3.3 x 3.9)	23.3	AG, GS, M		
	Caterpillar	C	C2.8	3.4 Turin, Italy	1,800	>55 kW - Ter 4 inline / Stage II	4 inline	D	45.0-60.0 (60.0-82.0) @ 2200-3000	240-400 (173.2-290.0) @ 1800	89 x 110 (3.5 x 4.3)	17.0	AG, GS, M		
	Caterpillar	C	C4.4 ACERT	4.4 Peterborough, UK	800	Ter 4 inline / Stage II	4 inline	D	70-124 (95.4-173.2) @ 2200	450-750 (319-555.2) @ 1800	105 x 127 (4.1 x 5.0)	16.5	AG, GS, M		
	Caterpillar	C	C4.4 ACERT	4.4 Peterborough, UK	1,200	Ter 4 inline	4 inline	D	61.5-104 (83.1-173.2) @ 2200	347-750 (250.2-1000) @ 1800	105 x 127 (4.1 x 5.0)	16.5	AG, GS, M		
	Caterpillar	C	C4.4	4.4 Peterborough, UK	1,000	* Available in other regulated or non-regulated areas	4 inline	D	56-85 (75-111.3) @ 2200-2400	307-418 (226-308) @ 1800	105 x 127 (4.1 x 5.0)	16.2	AG, GS, M		
	Caterpillar	C	C7.1 ACERT	7.0 Peterborough, UK	400	Ter 4 inline / Stage II	4 inline	D	116-225 (156-302) @ 2200	756-1274 (556-939.7) @ 1800	150 x 131 (5.9 x 5.1)	16.5	AG, GS, M		
General	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
	General	Optimiser	6000	6.7 Franklin, OH	2,000	NA	VB	D	119-187 (163-250) @ 1500	330-748 (450-1000) @ 1800	130 x 152 (5.1 x 6.0)	20.2	GS, M, TB		
General	General	Opt													

