

Kubota

DIESEL ENGINE

**05-E2B SERIES,
05-E2BG SERIES**

SPECIFICATIONS

Model	D905-E2B		D1005-E2B		V1305-E2B			
Number of Cylinders	3				4			
Type	Vertical, Water-cooled, 4 cycle diesel engine							
Bore × Stroke	mm (in.)		72 × 73.6 (2.83 × 2.90)				76 × 73.6 (2.99 × 2.90)	
Total Displacement	cm ³ (cu.in.)		898 (54.80)		1001 (61.08)		1335 (81.46)	
ISO Net Continuous	kW/min ⁻¹ (rpm) (HP/min ⁻¹ (rpm))		13.0 / 3000 (17.4 / 3000)	15.2 / 3600 (20.4 / 3600)	14.5 / 3000 (19.5 / 3000)	16.8 / 3600 (22.5 / 3600)	19.0 / 3000 (26.0 / 3000)	22.4 / 3600 (30.0 / 3600)
ISO/SAE Net Intermittent	kW/min ⁻¹ (rpm) (HP/min ⁻¹ (rpm))		14.9 / 3000 (20.0 / 3000)	17.5 / 3600 (23.5 / 3600)	16.8 / 3000 (22.5 / 3000)	19.4 / 3600 (26.0 / 3600)	22.4 / 3000 (30.0 / 3000)	25.7 / 3600 (34.5 / 3600)
SAE Gross Intermittent	kW/min ⁻¹ (rpm) (HP/min ⁻¹ (rpm))		15.5 / 3000 (20.8 / 3000)	18.5 / 3600 (24.8 / 3600)	17.5 / 3000 (23.5 / 3000)	20.4 / 3600 (27.3 / 3600)	23.4 / 3000 (31.4 / 3000)	27.2 / 3600 (36.5 / 3600)
Maximum Bare Speed	(min ⁻¹ (rpm))		3200	3800	3200	3800	3200	3800
Minimum Bare Idling Speed	(min ⁻¹ (rpm))		900					
Combustion Chamber	Spherical type (E-TVCS)							
Fuel Injection Pump	Bosch MD type mini pump							
Governor	All speed mechanical governor							
Direction of Rotation	Counter-clockwise (viewed from flywheel side)							
Injection Nozzle	Mini Nozzle (DNOPD)							
Injection Timing	0.31 rad (18°) before T.D.C.	0.37 rad (21°) before T.D.C.	0.31 rad (18°) before T.D.C.	0.37 rad (21°) before T.D.C.	0.31 rad (18°) before T.D.C.	0.37 rad (21°) before T.D.C.	0.31 rad (18°) before T.D.C.	0.37 rad (21°) before T.D.C.
Firing Order	1-2-3				1-3-4-2			
Injection Pressure	13.73 MPa (140 kgf/cm ² , 1991 psi)							
Compression Ratio	23 : 1			24 : 1				
Lubricating System	Forced lubrication by trochoid pump							
Oil Pressure Indicating	Electrical type switch							
Lubricating Filter	Full flow paper filter (Cartridge type)							
Cooling System	Pressurized radiator, forced circulation with water pump							
Starting System	Electric Starting with Starter							
Starting Motor	12 V, 0.9 kW			12 V, 1.0 kW				
Starting Support Device	By glow plug in combustion chamber							
Battery	12 V, 60 AH, equivalent							
Charging Alternator	12 V, 150 W			12 V, 360 W				
Fuel	Diesel Fuel No.2-D (ASTM D975)							
Lubricating Oil	Class CF lubricating oil as per API classification is recommended. If this class of lubricating oil is not available, preferably use Class CD or CE lubricating oil. For details on recommended lubricating oils, see page G-6, 9.							
Lubricating Oil Capacity (Oil Pan Depth 125 mm (4.92 in.))	5.1 L (1.35 U.S.gals)				6.0 L (1.59 U.S.gals)			
Weight (Dry)	kg (lbs)		93.0 (205.0)			110.0 (242.5)		

* The specification described above is of the standard engine of each model.

