

**MAN B&W
Diesel Ltd**

**Selection
Guide
2001**

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MAN B&W Diesel Ltd, manufactures a range of diesel, heavy fuel, dual fuel and spark ignition gas engines for power generation, marine propulsion, marine auxiliary power, rail traction and off road applications as well as control and monitoring equipment.

Paxman lightweight, compact, high speed diesel engines provide power in the range 0.6 MWb to 4 MWb at speeds up to 1950 r/min.

Ruston medium speed diesel, heavy fuel, dual fuel and spark ignition gas engines provide power in the range 0.75 to 7.55 MWb at speeds up to 1030 r/min.

Mirrlees Blackstone heavy duty medium speed diesel, heavy fuel and dual fuel engines provide power in the range 2 to over 15 MWb at speeds up to 600 r/min.

Regulateurs Europa design and manufacture mechanical, hydraulic and digital electronic governors and actuators, power management systems, SCADA and remote control systems.

Engine Ratings

Marine Propulsion

Paxman 6-7

Ruston 8-10

Mirrlees Blackstone 11-14

Notes on Applications & Definitions 15-17

Power Generation

Paxman 20

Ruston 21-25

Mirrlees Blackstone 26-30

Notes on Applications & Definitions 31-33

Rail Traction

Paxman 36

Ruston 37-38

Dimensions & Dry Weights

Paxman 39

Ruston 40

Mirrlees Blackstone 41

Regulateurs Europa

Governors 44

Actuators 45

Customer Support

48-49





Marine Propulsion

Paxman VP185/Valenta

Model		A1			A2			B		
		Limited Time			Restricted Marine			Unrestricted Marine		
		Power		Speed	Power		Speed	Power		Speed
		kWb	(bhp)	r/min	kWb	(bhp)	r/min	kWb	(bhp)	r/min
VP185	12V	2610	(3499)	1950	2300	(3083)	1870	2000	(2681)	1800
	18V	4000	(5362)	1950	3500	(4692)	1870	3000	(4021)	1770
Valenta CM 6L	8V	1020	(1367)	1600	850	(1139)	1500	845	(1133)	1510
	8V	1515	(2031)	1600	1270	(1702)	1500	1125	(1508)	1510
	12V	2300	(3083)	1640	2045	(2741)	1540	2000	(2681)	1510
	16V	3060	(4102)	1640	2725	(3653)	1540	2665	(3572)	1510
	18V	3450	(4625)	1640	3065	(4109)	1540	3000	(4021)	1510

Fuel: Distillate

See notes page 15

Paxman Marine Auxiliary & Off-Shore VP185/Valenta

Continuous Power										
Model	Power		Speed	Power		Speed	Power			
	kWb	(bhp)	r/min	kWb	(bhp)	r/min	kWb	(bhp)	r/min	
Valenta CZ 6L				765	(1025)	1500	610	(818)	1200	
8V				1020	(1367)	1500	815	(1092)	1200	
12V				1530	(2051)	1500	1220	(1635)	1200	
16V				2040	(2735)	1500	1630	(2185)	1200	
18V				2295	(3076)	1500	1830	(2453)	1200	
VP185	12V	2165	(2902)	1800	2165	(2902)	1500	1460	(1957)	1200
	18V	3250	(4357)	1800	3250	(4357)	1500	2190	(2936)	1200

Emergency Generator Power										
Model	Power		Speed	Power		Speed	Power			
	kWb	(bhp)	r/min	kWb	(bhp)	r/min	kWb	(bhp)	r/min	
Valenta CZ 6L				850	(1139)	1500	675	(905)	1200	
8V				1275	(1709)	1500	905	(1213)	1200	
12V				1920	(2574)	1500	1360	(1823)	1200	
16V				2555	(3425)	1500	1805	(2420)	1200	
18V				2875	(3854)	1500	2040	(2735)	1200	
VP185	12V	2385	(3197)	1800	2385	(3197)	1500	1640	(2198)	1200
VP185	18V	3580	(4799)	1800	3580	(4799)	1500	2460	(3298)	1200

Fuel: Distillate

See notes page 15

Marine Propulsion

Ruston RK215

Model	Fast Ferry Rating (Note A2)		Long Voyage (Note B)	
	Power kWb (bhp)	Speed r/min	Power kWb (bhp)	Speed r/min
6RK215	860 (1155)	720	780 (1045)	720
	890 (1195)	750	810 (1085)	750
	1065 (1430)	900	970 (1300)	900
	1185 (1590)	1000	1080 (1450)	1000
8RK215	1145 (1535)	720	1040 (1395)	720
	1185 (1590)	750	1080 (1450)	750
	1420 (1905)	900	1300 (1745)	900
	1580 (2120)	1000	1440 (1930)	1000
12RK215	1720 (2305)	720	1560 (2090)	720
	1780 (2385)	750	1620 (2170)	750
	2130 (2855)	900	1940 (2600)	900
	2370 (3180)	1000	2160 (2900)	1000
16RK215	2290 (3070)	720	2080 (2790)	720
	2370 (3180)	750	2160 (2900)	750
	2840 (3810)	900	2600 (3490)	900
	3160 (4240)	1000	2880 (3860)	1000