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MAHLE PRODUCT PORTFOLIO



Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2013 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	3200	3.2	Franklin, OH	25	NA	6, inline	DI	224 (300) @ 4300	678 (500) @ 2200	85 x 94 (3.35 x 3.70)	16:1	GS, MI	✓
General Engine Products	Optimizer	6500	6.5	Franklin, OH	2,000	NA	V8	IDI, 2	119-187 (160-250) @ 3000-3400	393-746 (290-550) @ 1700-2000	103 x 97 (4.06 x 3.82)	20.2:1	GS, M, MI, TB	✓
Caterpillar														
Cat	C	C2.2	2.2	Peterborough, UK; Griffin, GA	300	Tier 4 Final / Stage IIIA or Stage IIIB	4, inline	IDI	31.4-45.5 (42.1-61) @ 2200-3000	130-192 (95.9-141.6) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, IS, OH	✓
Cat	C	C2.2	2.2	Peterborough, UK; Griffin, GA	300	Tier 4 Final / Stage IIIB	4, inline	DI	36.4-50 (48.8-67.1) @ 2800	165-208 (121.6-153.4) @ 1800	84 x 90 (3.3 x 3.5)	23.3:1	AG, IS, OH	✓
Cat	C	C2.2	2.2	Peterborough, UK; Griffin, GA	10,000	* Tier 4	4, inline	IDI	31.0-49.3 (41.6-66.1) @ 2200-3000	142.7-208.4 (105.3-153.7) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, IS, OH	✓
Cat	C	C3.4B	3.4	Turin, Italy	1,800	< 56 kW = Tier 4 Final / Stage IIIB >56 kW = Tier 4 Final / EU Stage IV	4, inline	DI	45-90 (60.3-120.7) @ 2200-2500	243-490 (179.2-361.4) @ 1400-1600	99 x 110 (3.9 x 4.3)	17.0:1	AG, IS, OH	✓
Cat	C	C4.4 ACERT	4.4	Peterborough, UK	800	Tier 4 Final / Stage IV	4, inline	DI	70-129.4 (93.9-173.5) @ 2200	450-750 (331.9-553.2) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Cat	C	C4.4 ACERT	4.4	Peterborough, UK	1,200	* Tier 4	4, inline	DI	61.5-129.4 (82.5-173.5) @ 2200	347-750 (256-553.2) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Cat	C	C4.4	4.4	Peterborough, UK	1,000	* Available in other regulated or non-regulated areas	4, inline	DI	56-83 (75-111.3) @ 2200-2400	307-418 (226-308) @ 1400	105 x 127 (4.1 x 5.0)	18.2:1	AG, IS, OH	✓
Cat	C	C7.1 ACERT	7.0	Peterborough, UK	400	Tier 4 Final / Stage IV	6, inline	DI	116-225 (156-302) @ 2200	755-1274 (556.9-939.7) @ 1400	105 x 135 (4.1 x 5.3)	16.5:1	AG, IS, OH	✓
Cat	C	C7.1 ACERT	7.0	Wuxi, China	6,500	* Tier 4	6, inline	DI	116-205 (156-275) @ 2200	706-1050 (520.7-774.4) @ 1400	105 x 135 (4.1 x 5.3)	16.5:1	AG, IS, OH	✓
Cat	C	C7.1	7.0	Wuxi, China	800	* Available in other regulated or non-regulated areas	6, inline	DI	112-162 (150-220) @ 1950-2200	672-900 (495-663) @ 1200-1400	105 x 135 (4.1 x 5.3)	18.2:1	AG, IS, OH	✓
Cat	C	C7 ACERT	7.2	Greenville, SC	26,000	* Available in other regulated or non-regulated areas	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	✓
Cat	C	C9.3 ACERT	9.3	Seguin, TX	500	Tier 4 Final / Stage IV	6, inline	DI	224-298 (300-400) @ 1800-2200	753.2-878.4 (1010-1178) @ 1400	115 x 149 (4.53 x 5.87)	17.08:1	AG, IS, OH	✓
Cat	C	C9.3 ACERT	9.3	Seguin, TX	1,500	* Tier 4	6, inline	DI	224-298 (300-400) @ 1800-2200	753.2-878.4 (1010-1178) @ 1400	115 x 149 (4.53 x 5.87)	17.08:1	AG, IS, OH	✓
Cat	C	C9 ACERT	8.8	Seguin, TX	14,000	* Available in other regulated or non-regulated areas	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	✓
Cat	C	C11 ACERT	11.1	Seguin, TX	200	* Available in other regulated or non-regulated areas	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	✓
Cat	C	C13 ACERT	12.5	Seguin, TX	1,000	Tier 4 Final / Stage IV	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	✓
Cat	C	C13 ACERT	12.5	Seguin, TX	8,500	* Tier 4	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	✓
Cat	C	C15 ACERT	15.2	Seguin, TX	20,000	Tier 4 Final / Stage IV	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	✓
Cat	C	C15 ACERT	15.2	Seguin, TX	1,000	* Tier 4	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	✓
Cat	C	C18 ACERT	18.1	Seguin, TX	2,000	<=559 kW =Tier 4 Final / Stage IV > 559 kW= Tier 4 Final	6, inline	DI	429-597 (575-800) @ 1800-2000	1512-3656 (2027-2697) @ 1400	145 x 183 (5.71 x 7.2)	17:1	AG, IS, OH	✓
Cat	C	C18 ACERT	18.1	Seguin, TX	6,000	* Tier 4	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	✓
Cat	C	C27 ACERT	27.0	Griffin, GA	250	Tier 4 Final	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	✓
Cat	C	C27 ACERT	27.0	Griffin, GA	2,000	* Tier 4	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	✓
Cat	C	C32 ACERT	32.1	Griffin, GA	200	Tier 4 Final	V12	DI	746-895 (1000-1200) @ 1800	2363-2987 (3169-4005) @ 1400	145 x 162 (5.71 x 6.38)	15:1	AG, IS, OH	✓
Cat	C	C32 ACERT	32.1	Griffin, GA	2,900	* Tier 4	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	✓
Cat	3500	3508B	34.5	Lafayette, IN	120	* Available in other regulated or non-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	✓
Cat	3500	3512	51.8	Lafayette, IN	500	* Available in other regulated or non-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	✓
Cat	3500	3512B	51.8	Lafayette, IN	1,200	* Available in other regulated or non-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	✓
Cat	3500	3512C	51.8	Lafayette, IN	500	* Available in other regulated or non-regulated areas	V12	DI	1120 (1500) @ 1800	Up to 7321 (5400) @ 1400	170 x 190 (6.7 x 7.5)	14.7:1	AG, IS, OH	✓
Cat	3500	3516	69.0	Lafayette, IN	300	* Available in other regulated or non-regulated areas	V16	DI	1011-1492 (1355-2000) @ 1200-1800	Up to 6763 (4988) @ 1400	170 x 190 (6.7 x 7.5)	13.0:1	AG, IS, OH	✓
Cat	3500	3516B	69.0	Lafayette, IN	2,000	* Available in other regulated or non-regulated areas	V16	DI	1492-1640 (2000-2200) @ 1800	Up to 9536 (7034) @ 1400	170 x 190 (6.7 x 7.5)	14.0:1	AG, IS, OH	✓
Perkins	400	404F-E22T	2.2	UK; Griffin, GA	500	Tier 4 Final / Stage IIIB	4, inline	DI	36.4 (48.8) @ 2800	165 (121.6) @ 1800	84 x 90 (3.3 x 3.5)	23.3:1	AG, IS, OH	✓
Perkins	400	404F-E22TA	2.2	UK; Griffin, GA	200	Tier 4 Final / Stage IIIB	4, inline	DI	50 (67.1) @ 1800	208 (153.4) @ 1800	84 x 90 (3.3 x 3.5)	23.3:1	AG, IS, OH	✓
Perkins	400	404F-22	2.2	UK; Griffin, GA	500	Tier 4 Final / Stage IIIA	4, inline	IDI	31.4-36.4 (42.1-48.8) @ 2600-3000	130-143 (95.9-105.5) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, GS, IS, OH	✓
Perkins	400	404F-22T	2.2	UK; Griffin, GA	1,000	Tier 4 Final / Stage IIIB	4, inline	IDI	36.4-45.5 (48.8-61) @ 2600-3000	154-192 (113.6-141.6) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, GS, IS, OH	✓
Perkins	400	404D-22T	2.2	UK; Griffin, GA	40	* Tier 4	4, inline	IDI	36.3-45.5 (48.7-61) @ 2600-3000	154-189 (113.6-139.4) @ 1800	84 x 100 (3.3 x 3.9)	23.3:1	AG, GS, IS, OH	✓
Perkins	400	404D-22TA	2.2	UK; Griffin, GA	200	* Tier 4	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, GS, IS, OH	✓
Perkins	850	854F-E34T	3.4	Turin, Italy	6,000	Tier 4 Final / Stage IIIB	4, inline	DI	45-55.4 (60.3-74.3) @ 2200-2500	243-318 (179.2-234.5) @ 1400-1600	99 x 110 (3.9 x 4.3)	17.0:1	AG, GS, IS, OH	✓
Perkins	850	854F-E34TA	3.4	Turin, Italy	2,000	Tier 4 Final / Stage IV	4, inline	DI	63-90 (84-121) @ 2200-2500	354-490 (261-361.4) @ 1400	99 x 110 (3.9 x 4.3)	17.0:1	AG, GS, IS, OH	✓
Perkins	850	854E-E34TA	3.4	Turin, Italy	1,000	* Tier 4	4, inline	DI	63-86.0 (84.5-115.3) @ 2200-2500	344-450 (254-331.9) @ 1400-1600	99 x 110 (3.9 x 4.3)	17.0:1	AG, GS, IS, OH	✓
Perkins	1200	1204F-E44TA	4.4	Peterborough, UK	2,000	Tier 4 Final / Stage IV	4, inline	DI	70-110.1 (93.9-147.6) @ 2200	450-560 (331.9-413) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Perkins	1200	1204F-E44TTA	4.4	Peterborough, UK	4,000	Tier 4 Final / Stage IV	4, inline	DI	105-129.4 (140.8-173.5) @ 2200	630-750 (464.6-553.1) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Perkins	1200	1204E-E44TA	4.4	Peterborough, UK	16,000	* Tier 4	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	20,000	* Tier 4	4, inline	DI	105.1-129.4 (141-173.5) @ 2200	650-750 (479.4-553.2) @ 1400	105 x 127 (4.1 x 5.0)	16.5:1	AG, IS, OH	✓
Perkins	1100	1104D-E44T	4.4	Peterborough, UK	3,700	* Available in other regulated or non-regulated areas	4, inline	DI	74.5 (100) @ 2200	420 (310) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, IS, OH	✓

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LEGEND FOR NORTH AMERICAN HEAVY-DUTY DIESEL ENGINES 2015

AG: Agriculture
GS: Generator Set
IS: Industrial/Stationary
M: Marine

MI: Military
NA: Not Available
OH: Off-Highway Mobile
SFC: Specific Fuel Consumption

TB: Truck/Bus/Coach
VPC: Valves per Cylinder
* Meet Tier 4 Interim regulations using Transitional Program for Equipment Manufacturers (TPEM). Available in other regulated areas.