* Conversion Formula : HP = 0.746 kW, PS = 0.7355 kW

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Model	D1105-E2B	V1505-E2B	D1105-T-E2B	V1505-T-E2B
Number of Cylinders	3	4	3	4
Type	Vertical, Water-cooled, 4 cycle diesel engine			
Bore × Stroke mm (in.)	78 × 78.4 (3.07 × 3.09)			
Total Displacement cm ³ (cu.in.)	1123 (68.53)	1498 (91.41)	1123 (68.53)	1498 (91.41)
ISO Net Continuous kW/min ⁻¹ (rpm) (HP/min ⁻¹ (rpm))	16.2 / 3000 (21.7 / 3000)	21.7 / 3000 (29.1 / 3000)	20.4 / 3000 (27.4 / 3000)	27.2 / 3000 (36.4 / 3000)
ISO/SAE Net Intermittent kW/min ⁻¹ (rpm) (HP/min ⁻¹ (rpm))	18.7 / 3000 (25.0 / 3000)	25.0 / 3000 (33.5 / 3000)	23.5 / 3000 (31.5 / 3000)	31.3 / 3000 (42.0 / 3000)
SAE Gross Intermittent kW/min ⁻¹ (rpm) (HP/min ⁻¹ (rpm))	19.4 / 3000 (26.0 / 3000)	26.5 / 3000 (35.5 / 3000)	24.5 / 3000 (32.8 / 3000)	33.0 / 3000 (44.2 / 3000)
Maximum Bare Speed (min ⁻¹ (rpm))	3200			
Minimum Bare Idling Speed (min ⁻¹ (rpm))	900			
Combustion Chamber	Spherical type (E-TVCS)			
Fuel Injection Pump	Bosch MD type mini pump			
Governor	All speed mechanical governor			
Direction of Rotation	Counter-clockwise (viewed from flywheel side)			
Injection Nozzle	Mini Nozzle (DNOPD)			
Injection Timing	0.31 rad (18 °) before T.D.C.			
Firing Order	1-2-3	1-3-4-2	1-2-3	1-3-4-2
Injection Pressure	13.73 MPa (140 kgf/cm ² , 1991 psi)			
Compression Ratio	24 : 1		23 : 1	
Lubricating System	Forced lubrication by trochoid pump			
Oil Pressure Indicating	Electrical type switch			
Lubricating Filter	Full flow paper filter (Cartridge type)			
Cooling System	Pressurized radiator, forced circulation with water pump			
Starting System	Electric Starting with Starter			
Starting Motor	12 V, 1.0 kW	12 V, 1.2 kW	12 V, 1.0 kW	12 V, 1.2 kW
Starting Support Device	By glow plug in combustion chamber			
Battery	12 V, 65 AH equivalent	12 V, 75 AH equivalent	12 V, 65 AH equivalent	12 V, 56 AH equivalent
Charging Alternator	12 V, 360 W			
Fuel	Diesel Fuel No.2-D (ASTM D975)			
Lubricating Oil	Class CF lubricating oil as per API classification is recommended. If this class of lubricating oil is not available, preferably use Class CD or CE lubricating oil. For details on recommended lubricating oils, see page G-6, 9.			
Lubricating Oil Capacity (Oil Pan Depth 125 mm (4.92 in.))	5.1 L (1.35 U.S.gals)	6.0 L (1.59 U.S.gals)	5.1 L (1.35 U.S.gals)	6.7 L (1.77 U.S.gals)
Weight (Dry) kg (lbs)	93.0 (205.0)	110.0 (242.5)	97.0 (213.8)	114.0 (251.3)

* The specification described above is of the standard engine of each model.