Fuel: Fast Ferry – Distillate to ISO 8217 DMA

Long Voyage – Distillate to ISO 8217 DMA or DMB

See notes page 16

Ruston RK270

Model	Naval Rating (Note A1)			Fast Ferry Rating (Note A2)			Long Voyage Rating (Note B)		
	Power		Speed r/min	Power		Speed r/min	Power		Speed r/min
	kWb	(bhp)		kWb	(bhp)		kWb	(bhp)	
6RK270				1500	(2010)	720	1480	(1985)	720
				1555	(2085)	750	1510	(2025)	750
				1875	(2515)	900	1735	(2325)	900
8RK270	2265	(3035)	1032	2065	(2770)	1000	1875	(2515)	1000
				2000	(2680)	720	1975	(2650)	720
				2075	(2785)	750	2015	(2700)	750
12RK270				2500	(3355)	900	2315	(3105)	900
	3020	(4050)	1032	2750	(3690)	1000	2500	(3350)	1000
				3000	(4025)	720	2960	(3970)	720
16RK270				3110	(4170)	750	3020	(4050)	750
				3750	(5030)	900	3470	(4650)	900
	4530	(6075)	1032	4125	(5530)	1000	3750	(5030)	1000
20RK270				4000	(5365)	720	3950	(5295)	720
				4150	(5565)	750	4030	(5405)	750
				5000	(6705)	900	4630	(6210)	900
20RK270	6040	(8100)	1032	5500	(7375)	1000	5000	(6705)	1000
				5000	(6705)	720	4935	(6620)	720
				5190	(6960)	750	5035	(6750)	750
				6250	(8380)	900	5780	(7750)	900
				6875	(9220)	1000	6250	(8380)	1000
	7550	(10125)	1032	7080	(9490)	1030			

Fuel: Naval and Fast Ferry – Distillate to ISO 8217 DMA

Long Voyage – Distillate to ISO 8217 DMA or DMB

See notes page 16

Ruston RK270HF

Model	Long Voyage Rating (Note B)		
	Power kWb (bhp)		Speed r/min
6RK270HF	1320	(1770)	720
	1350	(1810)	750
	1435	(1925)	900
	1515	(2030)	1000
8RK270HF	1760	(2360)	720
	1800	(2415)	750
	1910	(2560)	900
	2020	(2710)	1000
12RK270HF	2640	(3540)	720
	2700	(3620)	750
	2865	(3840)	900
	3030	(4065)	1000
16RK270HF	3520	(4720)	720
	3600	(4830)	750
	3820	(5125)	900
	4040	(5420)	1000
20RK270HF	4400	(5900)	720
	4500	(6035)	750
	4775	(6405)	900
	5050	(6770)	1000

Fuel: Heavy Fuel: Based on fuel type ISO 8217 RME25 (180 cSt at 50°C) For fuel type RMG35 (380 cSt at 50°C) derate by 3%.

See notes page 16

Mirrlees Blackstone ESL

Model	Nominal BMEP 19.8 bar (286 lb/in ²)		Nominal BMEP 17.5 bar (254 lb/in ²)	
	Power kWb	Speed r/min	Power kWb	Speed r/min
ESL6			743	750
			892	900
			991	1000
ESL8			991	750
			1189	900
			1321	1000
ESL9			1115	750
			1338	900
			1487	1000
ESL12	1680	750	1488	750
	2015	900	1785	900
	2240	1000	1984	1000
ESL16	2240	750	1983	750
	2685	900	2380	900
	2985	1000	2645	1000

Fuel: Light Fuel/Heavy Fuel with a maximum viscosity of 380 cSt at 50°C

See notes page 17

Mirrlees Blackstone MB275

Model	Nominal BMEP 21 bar (304 lb/in ²)		Nominal BMEP 19.1 bar (227 lb/in ²)	
	Power kWb	Speed r/min	Power kWb	Speed r/min
6MB275	1425	750	1295	750
	1710	900	1555	900
	1900	1000	1730	1000
8MB275	1900	750	1730	750
	2280	900	2075	900
	2535	1000	2305	1000
12MB275	2850	750	2595	750
	3425	900	3115	900
	3800	1000	3460	1000
16MB275	3800	750	3460	750
	4565	900	4150	900
	5070	1000	4610	1000

Fuel: Light Fuel/Heavy Fuel with a maximum viscosity of 700 cSt at 50°C

See notes page 17

Mirrlees Blackstone K & KV Major

Model	Nominal BMEP 19 bar (275 lb/in ²)		Nominal BMEP 17.24 bar (250 lb/in ²)	
	Power kWb	Speed r/min	Power kWb	Speed r/min
K6	2722	500	2485	500
	2796	514	2555	514
	3266	600	2980	600
K8	3630	500	3315	500
	3728	514	3405	514
	4355	600	3975	600
K9	4083	500	3725	500
	4195	514	3830	514
	4900	600	4470	600
KV12	5444	500	4970	500
	5593	514	5110	514
	6532	600	5965	600
KV16	7258	500	6625	500
	7457	514	6810	514
	8710	600	7950	600

Fuel: Light Fuel/Heavy Fuel with a maximum viscosity of 700 cSt at 50°C

See notes page 17

Mirrlees Blackstone MB430

Model	Nominal BMEP 23 bar (333 lb/in ²)		Nominal BMEP 21 bar (304 lb/in ²)	
	Power	Speed	Power	Speed
	kWb	r/min	kWb	r/min
6MB430L	4680	500	4260	500
	4800	514	4380	514
8MB430L	6240	500	5680	500
	6400	514	5840	514
9MB430L	7020	500	6390	500
	7200	514	6570	514
12MB430V	7997	500	7302	500
	8222	514	7507	514
			8763	600
16MB430V	10662	500	9735	500
	10961	514	10008	514
			11683	600
12MB430M	8682	500		
	8925	514		
	10418	600		
16MB430M	11576	500		
	11900	514		
	13891	600		
18MB430M	13023	500		
	13387	514		
	15627	600		

Fuel: Light Fuel/Heavy Fuel with a maximum viscosity of 700 cSt at 50°C

See notes page 17

Notes

Paxman Marine Propulsion Engines

A1 Limited Time

Ratings are for fast patrol craft, high speed leisure craft and luxury yachts where maximum power is generally required for no more than 10% of overall operating profile. Longer periods of maximum power will reduce the time between overhauls.

Ratings are for ISO 3046 reference conditions of 25°C air and 25°C sea water.

Refer to Paxman for derate outside these limits.

A2 Restricted Marine

Ratings for high speed ferries (e.g. catamarans), harbour tugs, medium range offshore patrol craft, some types of coastal fishing vessels.

Ratings are for ISO 3046 reference conditions of 25°C air and 25°C sea water except Paxman VP185 which is to 45°C air and 32°C sea water.