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

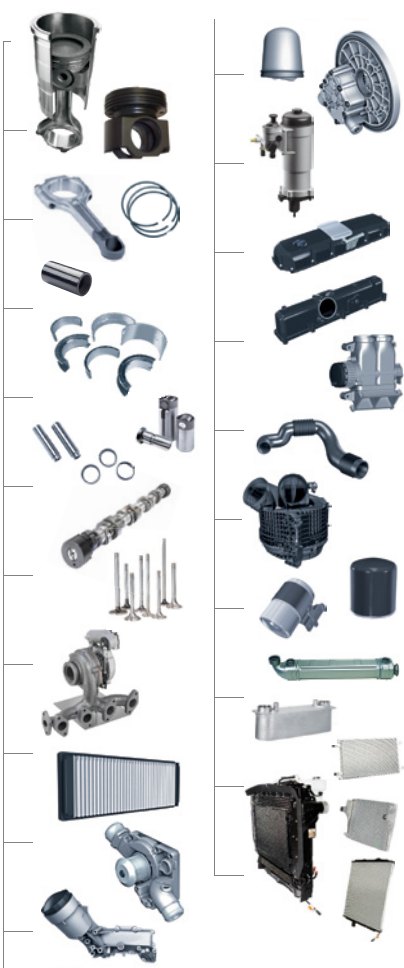
2015

HEAVY-DUTY DIESEL ENGINES

North American Availability & Specifications

37-1120 kW (50-1500 hp)

MAHLE PRODUCT PORTFOLIO



Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2013 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	600	* Available in other regulated or non-regulated areas	4, inline	DI	74.5-106.0 (100-142.0) @ 2200	441-556 (325-410) @ 1400	105 x 127 (4.1 x 5.0)	16.2:1	AG, GS, IS, OH	✓
Perkins	1100	1104C-44	4.4	Peterborough, UK	1,000	* Available in other regulated or non-regulated areas	4, inline	DI	64 (85.8) @ 2400	308 (227) @ 1200	105 x 127 (4.1 x 5.0)	19.3:1	AG, GS, IS, OH	✓
Perkins	1100	1104C-44T	4.4	Peterborough, UK	1,000	* Available in other regulated or non-regulated areas	4, inline	DI	74.5 (99.9) @ 2300	415 (306) @ 1350	105 x 127 (4.1 x 5.0)	18.2:1	AG, GS, IS, OH	✓
Perkins	1100	1104C-44TA	4.4	Peterborough, UK	500	* Available in other regulated or non-regulated areas	4, inline	DI	97 (130.1) @ 2200	500 (369) @ 1400	105 x 127 (4.1 x 5.0)	18.2:1	AG, GS, IS, OH	✓
Perkins	1100	1104D-44T	4.4	Peterborough, UK	18,000	* Available in other regulated or non-regulated areas	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, GS, IS, OH	✓
Perkins	1100	1104D-44TA	4.4	Peterborough, UK	6,000	* Available in other regulated or non-regulated areas	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, GS, IS, OH	✓
Perkins	1200	1206F-E70TA	6.6	Peterborough, UK	1,200	Tier 4 Final / Stage IV	6, inline	DI	116-225 (156-302) @ 2200	755-1274 (557-940) @ 1400	105 x 135 (4.1 x 5.3)	16.5:1	AG, IS, OH	✓
Perkins	1200	1206E-E70TTA	7.0	Peterborough, UK	5,000	* Tier 4	6, inline	DI	140-225 (187.7-301.8) @ 2200	890-1257 (656.4-927.1) @ 1400	105 x 135 (4.1 x 5.3)	16.5:1	AG, IS, OH	✓
Perkins	1100	1106D-E70TA	7.0	Wuxi, China	300	* Available in other regulated or non-regulated areas	6, inline	DI	89-205 (119-275) @ 1800-2500	706-1050 (520.7-774.4) @ 1400	105 x 135 (4.1 x 5.3)	18.2:1	AG, IS, OH	✓
Perkins	1100	1106D-E70TA	7.0	Peterborough, UK	1,000	* Tier 4	6, inline	DI	116.5-205 (156.2-274.9) @ 2200-2500	706-1050 (520.7-774.4) @ 1400	105 x 135 (4.1 x 5.3)	16.8:1	AG, IS, OH	✓
Perkins	1100	1106C-70TA	7.0	Wuxi, China	500	* Available in other regulated or non-regulated areas	6, inline	DI	112-162 (150-217) @ 1200-1400	687-900 (506-663) @ 1200-1400	105 x 135 (4.1 x 5.3)	18.2:1	AG, IS, OH	✓
Perkins	1100	1106D-70TA	7.0	Wuxi, China	150	* Available in other regulated or non-regulated areas	6, inline	DI	112-129 (150-172) @ 1800-2200	721-750 (531-552) @ 1000-1300	105 x 135 (4.1 x 5.3)	18.2:1	AG, IS, OH	✓
Cummins														
Cummins	F	QS F2.8	2.8	Beijing, China	750	Tier 4 Final	4, inline	DI, 4	37-55 (49-74) @ 2200-2500	190-300 (140-221) @ 1600	94 x 100 (3.7 x 3.94)	NA	AG, GS, IS, OH	✓
Cummins	F	QS F3.8	3.8	Beijing, China	250	Tier 4 Final	4, inline	DI, 4	75-99 (100-132) @ 2000-2500	415-488 (306-360) @ 1600	102 x 115 (4.02 x 4.53)	NA	AG, GS, IS, OH	✓
Cummins	B	QS B4.5	4.5	Rocky Mount, NC	1,600	Tier 4 Final	4, inline	DI, 4	90-130 (121-173) @ 1700-2500	470-705 (347-520) @ 1500	107 x 124 (4.21 x 4.88)	NA	AG, GS, IS, OH	✓
Cummins	V	IS V5.0	5.0	Columbus, IN	5,000	EPA 2014	V8	DI, 4	149-205 (200-275) @ 3200	705-759 (520-560) @ 1600	94 x 90 (3.7 x 3.54)	NA	TB	✓
Cummins	B	QS B6.7	6.7	Rocky Mount, NC	25,000	Tier 4 Final	6, inline	DI, 4	109-231 (146-310) @ 1600-2500	672-1044 (496-770) @ 1500	107 x 124 (4.21 x 4.88)	NA	AG, GS, IS, M, OH	✓
Cummins	B	IS B6.7	6.7	Rocky Mount, NC	205,000	EPA 2014	6, inline	DI, 4	149-242 (200-325) @ 2600	705-1017 (520-750) @ 1600-1800	107 x 124 (4.21 x 4.88)	NA	TB	✓
Cummins	L	QS L9	8.9	Rocky Mount, NC	16,000	Tier 4 Final	6, inline	DI, 4	186-298 (250-400) @ 1600-2200	1085-1627 (800-1200) @ 1400-1500	114 x 145 (4.49 x 5.69)	NA	AG, GS, IS, OH	✓