* Conversion Formula : HP = 0.746 kW, PS = 0.7355 kW

Model		D905-E2BG	D1005-E2BG	V1305-E2BG
		BG1	BG1	BG1
Number of Cylinders		3		4
Type		Vertical, Water-cooled, 4 cycle diesel engine		
Bore × Stroke mm (in.)		72 × 73.6 (2.83 × 2.90)	76 × 73.6 (2.99 × 2.90)	
Total Displacement cm ³ (cu.in.)		898 (54.86)	1001 (61.08)	1335 (81.46)
STAND-BY	ISO 3046 kW/min ⁻¹ (rpm)	8.9 / 1800	9.8 / 1800	13.1 / 1800
	SAE J-1349 (HP/min ⁻¹ (rpm))	11.9 / 1800	13.7 / 1800	17.5 / 1800
NET CONT.	ISO 3046 kW/min ⁻¹ (rpm)	7.8 / 1800	8.6 / 1800	11.6 / 1800
	SAE J-1349 (HP/min ⁻¹ (rpm))	10.5 / 1800	11.6 / 1800	15.5 / 1800
Governor Regulation		Less than 5 %		
Combustion Chamber		Spherical type (E-TVCS)		
Fuel Injection Pump		Bosch type		
Governor		All speed mechanical governor		
Direction of Rotation		Counter-clockwise (viewed from flywheel side)		
Injection Nozzle		Bosch "Throttle" type		
Injection Timing		0.29 rad (16.5 °) before T.D.C.		
Firing Order		1-2-3	1-3-4-2	
Injection Pressure		13.73 MPa (140 kgf/cm ² , 1991 psi)		
Compression Ratio		23 : 1	24 : 1	
Lubricating System		Forced lubrication by trochoid pump		
Oil Pressure Indicating		Electrical type switch		
Lubricating Filter		Full flow paper filter (Cartridge type)		
Cooling System		Pressurized radiator, forced circulation with water pump		
Starting System		Electric Starting with Starter		
Starting Motor		12 V, 0.9 kW	12 V, 1.0 kW	12 V, 1.2 kW
Starting Support Device		By glow plug in combustion chamber		
Battery		12 V, 35 AH equivalent	12 V, 65 AH equivalent	12 V, 75 AH equivalent
Charging Alternator		12 V, 360 W		
Fuel		Diesel Fuel No.2-D (ASTM D975)		
Lubricating Oil		Class CF lubricating oil as per API classification is recommended. If this class of lubricating oil is not available, preferably use Class CD or CE lubricating oil. For details on recommended lubricating oils, see page G-6, 9.		
Lubricating Oil Capacity (Oil Pan Depth)		5.1 L (1.35 U.S.gals) (125 mm, 4.92 in.)		6.7 L (1.77 U.S.gals) (130 mm 5.12 in.)
Weight kg (lbs)		89 (196.2)		106 (233.7)

* The specification described above is of the standard engine of each model.