Refer to Paxman for derate outside these limits.

B Unrestricted Marine

Ratings are for long range, ocean going vessels of all types. These ratings are in accordance with ISO 3046/1 as Service Standard Power under IACS marine service conditions. Overload is not available.

Ratings are for ISO 3046 reference conditions of 25°C air and 25°C sea water except Paxman VP185 which is to 45°C air and 32°C sea water.

Refer to Paxman for derate outside these limits.

See pages 42-45 for suitable Governor / Actuator

Notes Ruston Marine Propulsion Engines

A1 Naval

Ratings are for applications where maximum power is generally required for no more than 5% of the operating profile. Ratings are to ISO standard reference conditions.

Refer to Ruston for derate outside these limits.

A2 Fast Ferry

Ratings are for Fast Ferries, medium range offshore patrol craft and some types of fishing vessels.

Power outputs are the continuous ratings available for these applications as applied to IACS marine unrestricted service conditions corresponding to 45°C air and 32°C sea water.

Refer to Ruston for derate outside these conditions.

B Long Voyage

Ratings are for long range ocean going vessels of all types. Ratings are for unrestricted service and are in accordance with ISO 3046/1 as service standard power under IACS marine service conditions.

IMO Marpol Annex VI

All marine engines can be supplied complying with Marpol Annex VI emission requirements.

See pages 42-45 for suitable Governor / Actuator

Notes

Mirrlees Blackstone Marine Propulsion Engines

Application

All engines are available for constant speed operation for marine use. They are also available for variable speed, marine propulsion and similar duties subject to power and torque considerations.

Power Outputs

For marine propulsion engines, the stated powers apply when operating up to International Association of Classification Societies (IACS) conditions, i.e. air temperature 45°C, sea water temperature 32° C.

No overload is allowed for marine engines for propulsion or other duties such as dredge pump drives.

An overload of 10% above the listed power is permissible for 1 hour in 12 for marine auxiliary generating sets.

Statements of power output and fuel consumption can only be provided when accompanied by a list of essential auxiliaries and the means by which they are driven.

Governing

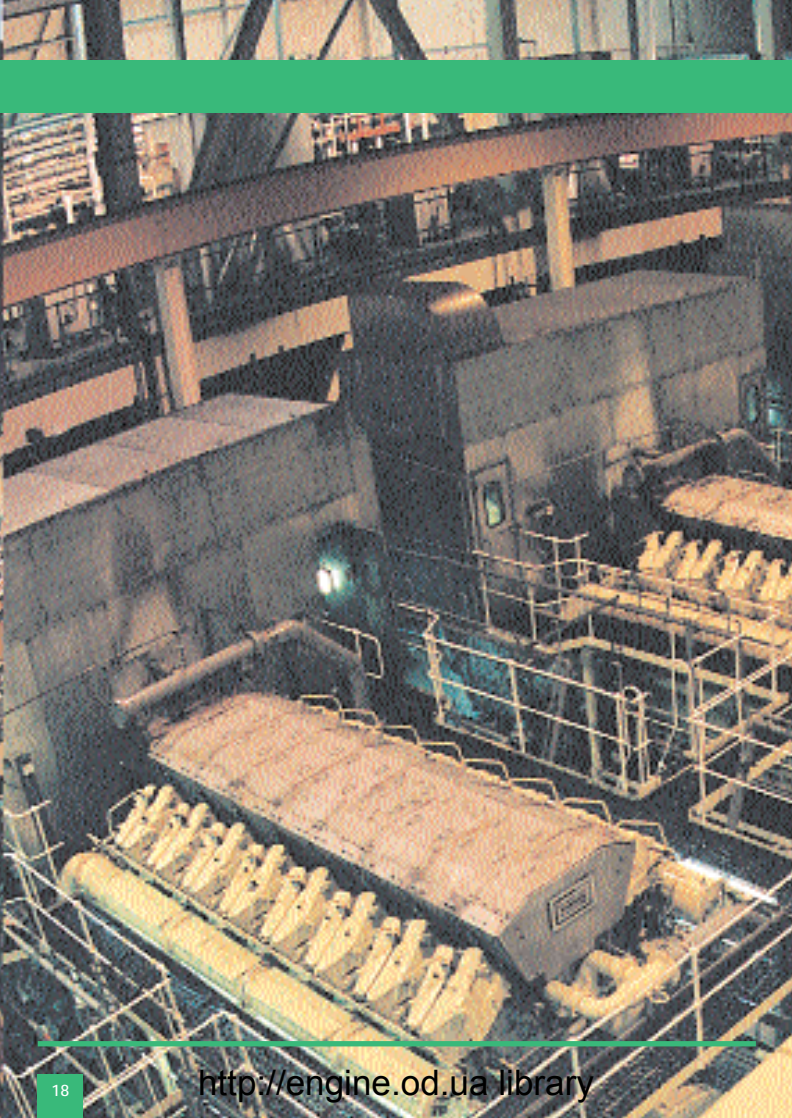
For variable speed marine propulsion governing will be as defined by BS 5514 : Part 4 : 1987 : Class B1 (ISO 3046-4).

For constant marine speed propulsion drive applications incorporating generator drives governing to BS 5514 : Part 4 : Class A2 will normally be achieved subject to specific considerations.