Cummins	L	IS L9	8.9	Rocky Mount, NC	45,000	EPA 2014	6, inline	DI, 4	194-283 (260-380) @ 2100-2200	976-1695 (720-1250) @ 1300-1400	114 x 145 (4.49 x 5.69)	NA	TB	✓
Cummins	G	QS G12	11.8	Beijing, China	400	Tier 4 Final	6, inline	DI, 3	250-383 (335-513) @ 1700-2100	1695-2299 (1250-1696) @ 1400	132 x 144 (5.2 x 5.67)	NA	AG, GS, IS, OH	✓
Cummins	X	IS X12	11.9	Jamestown, NY	15,000	EPA 2014	6, inline	DI, 4	231-317 (310-425) @ 2100	1559-2237 (1150-1650) @ 1100	130 x 150 (5.11 x 5.91)	NA	TB	✓
Cummins	X	QS X15	14.9	Jamestown, NY	500	Tier 4 Final	6, inline	DI, 4	336-503 (450-675) @ 1800-2100	2237-2778 (1650-2050) @ 1400	137 x 169 (5.39 x 6.65)	NA	AG, GS, IS, OH	✓
Cummins	X	IS X15	14.9	Jamestown, NY	88,000	EPA 2014	6, inline	DI, 4	298-447 (400-600) @ 1800-2200	1966-2778 (1450-2050) @ 1000-1200	137 x 169 (5.39 x 6.65)	NA	TB	✓
Cummins	K	QS K19	19.0	Seymour, IN	4,000	Tier 4 Final*	6, inline	DI, 4	377-597 (506-800) @ 1800-2100	2407-3084 (1775-2275) @ 1300-1700	159 x 159 (6.25 x 6.25)	NA	AG, GS, IS, M, OH	✓
Cummins	K	QS K19-R	19.0	Seymour, IN	200	Tier 4 Final	6, inline	DI, 4	567 (760) @ 1800-2000	3084 (2275) @ 1500	159 x 159 (6.25 x 6.25)	NA	OH	✓
Cummins	K	QS K23	23.0	Oyama, Japan	4,000	Tier 4 Final*	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	GS, IS, M, OH	✓
Cummins	T	QS T30	30.5	Seymour, IN	1,200	Tier 4 Final*	V12	DI, 4	746-1119 (1000-1500) @ 1800-2100	3806-5951 (2807-4389) @ 1300-1400	140 x 165 (5.51 x 6.5)	NA	GS, IS, M, OH	✓
Cummins	K	QS K38	37.7	Daventry, UK	120	Tier 4 Final*	V12	DI, 4	810-1193 (1086-1600) @ 1800-1900	4869-6242 (3591-4604) @ 1350-1500	159 x 159 (6.25 x 6.25)	NA	GS, IS, M, OH	✓
Cummins	K	QS K50	50.3	Daventry, UK	1,120	Tier 4 Final	V16	DI, 4	1119-1864 (1500-2500) @ 1800-1900	6570-9599 (4846-7080) @ 1300-1500	159 x 159 (6.26 x 6.26)	NA	GS, IS, M, OH	✓
Cummins	K	QS K60	60.0	Daventry, UK	1,050	Tier 4 Final	V16	DI, 4	1398-2237 (1875-3000) @ 1800-1900	8364-11440 (6169-8438) @ 1500	159 x 190 (6.26 x 7.48)	NA	GS, IS, M, OH	✓
Daimler														
Detroit Diesel	DD Platform	DD13	12.8	Detroit, MI; Mannheim, Germany	34,000	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	33,000	EPA 2010	6, inline	DI, 4	340-377 (455-505) @ 1800	2100-2373 (1550-1750) @ 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	5,000	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	TD 2009 L4	-	2.3	Germany	500	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	GS, IS, OH	✓
Deutz	TCD 2.9 L4	-	2.9	Germany	12,000	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	4,700	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	TCD2012L4	-	4.0	Germany	300	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, GS, IS, OH	✓
Deutz	TCD 7.8	-	7.8	Germany	9,000	Tier 4 Final / Stage III B	6 inline	DI, 2	190-291 (255-390) @ 2100-2200	1556 (1148) @ 1400-1600	110 x 136 (4.3 x 5.4)	18:1	AG, GS, IS, OH, TB	✓
FPT Industrial														
FPT Industrial	F1 Series	F23	2.3	Foggia, Italy	42,000	Euro 5	4, inline	DI, 4	78-107 (104-143) @ 3600-3900	270-350 (199-258) @1500-1800	88 x 94 (3.46 x 3.70)	16.2:1	TB	✓
FPT Industrial	F1 Series	F30	3	Foggia, Italy	49,000	EPA 2010 / ULEV 340 / Euro VI	4, inline	DI, 4	81-129 (109-173) @ 3500	260-430 (192-317) @1250-1600	95.8 x 104 (3.77 x 4.09)	17.5:1	TB	✓
FPT Industrial	F5 Series	F32	3.2	Torino, Italy	21,000	Tier 3 / Tier 4 A	4, inline	DI, 2	46.5-56.5 (62-76) @ 1800	NA	99 x 104 (3.90 x 4.09)	17:1	GS	✓
FPT Industrial	F5 Series	F34	3.4	Torino, Italy	6,500	Tier 4 Interim / Stage III B	4, inline	DI, 2	61-86 (82-115) @ 2000-2500	334-460 (246-339) @ 1400-1700	99 x 110 (3.90 x 4.33)	17:1	AG, IS, OH	✓
FPT Industrial	F5 Series	F34	3.4	Torino, Italy	3,000	Tier 4 Final / Stage III B	4, inline	DI, 2	43-55 (58-74) @ 1800-2500	243-318 (179-234) @ 1400-1600	99 x 110 (3.90 x 4.33)	17:1	AG, IS, OH	✓
FPT Industrial	F5 Series	F34	3.4	Torino, Italy	1,100	Tier 4 Final / Stage IV	4, inline	DI, 4	63-92 (84-123) @ 2500	351-500 (259-369) @ 1500	99 x 110 (3.90 x 4.33)	17:1	AG, OH	✓