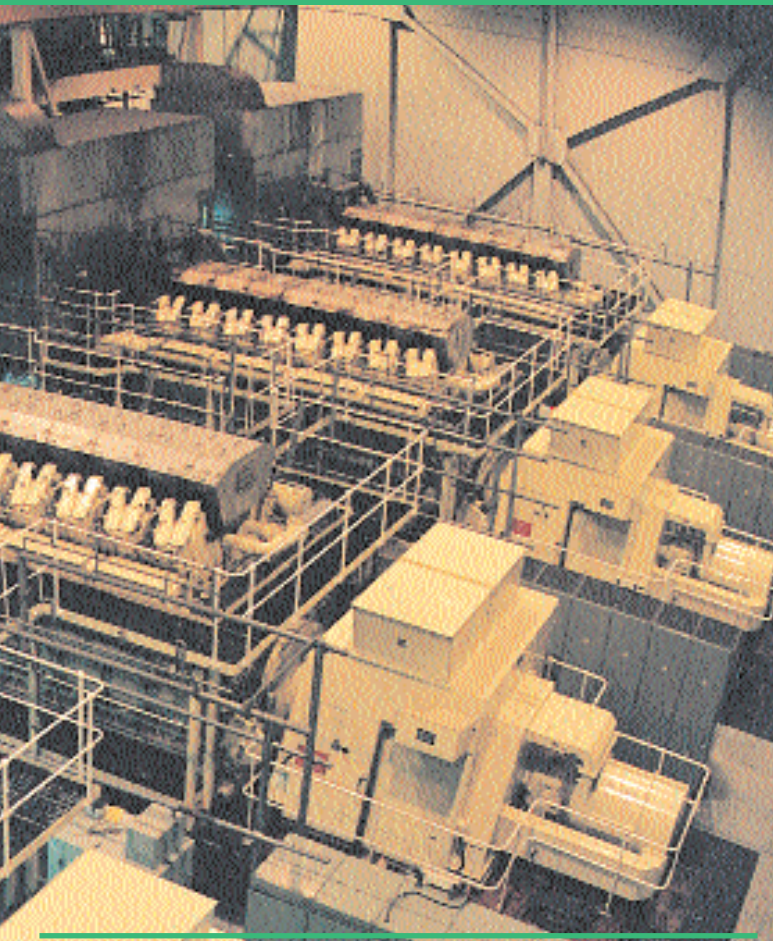
Handing

Handed, 'mirror image' engines are not available.

See pages 42-45 for suitable Governor / Actuator



Power Generation



Power Generation

Paxman VP185/Valenta

Model	Continuous		Limited Time	
	Power kWb	Speed r/min	Power kWb	Speed r/min
VP185 12V	1460	1200	1640	1200
	2165	1500	2385	1500
	2165	1800	2385	1800
VP185 18V	2190	1200	2460	1200
	3250	1500	3580	1500
	3250	1800	3580	1800
Valenta C 6L	680	1200	755	1200
	855	1500	950	1500
	910	1200	1010	1200
8V	1140	1500	1425	1500
	12V	1360	1200	1515
12V	1705	1500	2140	1500
	16V	1820	1200	2015
16V	2275	1500	2850	1500
	18V	2040	1200	2275
18V	2560	1500	3205	1500

Fuel: Distillate

See notes page 31

Ruston RK215

Model	Base Load		Standby		Mechanical Drive	
	Power kWe	Speed r/min	Power kWe	Speed r/min	Power kWb (bhp)	Speed r/min
6RK215	745	720	820	720	780 (1045)	720
	775	750	850	750	810 (1085)	750
	930	900	1020	900	970 (1300)	900
	1035	1000	1130	1000	1080 (1450)	1000
8RK215	995	720	1090	720	1040 (1395)	720
	1035	750	1130	750	1080 (1450)	750
	1245	900	1360	900	1300 (1745)	900
	1375	1000	1510	1000	1440 (1930)	1000
12RK215	1490	720	1645	720	1560 (2090)	720
	1550	750	1700	750	1620 (2170)	750
	1860	900	2040	900	1940 (2600)	900
	2070	1000	2270	1000	2160 (2900)	1000
16RK215	1990	720	2190	720	2080 (2790)	720
	2070	750	2270	750	2160 (2900)	750
	2490	900	2720	900	2600 (3490)	900
	2760	1000	3030	1000	2880 (3860)	1000

Fuel: Distillate

See notes page 32

Power Generation

Ruston RK270

Model	Base Load		Standby		Mechanical Drive	
	Power kWe	Speed r/min	Power kWe	Speed r/min	Power kWb (bhp)	Speed r/min
6RK270	1420	720	1440	720	1480 (1985)	720
	1445	750	1500	750	1510 (2025)	750
	1660	900	1795	900	1735 (2325)	900
	1800	1000	1980	1000	1875 (2515)	1000
8RK270	1890	720	1920	720	1975 (2650)	720
	1930	750	2000	750	2015 (2700)	750
	2220	900	2400	900	2315 (3105)	900
	2400	1000	2630	1000	2500 (3350)	1000
12RK270	2840	720	2880	720	2960 (3970)	720
	2890	750	3000	750	3020 (4050)	750
	3320	900	3600	900	3470 (4650)	900
	3600	1000	3960	1000	3750 (5030)	1000
16RK270	3780	720	3840	720	3950 (5295)	720
	3860	750	4000	750	4030 (5405)	750
	4440	900	4800	900	4630 (6210)	900
	4800	1000	5280	1000	5000 (6705)	1000
20RK270	4735	720	4800	720	4935 (6620)	720
	4830	750	5000	750	5035 (6750)	750
	5550	900	6000	900	5780 (7750)	900
	6000	1000	6600	1000	6250 (8380)	1000

Fuel: Distillate

See notes page 32

Ruston RK270HF

Model	Base Load		Mechanical Drive	
	Power kWe	Speed r/min	Power kWb (bhp)	Speed r/min
6RK270HF	1260	720	1320 (1770)	720
	1290	750	1350 (1810)	750
	1370	900	1435 (1925)	900
	1450	1000	1515 (2030)	1000
8RK270HF	1680	720	1760 (2360)	720
	1720	750	1800 (2415)	750
	1825	900	1910 (2560)	900
	1930	1000	2020 (2710)	1000
12RK270HF	2520	720	2640 (3540)	720
	2580	750	2700 (3620)	750
	2740	900	2865 (3840)	900
	2900	1000	3030 (4065)	1000
16RK270HF	3370	720	3520 (4720)	720
	3450	750	3600 (4830)	750
	3650	900	3820 (5125)	900
	3880	1000	4040 (5420)	1000
20RK270HF	4220	720	4400 (5900)	720
	4320	750	4500 (6035)	750
	4570	900	4775 (6405)	900
	4850	1000	5050 (6770)	1000

Fuel: Heavy Fuel based on fuel type ISO 8217 RME25 (180 cSt at 50°C) - for a fuel type of RMG35 (380 cSt at 50°C) derate by 3%.