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LEGEND FOR NORTH AMERICAN HEAVY-DUTY DIESEL ENGINES 2015

AG: Agriculture
GS: Generator Set
IS: Industrial/Stationary
M: Marine

MI: Military
NA: Not Available
OH: Off-Highway Mobile
SFC: Specific Fuel Consumption

TB: Truck/Bus/Coach
VPC: Valves per Cylinder
* Meet Tier 4 Interim regulations using Transitional Program for Equipment Manufacturers (TPEM). Available in other regulated areas.

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

MAHLE PRODUCT PORTFOLIO



Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2013 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 (Continued)														
FPT Industrial	NEF Series	N45	4.5	Torino, Italy	80,000	Tier 3 / Tier 4 A	4, inline	DI, 2/4	56-112 (75-150) @ 1800	NA	104 x 132 (4.09 x 5.20)	17.5:1	GS	✓
FPT Industrial	NEF Series	N45	4.5	Torino, Italy	11,000	Euro VI	4, inline	DI, 4	118-152 (158-204) @ 2500	580-750 (428-553) @ 1250-1400	104 x 132 (4.09 x 5.20)	17:1	TB	✓
FPT Industrial	NEF Series	N45	4.5	Torino, Italy	18,000	Tier 4 Interim / Stage III B Tier 4 Final / Stage IV	4, inline	DI, 4	66-129 (89-173) @ 2000-2200	375-726 (277-535) @ 1200-1600	104 x 132 (4.09 x 5.20)	17:1	AG, IS, OH	✓
FPT Industrial	NEF Series	N67	6.7	Torino, Italy	10,000	Tier 3	6, inline	DI, 2/4	141-200 (189-268) @ 1800	NA	104 x 132 (4.09 x 5.20)	17.5:1	GS	✓
FPT Industrial	NEF Series	N67	6.7	Torino, Italy	14,000	Euro VI	6, inline	DI, 4	162-235 (217-315) @ 2500	800-1100 (590-811) @ 1250-1400	104 x 132 (4.09 x 5.20)	17:1	TB	✓
FPT Industrial	NEF Series	N67	6.7	Torino, Italy	11,000	Tier 4 Interim / Stage III B Tier 4 Final / Stage IV Marine Tier 3	6, inline	DI, 4	104-419 (139-562) @ 2000-2200	632-1518 (466-1120) @ 1300-2000	104 x 132 (4.09 x 5.20)	17:1	AG, IS, M, OH	✓
FPT Industrial	Cursor Series	Cursor 9	8.7	Bourbon-Lancy, France	4,500	Tier 3	6, inline	DI, 4	280 (375) @ 1800	NA	117 x 135 (4.60 x 5.31)	16.5:1	GS	✓
FPT Industrial	Cursor Series	Cursor 9	8.7	Bourbon-Lancy, France	1,500	Euro VI	6, inline	DI, 4	228-294 (306-394) @ 2200	1300-1700 (959-1254) @ 1200	117 x 135 (4.60 x 5.31)	16:1	TB	✓
FPT Industrial	Cursor Series	Cursor 9	8.7	Bourbon-Lancy, France	750	Tier 4 Interim / Stage III B Tier 4 Final / Stage IV	6, inline	DI, 4	201-330 (269-443) @ 2000-2150	1157-1850 (853-1364) @ 1100-1600	117 x 135 (4.60 x 5.31)	16:1	AG, OH	✓
FPT Industrial	Cursor Series	Cursor 10	10.3	Bourbon-Lancy, France	4,200	Tier 3	6, inline	DI, 4	317 (425) @ 1800	NA	125 x 140 (4.92 x 5.51)	16.5:1	GS	✓
FPT Industrial	Cursor Series	Cursor 11	11.1	Bourbon-Lancy, France	4,000	Euro VI	6, inline	DI, 4	309-353 (414-473) @ 1900	1900-2250 (1401-1660) @ 1050	128 x 144 (5.04 x 5.67)	16.5:1	TB	✓
FPT Industrial	Cursor Series	Cursor 11	11.1	Bourbon-Lancy, France	200	Tier 4 Final / Stage IV	6, inline	DI, 4	330-380 (443-510) @ 2000-2100	2000-2082 (1475-1536) @ 1500	128 x 144 (5.04 x 5.67)	16.5:1	AG	✓
FPT Industrial	Cursor Series	Cursor 13	12.9	Bourbon-Lancy, France	3,000	Tier 3	6, inline	DI, 4	371 (498) @ 1800	NA	135 x 150 (5.31 x 5.91)	16.5:1	GS	✓
FPT Industrial	Cursor Series	Cursor 13	12.9	Bourbon-Lancy, France	3,000	Euro VI	6, inline	DI, 4	302-412 (405-553) @ 1900	2100-2500 (1549-1844) @ 1000	135 x 150 (5.31 x 5.91)	16.5:1	TB	✓
FPT Industrial	Cursor Series	Cursor 13	12.9	Bourbon-Lancy, France	1,100	Tier 4 Interim / Stage III B Tier 4 Final / Stage IV	6, inline	DI, 4	316-515 (424-691) @ 1900-2100	1924-2885 (1419-2128) @ 1400	135 x 150 (5.31 x 5.91)	16.5:1	AG, OH	✓
Ford														
Ford	Vulcan	Powerstroke 6.7L	6.7	Chihuahua, Mexico	174,000	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	5,000	EPA 2010	V8	DI, 4	194 (260) @ 3100	705 (520) @ 1800	103 x 99 (4.06 x 3.90)	17.5:1	TB	✓
GM/Isuzu	Duramax	6.6L	6.6	Moraine, OH	98,000	EPA 2010	V8	DI, 4	296 (397) @ 3000	1037 (765) @ 1600	103 x 99 (4.06 x 3.90)	16.0:1	TB	✓
GM/Isuzu	Isuzu	7800	7.8	Tochigi, Japan	44,000	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 EWX	3029H	2.9	Saran, France	51,000	Final Tier 4 / Stage III B	3, inline	DI, 2	36-55 (48-74) @ 2200-2400	190-304 (140-224) @ 1600	106 x 110 (4.2 x 4.3)	16.9	AG, GS, IS, OH	✓
John Deere	PowerTech M	4045T/H	4.5	Saran, France; Torreon, Mexico	20,000	Tier 3 / Stage III A	4, inline	DI, 2	56-74 (75-99) @ 2200-2400	275-383 (203-282) @ 1600-1700	106 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	30,000	Interim Tier 4	4, inline	DI, 2	55 (74) @ 1800	265 (195) @ 1700	106 x 127 (4.17 x 5.00)	19.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech EWX	4045H	4.5	Saran, France; Torreon, Mexico	2,000	Final Tier 4 / Stage III B	4, inline	DI, 4	55 (74) @ 2200-2400	292-304 (215-224) @ 1600	106 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	4,000	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	4,000	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 PWL	4045H	4.5	Saran, France; Torreon, Mexico	1,000	Final Tier 4 / Stage IV	4, inline	DI, 4	63-104 (85-140) @ 2200-2400	333-540 (246-398) @ 1600	106 x 127 (4.2 x 5.0)	16.1:1	AG, GS, IS, OH	✓
John Deere	PowerTech PSS	4045H	4.5	Saran, France; Torreon, Mexico	1,000	Final Tier 4 / Stage IV	4, inline	DI, 4	93-129 (125-173) @ 2200-2400	494-667 (364-492) @ 1600	106 x 127 (4.2 x 5.0)	16.1:1	AG, GS, IS, OH	✓
John Deere	PowerTech PWX	4045H	4.5	Saran, France; Torreon, Mexico	9,000	Interim Tier 4 / Stage III B	4, inline	DI, 4	63-91 (85-122) @ 2200-2400	333-480 (245-354) @ 1600	106 x 127 (4.2 x 5.0)	16.1:1	AG, GS, IS, OH	✓
John Deere	PowerTech PVX	4045H	4.5	Saran, France; Torreon, Mexico	9,000	Interim Tier 4 / Stage III B	4, inline	DI, 4	93-129 kW (125-173) @ 2200-2400	492-645 (363-476) @ 1600	106 x 127 (4.2 x 5.0)	16.5:1	AG, GS, IS, OH	✓
John Deere	PowerTech Marine	4045AFM	4.5	Torreon, Mexico	200	Marine Tier 3	4, inline	DI, 2	119-168 (160-225) @ 2300-2600	494-617 (364-455) @ 2300-2600	107 x 127 (4.21 x 5.0)	16.7:1	M	✓
John Deere	PowerTech Marine	4045TFM	4.5	Torreon, Mexico	250	Marine Tier 3	4, inline	DI, 2	75-93 (100-125) @ 2400-2500	297-356 (219-263) @ 2400-2500	106 x 127 (4.17 x 5.0)	19.0:1	M	✓
John Deere	PowerTech Marine	4045AFM	4.5	Torreon, Mexico	3,000	Marine Tier 3	4, inline	DI, 2	89-110 (119-148) @ 1500, 1800	567-583 (418-430) @ 1500-1800	107 x 127 (4.21 x 5.0)	16.7:1	GS, M	✓
John Deere	PowerTech Marine	4045TFM	4.5	Torreon, Mexico	2,000	Marine Tier 3	4, inline	DI, 2	61-74 (82-99) @ 1500, 1800	885-883 (653-651) @ 1500-1800	106 x 127 (4.17 x 5.0)	16:1	GS, M	✓
John Deere	PowerTech E	6068H	6.8	Saran, France; Torreon, Mexico	7,000	Tier 3 / Stage III A	6, inline	DI, 2	104-149 (139-200) @ 2200-2400	598-785 (441-579) @ 1500	106 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	6,000	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 PVS	6068H	6.8	Saran, France; Torreon, Mexico	5,000	Final Tier 4 / Stage IV	6, inline	DI, 4	104-187 (140-250) @ 2000-2400	552-1000 (407-738) @ 1600	106 x 127 (4.17 x 5.0)	17.2:1	AG, GS, IS, OH	✓
John Deere	PowerTech PSS	6068H	6.8	Saran, France; Torreon, Mexico	3,000	Final Tier 4 / Stage IV	6, inline	DI, 4	185-224 (248-300) @ 2200-2400	1000-1057 (738-780) @ 1600-1700	106 x 127 (4.2 x 5.0)	16.7:1	AG, GS, IS, OH	✓
John Deere	PowerTech PVX	6068H	6.8	Saran, France; Torreon, Mexico	10,000	Interim Tier 4 / Stage III B	6, inline	DI, 4	104-187 (140-250) @ 2000-2400	549-1025 (405-756) @ 1600	106 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	6,000	Interim Tier 4 / Stage III B	6, inline	DI, 4	168-187 (225-250) @ 2200	1000-1025 (738-756) @ 1600	106 x 127 (4.2 x 5.0)	17.2:1	AG, GS, IS, OH	✓
John Deere	PowerTech Marine	6068AFM	6.8	Torreon, Mexico	300	Marine Tier 3	6, inline	DI, 4	172-246 (230-330) @ 2300-2600	713-905 (526-667) @ 2300-2600	107 x 127 (4.21 x 5.0)	16.7:1	M	✓
John Deere	PowerTech Marine	6068SFM	6.8	Torreon, Mexico	200	Marine Tier 3	6, inline	DI, 4	186-298 (249-400) @ 2400-2800	741-1017 (547-750) @ 2400-2800	106 x 127 (4.17 x 5.0)	16.3:1	M	✓
John Deere	PowerTech Plus	6090H	9.0	Waterloo, IA	20,000	Tier 3 / Stage III A	6, inline	DI, 4	168-298 (225-400) @ 2000-2200	984-1554 (726-1146) @ 1500	106.5 x 127 (4.2 x 5.0)	16.0:1	AG, GS, IS, OH	✓

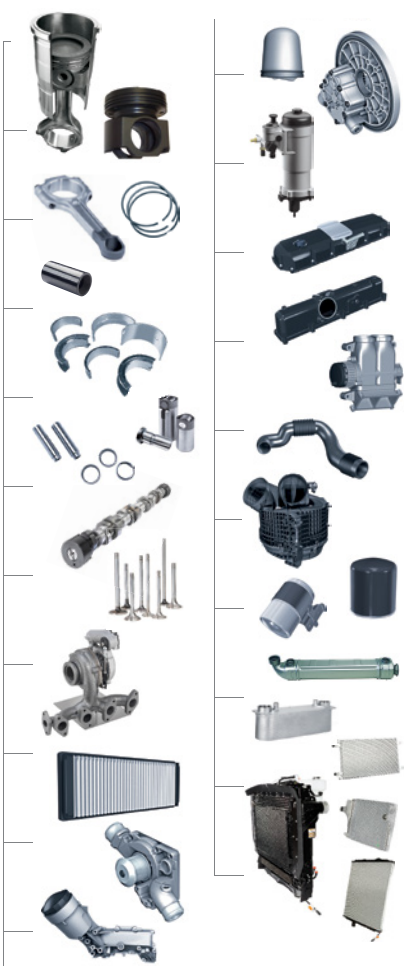
2015

HEAVY-DUTY DIESEL ENGINES

North American Availability & Specifications

37-1120 kW (50-1500 hp)