See notes page 32

Power Generation

Ruston RKG

Model	Base Load		Mechanical Drive	
	Power kWe	Speed r/min	Power kWb (bhp)	Speed r/min
6RKG	770	720	810 (1085)	720
	810	750	845 (1135)	750
	970	900	1015 (1360)	900
	1070	1000	1125 (1510)	1000
8RKG	1030	720	1080 (1450)	720
	1070	750	1125 (1510)	750
	1290	900	1350 (1810)	900
	1430	1000	1500 (2010)	1000
12RKG	1550	720	1620 (2170)	720
	1620	750	1690 (2265)	750
	1940	900	2030 (2720)	900
	2160	1000	2250 (3015)	1000
16RKG	2070	720	2160 (2900)	720
	2160	750	2250 (3015)	750
	2590	900	2700 (3620)	900
	2880	1000	3000 (4025)	1000

Fuel: Dual Fuel: Distillate/Gas. Ratings are based on sewage/landfill gas with a combustible content of 95% methane by volume - for natural/mines gas derate by 12.5%.

See notes page 32

Ruston RK270GS

Model	Base Load		Mechanical Drive	
	Power kWe	Speed r/min	Power kWb (bhp)	Speed r/min
6RK270GS	910	720	945 (1265)	720
	950	750	985 (1320)	750
	1150	900	1200 (1610)	900
	1280	1000	1330 (1785)	1000
8RK270GS	1215	720	1255 (1680)	720
	1265	750	1310 (1755)	750
	1540	900	1600 (2145)	900
	1710	1000	1775 (2380)	1000
12RK270GS	1825	720	1890 (2535)	720
	1900	750	1970 (2640)	750
	2315	900	2400 (3220)	900
	2565	1000	2660 (3570)	1000
16RK270GS	2425	720	2520 (3380)	720
	2530	750	2625 (3520)	750
	3085	900	3200 (4290)	900
	3425	1000	3550 (4760)	1000

Fuel gas - varieties include natural, bio and landfill. Gas composition and condition may effect power available. Refer to MAN B&W Diesel Ltd, Ruston for specific application.

See notes page 32

Power Generation

Mirrlees Blackstone ESL

Model	Nominal BMEP 19.8 bar (286 lb/in ²)		Nominal BMEP 17.5 bar (254 lb/in ²)	
	Power kWe	Speed r/min	Power kWe	Speed r/min
ESL6			698	750
			838	900
			932	1000
ESL8			932	750
			1118	900
			1242	1000
ESL9			1048	750
			1258	900
			1398	1000
ESL12	1580	750	1399	750
	1894	900	1678	900
	2105	1000	1865	1000
ESL16	2105	750	1864	750
	2524	900	2237	900
	2806	1000	2486	1000

Fuel: Light Fuel/Heavy Fuel with a maximum viscosity of 380 cSt at 50°C

See notes page 33

Mirrlees Blackstone MB275

Model	Nominal BMEP 21 bar (304 lb/in ²)		Nominal BMEP 19.1 bar (277 lb/in ²)	
	Power kWe	Speed r/min	Power kWe	Speed r/min
6MB275	1370	750	1245	750
	1640	900	1495	900
	1825	1000	1660	1000
8MB275	1825	750	1660	750
	2190	900	1990	900
	2435	1000	2215	1000
12MB275	2735	750	2490	750
	3290	900	2990	900
	3650	1000	3320	1000
16MB275	3650	750	3320	750
	4380	900	3985	900
	4865	1000	4425	1000

Fuel: Light Fuel/Heavy Fuel with a maximum viscosity of 700 cSt at 50°C

See notes page 33

Power Generation

Mirrlees Blackstone K & KV Major

Model	Nominal BMEP 19 bar (275 lb/in ²)		Nominal BMEP 17.2 bar (250 lb/in ²)	
	Power kWe	Speed r/min	Power kWe	Speed r/min
K6	2585	500	2360	500
	2655	514	2425	514
	3100	600	2830	600
K8	3450	500	3150	500
	3540	514	3235	514
	4140	600	3775	600
K9	3879	500	3540	500
	3985	514	3640	514
	4655	600	4245	600
KV12	5170	500	4720	500
	5310	514	4850	514
	6200	600	5660	600
KV16	6900	500	6300	500
	7080	514	6470	514
	8280	600	7550	600

Fuel: Light Fuel/Heavy Fuel with a maximum viscosity of 700 cSt at 50°C

See notes page 33

Mirrlees Blackstone KP & KVP Major Dual Fuel

Model	Nominal BMEP 15 bar (217.5 lb/in ²)	
	Power kWe	Speed r/min
KP6	2055	500
	2110	514
	2465	600
KP8	2740	500
	2815	514
	3285	600
KP9	3085	500
	3180	514
	3700	600
KVP12	4110	500
	4220	514
	4930	600
KVP16	5480	500
	5630	514
	6570	600

Fuel: Distillate and Gas having a typical methane content of 90%

See notes page 33

Power Generation

Mirrlees Blackstone MB430

Model	Nominal BMEP 23 bar (333 lb/in ²)		Nominal BMEP 21 bar (304 lb/in ²)	
	Power kWe	Speed r/min	Power kWe	Speed r/min
6MB430L	4521	500	4115	500
	4637	514	4231	514
8MB430L	6028	500	5487	500
	6182	514	5641	514
9MB430L	6781	500	6172	500
	6955	514	6347	514
12MB430V	7725	500	7054	500
	7942	514	7252	514
16MB430V	10299	500	8465	600
	10588	514	9404	500
12MB430M	8422	500	9668	514
	8657	514	11286	600
16MB430M	10105	600		
	11229	500		
18MB430M	11543	514		
	13474	600		
12MB430M	12632	500		
	12985	514		
	15158	600		

Fuel: Light Fuel/Heavy Fuel with a maximum viscosity of 700 cSt at 50°C

See notes page 33

Notes Paxman Power Generation

All powers are given in kWb. No allowance is made for alternator losses or other parasitic losses. Alternator losses are typically 4% of kWb.