MAHLE PRODUCT PORTFOLIO



Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2013 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
John Deere (Continued)														
John Deere	PowerTech PSS	6090H	9.0	Waterloo, IA	1,000	Final Tier 4 / Stage IV	6, Inline	DI, 4	192-317 (257-425) @ 1800-2200	1120-1685 (826-1243) @ 1600	118 x 136 (4.6 x 5.4)	16.0:1	AG, GS, IS, OH	✓
John Deere	PowerTech PVX	6090H	9.0	Waterloo, IA	10,000	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	4,000	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	6068AFM	6.8	Torreon, Mexico	300	Marine Tier 3	6, inline	DI, 4	139-166 (186-223) @ 1500, 1800	883-885 (651-653) @ 1500-1800	107 x 127 (4.21 x 5.0)	16.7:1	GS, M	✓
John Deere	PowerTech Marine	6068SFM	6.8	Torreon, Mexico	170	Marine Tier 3	6, inline	DI, 4	168-195 (226-262) @ 1500, 1800	892-1037 (658-765) @ 1500-1800	106 x 127 (4.17 x 5.0)	16.3:1	GS, M	✓
John Deere	PowerTech Marine	6090AFM	9.0	Waterloo, IA	20	Marine Tier 3	6, inline	DI, 4	213-317 (285-425) @ 2100-2400	967-1262 (713-931) @ 2100-2400	118 x 136 (4.65 x 5.4)	16.3:1	M	✓
John Deere	PowerTech Plus	6135H	13.5	Waterloo, IA	5,000	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 6.5)	16.0: 1	AG, GS, IS, OH	✓
John Deere	PowerTech PSS	6135H	13.5	Waterloo, IA	700	Final Tier 4 / Stage IV	6, Inline	DI, 4	309-448 (414-600) @ 2100	1986-2750 (1465-2028) @ 1550	132 x 165 (5.2 x 6.5)	15.3:1	AG, GS, IS, OH	✓
John Deere	PowerTech PSX	6135H	13.5	Waterloo, IA	1,000	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 6.5)	15.3:1	AG, GS, IS, OH	✓
John Deere	PowerTech Marine	6090AFM	9.0	Waterloo, IA	800	Marine Tier 3	6, inline	DI, 4	195-222 (261-297) @ 1500, 1800	1238-1413 (913-1042) @ 1500-1800	118 x 136 (4.65 x 5.4)	16.3:1	GS, M	✓
John Deere	PowerTech Marine	6090SFM	9.0	Waterloo, IA	500	Marine Tier 3	6, inline	DI, 4	222-278 (298-373) @ 1500, 1800	1177-1475 (868-1088) @ 1500-1800	118.4 x 136 (4.66 x 5.35)	16.3:1	GS, M	✓
John Deere	PowerTech Marine	6135AFM	13.5	Waterloo, IA	50	Marine Tier 3	6, inline	DI, 4	272-429 (365-575) @ 1800-2100	1528-1951 (1064-1439) @ 1800-2100	132 x 165 (5.2 x 6.5)	16.0:1	M	✓
John Deere	PowerTech Marine	6135AFM	13.5	Waterloo, IA	400	Marine Tier 3	6, inline	DI, 4	278-334 (373-749) @ 1500, 1800	1770-2124 (1306-1566) @ 1500-1800	132 x 165 (5.2 x 6.5)	16.0:1	GS, M	✓
John Deere	PowerTech Marine	6135SFM	13.5	Waterloo, IA	350	Marine Tier 3	6, inline	DI, 4	294-383 (394-513) @ 1500, 1800	1170-2208 (1305-1629) @ 1500-1800	132 x 165 (5.2 x 6.5)	16.0:1	GS, M	✓
Kubota														
Kubota	03M Series	V2403-M-T-E3B	2.4	Japan	28,000	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	4,800	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	800	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	4,000	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	4,000	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	4,000	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	8,000	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	33,000	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	✓
Navistar														
Navistar	MaxxForce	MaxxForce 7	6.4	Huntsville, AL	12,000	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	19,000	EPA 2010	6, inline	DI, 4	160-224 (215-300) @ 2400	760-1166 (560-860) @ 1300	117 x 119 (4.59 x 4.68)	16.4:1	TB	✓
Navistar	MaxxForce	MaxxForce 9	9.3	Huntsville, AL	5,700	EPA 2010	6, inline	DI, 4	223-246 (300-330) @ 2200	1166-1288 (860-950) @ 1200	117 x 146.1 (4.59 x 5.75)	17.2:1	TB	✓
Navistar	MaxxForce	MaxxForce 10	9.3	Huntsville, AL	8,800	EPA 2010	6, inline	DI, 4	230-260 (310-350) @ 2200	1425-1560 (1050-1150) @ 1200	117 x 146.1 (4.59 x 5.75)	17.2:1	TB	✓
Navistar	MaxxForce	MaxxForce 13	12.4	Huntsville, AL	8,100	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)	16.5:1	TB	✓
MTU America														
MTU/Mercedes-Benz	Series 900	904	4.2	Mannheim, Germany	280	Tier 3 / Stage IIIA	4, inline	DI, 4	75-129 (101-173) @ 2200	400-675 (295-500) @ 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	20,000	Tier 3 / Stage IIIA	4, Inline	DI, 4	145 (195) @ 2200	750 (555) @ 1200-1600	106 x 136 (4.2 x 5.4)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 900	924	4.8	Mannheim, Germany	12,000	Tier 4 Interim / Stage IIIB	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	Series 1000	4R1000	5.1	Mannheim, Germany	280	Tier 4 Final / Stage IV	4, inline	DI, 4	100- 170 (134-228) @ 2200	600-900 (443-664) @ 1200-1600	110 x 135 (4.3 x 5.3)	17.6:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 900	906	6.4	Mannheim, Germany	1,500	Tier 3 / Stage IIIA	6, inline	DI, 4	130-205 (174-275) @ 2200	675-1100 (500-810) @ 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	20,000	Tier 3 / Stage IIIA	6, inline	DI, 4	220-240 (295-322) @ 2200	1200-1300 (885-960) @ 1200-1600	106 x 136 (4.2 x 5.4)	18.0:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 900	926	7.2	Mannheim, Germany	47,000	Tier 4 Interim / Stage IIIB	6, inline	DI, 4	175-240 (234-322) @ 2200	850-1300 (625-960) @1200-1600	106 x 136 (4.2 x 5.4)	18.0:1	AG, IS, OH	✓
MTU	Series 1000	6R1000	7.7	Mannheim, Germany	1,600	Tier 4 Final / Stage IV	6, inline	DI, 4	180- 260(241-349) @ 2200	1000-1400 (738-1033) @ 1200-1600	110 x 135 (4.3 x 5.3)	17.6:1	AG, IS, OH	✓
MTU	Series 1100	6R1100	10.7	Mannheim, Germany	120	Tier 4 Final / Stage IV	6, inline	DI, 4	280-320 (375-429) @ 1700	1900-2100 (1401-1549) @ 1300	125 x 145 (4.9 x 5.7)	17.6:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 460	460	12.8	Mannheim, Germany	12,000	Tier 3 / Stage IIIA	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	35,000	Tier 4 Interim / Stage IIIB	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	Series 1300	6R1300	12.8	Mannheim, Germany	110	Tier 4 Final / Stage IV	6, inline	DI, 4	320-390 (429-523) @ 1700	2100-2450 (1549-1807) @ 1300	132 x 156 (5.2 x 6.1)	17.3:1	AG, IS, OH	✓
MTU/Mercedes-Benz	Series 500	501	12.0	Mannheim, Germany	1,200	Tier 3 / Stage IIIA	V6	DI, 4	260-315 (349-422) @ 1800	1730-2000 (1275-1475) @ 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	200	Tier 4 Interim / Stage IIIB	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	3,500	Tier 3 / Stage IIIA	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	1,700	Tier 4 Interim / Stage IIIB	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	Tooele, UT	1,350	Tier 2 / Stage II	6, inline	DI, 4	224-354 (300-475) @ 1800-2100	1424-2102 (1050-1550) @ 1350	130 x 160 (5.1 x 6.3)	16.0:1	AG, IS, M, OH	✓
MTU/Detroit Diesel	Series 60	S60	14.0	Tooele, UT	200	Tier 2 / Stage II	6, inline	DI, 4	336-496 (450-665) @ 2000-2300	2237-2576 (1650-1900) @ 1350	133 x 168 (5.2 x 6.6)	16.0:1	AG, IS, M, OH	✓
MTU/Detroit Diesel	Series 60	S60	14.0	Tooele, UT	25	Tier 3 / Stage IIIA	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	✓