Ratings are to ISO 3046 reference conditions of 25°C air inlet and 25°C secondary water temperatures.

When alternating current generator sets are supplied, these are rated in accordance with ISO8528-1.

Derate for Valenta engines is to ISO 3046/1 Clause 10 using formula reference D.

Valenta and VP185 have separate primary and secondary coolant circuits.

An overload of 10% is available from Valenta engines for a period of 1 hour in 12 hours operation in power generation applications only. No overload is available for peak lopping applications or limited time ratings.

VP185 engines require no derate for ambient air temperatures up to 40°C subject to maximum secondary water inlet temperature of 60°C and primary water inlet temperature of 80°C. Derate outside these conditions must be referred to Paxman.

See pages 42-45 for suitable Governor / Actuator

Notes

Ruston Power Generation/Mechanical Drive

Engines for Base Load Power Generation

Engine outputs for power generation are shown in kW_e, and assume 96% alternator efficiency. Output will vary according to actual alternator efficiency.

The engines are rated to deliver power for continuous base load power generation in accordance with ISO 3046-1 (BS 5514 Part 1)

Where alternating current generator sets are supplied, these are rated in accordance with ISO 8528-1.

Overload of 110% of the continuous power is available for a period of 1 hour in 12, except for gas fuelled engines.

Engines for Standby Power Generation, capable of delivering the rated power for up to 500 hours per year, of which a maximum of 300 hours may be continuous operation

The engines are rated to deliver power for limited time power generation, in accordance with ISO 8528-1.

Overload is not available on this service.

Engines for Mechanical Drive Applications

These engines are rated to deliver power in accordance with ISO 3046-1 (BS 5514 Part 1).

Overload of 110% of the continuous power is available for a period of 1 hour in 12, except for gas fuelled engines.

bhp = brake horse power (British)

See pages 42-45 for suitable Governor / Actuator

Notes

Mirrlees Blackstone Power Generation

Electrical outputs depend on actual efficiency of selected alternator.

Frequency of output:

500 r/min	- 50 Hz
514 r/min	- 60 Hz
600 r/min	- 50/60 Hz
750 r/min	- 50 Hz
900 r/min	- 60 Hz
1000 r/min	- 50 Hz

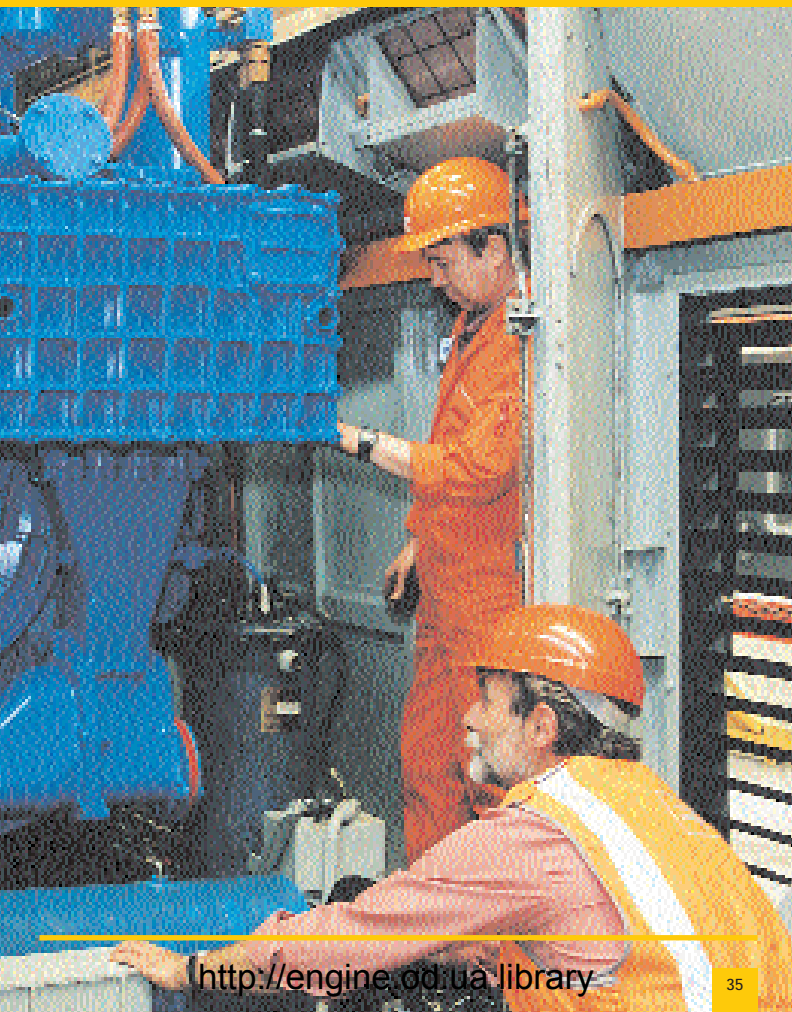
The power outputs are the maximum continuous electrical power rating (MCR) available under standard reference conditions. The reference conditions are as defined in clause 6 of BS5514:Part 1:1996, (ISO 3046-1), or substitute reference conditions declared by MAN B&W Diesel Ltd, to minimise derate. Adjustments of power outputs for site conditions are specified in section 13 of BS5514:Part 1:1996, (ISO 3046-1).

The quoted powers are regardless of whether lubricating oil and cooling water pumps are driven directly by the engine or separately by other means.

Limiting factors affecting fuel are given for guidance only and will be subject to approval by MAN B&W Diesel Ltd, on an individual basis.