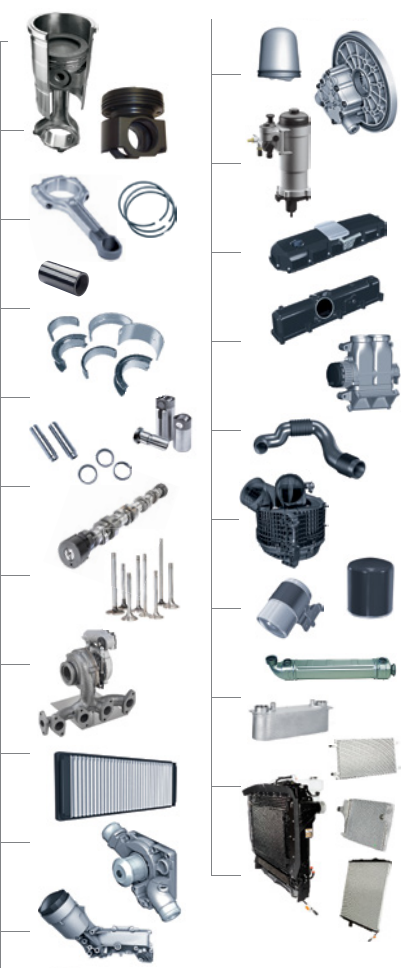
2015

HEAVY-DUTY DIESEL ENGINES

North American Availability & Specifications

37-1120 kW (50-1500 hp)

MAHLE PRODUCT
PORTFOLIO



Brand (Maker)	Engine Family	Engine Model	Displacement (L)	Production Location	2013 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
MTU America (Continued)														
MTU	Series 1600	6R1600	10.5	Friedrichshafen, Germany	200	Tier 3 / Stage IIIA	6, inline	DI, 4	249-343 (334-460) @ 1500-1800	NA	122 x 150 (4.8 x 5.9)	17.5:1	GS	✓
MTU	Series 1600	8V1600	14.0	Friedrichshafen, Germany	1,000	Tier 3 / Stage IIIA	V8	DI, 4	325-448 (436-601) @ 1500-1800	NA	122 x 150 (4.8 x 5.9)	17.5:1	GS	✓
MTU	Series 1600	10V1600	17.5	Friedrichshafen, Germany	400	Tier 3 / Stage IIIA	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	150	Tier 2	V12	DI, 4	524-635 (702-850) @ 1500 560-670 (750-898) @ 1800	NA	122 x 150 (4.8 x 5.9)	17.5:1	GS, OH	✓
MTU	Series 2000	12V2000	26.8	Aiken, SC; Friedrichshafen, Germany	1400	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	600	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	370	Tier 2	V8	DI, 4	720-932 (965-1250)	NA	130 x 150 (5.12 x 5.9), 135 x 156 (5.3 x 6.1)	16.0:1	M	✓
MTU	Series 2000	10V2000	22.3	Friedrichshafen, Germany	250	Tier 2	V10	DI, 4	900 (1205) - 1193 (1600)	NA	135 x 156 (5.3 x 6.1)	16.0:1	M	✓
MTU	Series 2000	12V2000	23.9 - 26.8	Aiken, SC; Friedrichshafen, Germany, Suzhou, China	500	Tier 2	V12	DI, 4	600-1432 (804-1920) @ 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	500	Tier 2	V16	DI, 4	800-1939 (1073-2600) @ 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	65	Tier 2	V8	DI, 4	700-1160 (940-1555) @ 1800-2000	NA	165 x 190 (6.5 x 7.5), 170 x 210 (6.7 x 8.3)	13.7:1	M	✓
MTU	Series 4000	12V4000	48.7-57.3	Aiken, SC; Friedrichshafen, Germany	275	Tier 2	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 190 (6.7 x 7.5), 170 x 210 (6.7 x 8.3)	13.7:1	GS, IS, M, OH	✓
Paccar														
Paccar	PX	PX-7	6.7	Columbus, MS	12,000	Euro 6 / EPA 2013	6, inline	DI, 4	149-268 (200-360) @ 1600-2400	705-1085 (520-800) @ 1600-1800	107 x 124 (4.21 x 4.88)	NA	TB	✓
Paccar	PX	PX-9	8.9	Columbus, MS	2,200	Euro 6 / EPA 2013	6, inline	DI, 4	194-335 (260-450) @ 1400-2100	976-1695 (720-1250) @ 1300-1400	114 x 135 (4.49 x 5.31)	NA	TB	✓
Paccar	MX	MX-11	10.8	Columbus, MS	0	Euro 6 / EPA 2013	6, inline	DI, 4	216-328 (290-440) @ 1450-1700	1200-2100 (885-1550) @ 1000-1700	123 x 152 (4.84 x 5.98)	17.5:1	TB	✓
Paccar	MX	MX-13	12.9	Columbus, MS	24,500	Euro 6 / EPA 2013	6, inline	DI, 4	283-373 (380-500) @ 1300-1700	1966-2508 (1450-1850) @ 1000-1100	130 x 162 (5.12 x 6.38)	16.4:1	TB	✓
Volvo														
Mack	Maxidyne	MP7	11.0	Hagerstown, MD	600	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	4,000	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	400	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	1,500	EPA 2010	6, inline	DI, 4	309-362 (415-505) @ 1500-1700	2277-2386 (1680-1760) @ 1200	131 x 158 (5.16 x 6.22)	16:1	TB	✓
Mack	Maxidyne	MP8	13.0	Hagerstown, MD	6,800	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	6,800	EPA 2010	6, inline	DI, 4	309-362 (415-505) @ 1500-1800	2007-2413 (1480-1780) @ 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	384-451 (515-605) @ 1600-1800	2549-2793 (1880-2060) @ 1200	144 x 165 (5.67 x 6.50)	16:1	TB	✓
Mack	Maxidyne	MP10	16.0	Hagerstown, MD	1,200	EPA 2010	6, inline	DI, 4	384-414 (515-555) @ 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	7,000	EPA 2010	6, inline	DI, 4	265-302 (355-405) @ 1500-1900	1627-2102 (1250-1550) @ 1200	123 x 152 (4.84 x 5.98)	17:1	TB	✓
Volvo	D13	D13	13.0	Hagerstown, MD	22,000	EPA 2010	6, inline	DI, 4	250-361 (375-500) @ 1350-1550	1830-2508 (1450-1850) @ 1100	131 x 158 (5.16 x 6.22)	16:1	TB	✓
Volvo	D16	D16	16.0	Hagerstown, MD	1,800	EPA 2010	6, inline	DI, 4	335-447 (500-600) @ 1350-1550	2237-2780 (1650-2050) @ 1200	144 x 165 (5.67 x 6.50)	16:1	TB	✓
Yanmar														
Yanmar	TNV	4TNV84T	2.0	Japan	38,000	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	40,000	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	21,000	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	✓

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LEGEND FOR NORTH AMERICAN HEAVY-DUTY DIESEL ENGINES 2015

AG: Agriculture
GS: Generator Set
IS: Industrial/Stationary
M: Marine
MI: Military
NA: Not Available
OH: Off-Highway Mobile
SFC: Specific Fuel Consumption

TB: Truck/Bus/Coach
VPC: Valves per Cylinder
* Meet Tier 4 Interim regulations using Transitional Program for Equipment Manufacturers (TPEM). Available in other regulated areas.

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