See pages 42-45 for suitable Governor / Actuator





Rail Traction

Paxman VP185/Valenta

Model	Power kWb (bhp)	Speed r/min	Power kWb (bhp)	Speed r/min
VP185 12V	2060 (2761)	1800	1860 (2493)	1500
18V	3100 (4155)	1800	2800 (3753)	1500
Valenta CL 6L			840 (1126)	1500
8V			1120 (1501)	1500
12V			1790 (2399)	1500
16V			2240 (3003)	1500
18V			2520 (3378)	1500

The above table shows the U.I.C. service powers at the reference condition of 30°C air inlet and 45°C secondary water temperatures.

For derates refer to MAN B&W Diesel Ltd, Paxman

See pages 42-45 for suitable Governor / Actuator

Ruston RK215

Model	kWb	CV	bhp	Speed r/min
6RK215	1005	1365	1345	850
	1065	1445	1430	900
	1125	1530	1510	950
8RK215	1185	1610	1590	1000
	1340	1820	1795	850
	1420	1930	1905	900
	1500	2040	2010	950
12RK215	1580	2150	2120	1000
	2010	2735	2695	850
	2130	2895	2855	900
16RK215	2250	3060	3015	950
	2370	3220	3180	1000
	2680	3645	3595	850
	2840	3860	3810	900
	3000	4080	4025	950
	3160	4295	4240	1000

Fuel: Distillate

Notes: Where alternating current generator sets are supplied, these are rated in accordance with ISO 8528-1.

Engines for Main Line Locomotives:

These engines are rated at U.I.C. nominal output, under the conditions of the U.I.C. code 623-2 OR. Overload is not available on this service.

bhp = brake horse power (British) CV = Cheval vapeur (metric)

For derates refer to MAN B&W Diesel Ltd, Ruston

See pages 42-45 for suitable Governor / Actuator

Rail Traction

Ruston RK270

Model	kWb	CV	bhp	Speed r/min
6RK270	1770	2405	2375	850
	1875	2550	2515	900
	1970	2680	2640	950
	2065	2805	2770	1000
8RK270	2360	3210	3165	850
	2500	3400	3355	900
	2625	3570	3520	950
	2750	3740	3690	1000
12RK270	3540	4815	4745	850
	3750	5100	5030	900
	3940	5355	5285	950
	4125	5605	5530	1000
16RK270	4720	6415	6330	850
	5000	6800	6705	900
	5250	7135	7040	950
	5500	7475	7375	1000
20RK270	5900	8020	7910	850
	6250	8500	8380	900
	6560	8920	8800	950
	6875	9345	9220	1000

Fuel: Distillate

Notes: Where alternating current generator sets are supplied, these are rated in accordance with ISO 8528-1.

Engines for Main Line Locomotives: These engines are rated at U.I.C. nominal output, under the conditions of the U.I.C. code 623-2 OR. Overload is not available on this service.

bhp = brake horse power (British) CV = Cheval vapeur (metric)

For derates refer to MAN B&W Diesel Ltd, Ruston

See pages 42-45 for suitable Governor / Actuator

Dimensions & Dry Weights

Paxman

Engine Type	Height mm	Length mm	Width mm	Dry Weight kg
12VP185	2175	2971	1660	7460
18VP185	2178	3798	1450	10161
Valenta 6	1943	2673	1070	5175
Valenta 8	2273	2133	1460	5690
Valenta 12	2324	2327	1432	8117
Valenta 16	2502	2848	1485	10220
Valenta 18	2400	3218	1460	11147

Overall dimensions and weights are given for guidance only.

For detailed information refer to MAN B&W Diesel Ltd, Paxman

Dimensions & Dry Weights

Ruston Industrial & Marine Engines

Engine Type	Height mm	Length mm	Width mm	Dry Weight kg
6RK215	2145	2595	1480	7500
8RK215	2250	2640	1875	9500
12RK215	2840	3600	1875	13500
16RK215	2840	4300	1875	17000
6RKG	2405	3860	1205	12110
8RKG	2460	3395	1745	14210
12RKG	2500	4245	1820	19290
16RKG	2505	5085	1825	23860
6RK270	2490	4020	1325	13050
8RK270	2480	4585	1300	17500
12RK270	2645	4285	1825	22000
16RK270	2820	5075	1830	27000
20RK270	2820	5965	1940	33500

Also applicable to RK270HF and RK270GS

Ruston Traction Engines

Engine Type	Height mm	Length mm	Width mm	Dry Weight kg
6RK215	1900	2940	1420	6805
8RK215	2320	2595	1790	9000
12RK215	2320	3600	1790	12100
16RK215	2320	4310	1790	14600
6RK270	2490	4020	1325	13050
8RK270	2480	4585	1300	17500
12RK270	2645	4285	1825	22000
16RK270	2820	5075	1830	27000
20RK270	2820	5965	1940	33000

Overall dimensions and weights are given for guidance only.

For detailed information refer to MAN B&W Diesel Ltd, Ruston

Dimensions & Dry Weights

Mirrlees Blackstone

Engine Type	Height mm	Length mm	Width mm	Dry Weight kg
ESL5	2322	3222	1442	10500
ESL6	2322	3549	1442	12120
ESL8	2587	4452	1442	15400
ESL9	2587	4779	1442	16360
ESL12	2998	3704	1731	15500
ESL16	2998	4204	1731	19000
6MB275	3410	4670	1340	20500
8MB275	3410	5880	1340	24500
12MB275	3317	4850	2656	34500
16MB275	3427	5870	2706	38600
K6	3710	6070	2590	39818
K8	3710	7315	2590	51045
K9	3710	7988	2590	56705
KV12	4010	7466	4880	81901
KV16	4010	9168	4880	104804
6MB430L	4631	6060	2330	71500
8MB430L	4631	7730	2330	87100
9MB430L	4631	8400	2330	97000
12MB430V	4730	6060	3824	100600
16MB430V	4730	7730	3824	124000
12MB430M	4740	6300	3888	112000
16MB430M	4740	7640	3888	140000
18MB430M	4740	8310	3888	154000

For KP and KVP dimensions refer to K and KV dimensions above.

Overall dimensions and weights are given for guidance only.

For detailed information refer to MAN B&W Diesel Ltd, Mirrlees Blackstone.

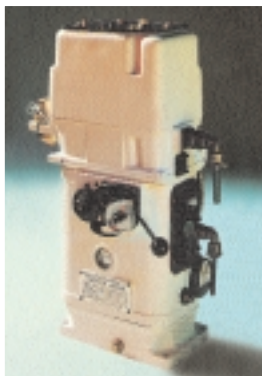
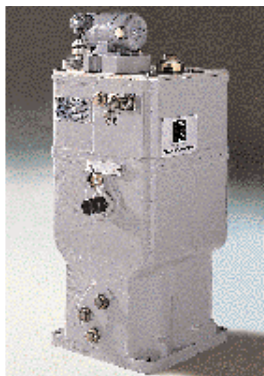
Regulateurs Europa



Governor 1100



Actuator 2221



Regulateurs Europa - Governors

Type	Output ft lbs. (joules)	Operating speed r/min	Features	Application
400	9(12) 18(24) 37(50)	900- 3000	Governing to class AO of ISO precision control.	High performance generating sets. Requiring fast transient response.
1100	8(11) 15(20) 25(34) 34(46) 40(53)	300-1600	32 different variations speed setting by: hand lever, electric motor, pneumatics, electric stepper motor, proportional electronic or hand wheel. Fuel limit, torque limit, load control.	General purpose suitable for almost all applications including rail traction, marine & industrial.
1500	120(162) 200(271) 250(339)	160-1150	Largest governor in range all normal options for speed setting plus limit and controlling functions.	General purpose high power medium speed and large bore slow speed engines.
1800	60(81) 80(108)	200-1200	Extensive range of operational features including speed setting options and fuel limit.	General purpose medium speed diesel engines.
2100	8(11) 12(16)	300-1800	Smallest governor in range. Most suitable for standard generating sets.	General purpose smaller engine range.

Mechanical, hydraulic, electric governors and actuator ratings from 8 to 250 ft lbs. Basic units or ball head back-up in accordance with the requirements of BS5514 Part 4 - speed governing ISO 3046/IV - speed governing.

Digital governing, digital engine management systems, propulsion control panels and marine control systems. (Viking 22, 24 & 25).

Specific models with certification / type approval from Germanischer Lloyd, Bureau Veritas, Det Norske Veritas, Korean Register of Shipping (type approval and certification) and American Bureau of Shipping.

Regulateurs Europa - Actuators

Type	Output ft lbs. (joules)	Operating speed r/min	Features	Application
2221	8(11) 15(20) 25(34) 34(46) 40(53)	300-1600	Output shaft position is proportional to the electric input. Booster can be supplied for applications where minimal start air consumption is required.	General purpose
2231			Ballhead backup in the event of control or power failure	Marine propulsion
2222	60(81) 80(108)	300-1600	Output shaft position is proportional to the electric input. Booster can be supplied for applications where minimal start air consumption is required.	General purpose
2232			Ballhead backup in the event of control or power failure	Marine propulsion
2223	120(162) 200(271) 250(339)	160-1150	Largest proportional actuator in range with a two stage high stiffness, backlash free hydraulic servo mechanism. The highest output units are supplied with an oil cooler as standard.	General purpose larger engine range.
2233			Ballhead backup in the event of control or power failure	Marine propulsion
2224	8(11) 12(16)	300-1800	Smallest proportional actuator in range	General purpose smaller engine range
2241	15(20) 25(34) 34(46) 40(53)	Driveless hydraulic	Driveless hydraulic actuator with the output shaft proportional to electric single. External oil supply.	General purpose
2242	80(108) nominal	Driveless hydraulic	Driveless hydraulic actuator with the output shaft proportional to electric single. External oil supply.	General purpose
2600	60(81)	Driveless Electric	Electric proportional actuator with motor and state-of-the-art microprocessor controlled electronic driver.	General purpose



Worldwide Customer Support



Customer Support

Installation & Field Service Support

Highly skilled engineers offer customers a comprehensive service in support of all engines. This covers all aspects of installation, commissioning and routine maintenance to ensure optimum performance.

Engineers can provide full maintenance support or help customers develop and implement their own planned maintenance programmes.

Spare Parts

Genuine Mirrlees Blackstone, Ruston and Paxman engine replacement parts are available from Stockport, Stamford, Newton-le-Willows, Colchester and from service and spares representatives in strategic locations worldwide.

Only genuine MAN B&W Diesel Ltd, parts are manufactured to exacting metallurgical and dimensional standards and are guaranteed by a certificate of authenticity and quality. These certificates are not obtainable from any other source.



Overhauls

Factory warranted overhaul and refurbishing is available for all engines. Engines are rebuilt incorporating the latest design modifications at manufacturing sites, or at regional centres around the world.



Training

Training schools are fully equipped to provide operators and supervisory staff with hands-on experience of servicing procedures for engines and ancillary equipment as well as repair and overhaul courses.

Training courses can also be offered at training centres in the UK, Australia, Malaysia, Singapore and the US or if required at the customers' chosen location.





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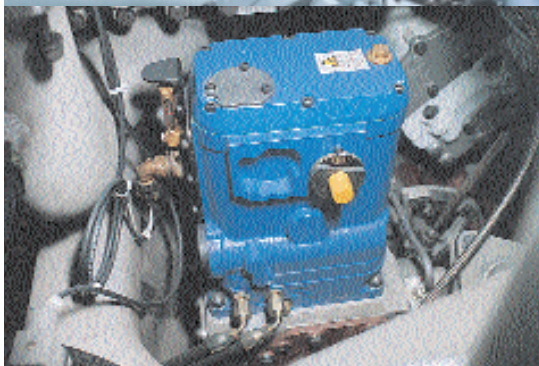
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