* Conversion Formula : HP = 0.746 kW, PS = 0.7355 kW

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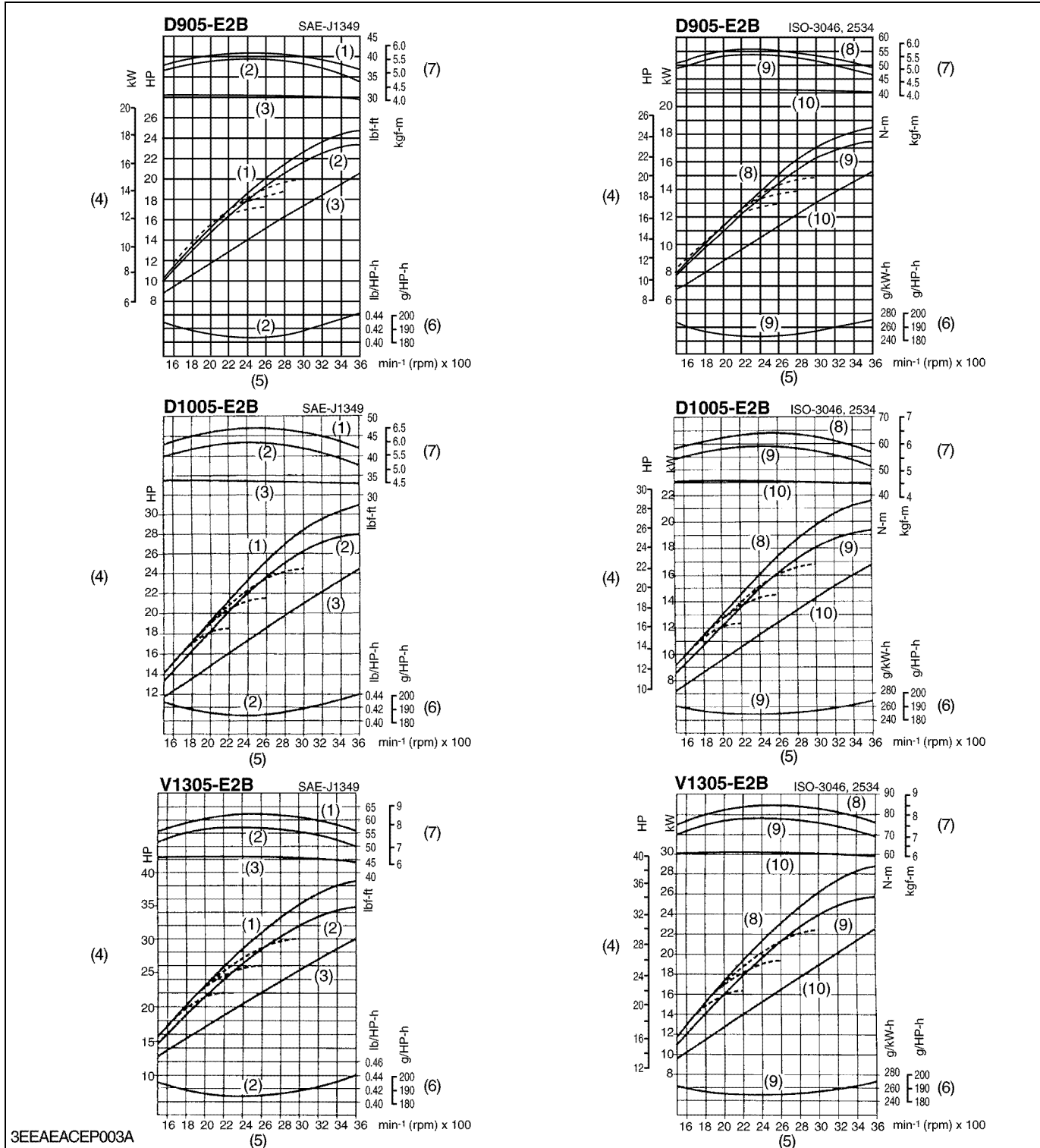
Model		D1105-E2BG		V1505-E2BG	
		BG1		BG1	
Number of Cylinders		3		4	
Type		Vertical, Water-cooled, 4 cycle diesel engine			
Bore × Stroke		mm (in.) 78 × 78.4 (3.07 × 3.09)			
Total Displacement		cm ³ (cu.in.) 1123 (68.53)		1498 (91.41)	
STAND-BY	ISO 3046	kW/min ⁻¹ (rpm) 11.5 / 1800		15.1 / 1800	
	SAE J-1349	(HP/min ⁻¹ (rpm)) 15.4 / 1800		20.2 / 1800	
NET CONT.	ISO 3046	kW/min ⁻¹ (rpm) 10.1 / 1800		13.4 / 1800	
	SAE J-1349	(HP/min ⁻¹ (rpm)) 13.6 / 1800		17.9 / 1800	
Governor Regulation		Less than 5 %			
Combustion Chamber		Spherical type (E-TVCS)			
Fuel Injection Pump		Bosch type			
Governor		All speed mechanical governor			
Direction of Rotation		Counter-clockwise (viewed from flywheel side)			
Injection Nozzle		Bosch "Throttle" type			
Injection Timing		0.29 rad (16.5 °) before T.D.C.			
Firing Order		1-2-3		1-3-4-2	
Injection Pressure		13.73 MPa (140 kgf/cm ² , 1991 psi)			
Compression Ratio		24 : 1			
Lubricating System		Forced lubrication by trochoid pump			
Oil Pressure Indicating		Electrical type switch			
Lubricating Filter		Full flow paper filter (Cartridge type)			
Cooling System		Pressurized radiator, forced circulation with water pump			
Starting System		Electric Starting with Starter			
Starting Motor		12 V, 1.0 kW		12 V, 1.2 kW	
Starting Support Device		By glow plug in combustion chamber			
Battery		12 V, 65 AH equivalent		12 V, 70 AH equivalent	
Charging Alternator		12 V, 360 W			
Fuel		Diesel Fuel No.2-D (ASTM D975)			
Lubricating Oil		Class CF lubricating oil as per API classification is recommended. If this class of lubricating oil is not available, preferably use Class CD or CE lubricating oil. For details on recommended lubricating oils, see page G-6, 9.			
Lubricating Oil Capacity (Oil Pan Depth)		5.1 L (1.35 U.S.gals) (125 mm, 4.92 in.)		6.7 L (1.77 U.S.gals) (130 mm 5.12 in.)	
Weight		kg (lbs) 89 (196.2)		106 (233.7)	

* The specification described above is of the standard engine of each model.

* Conversion Formula : HP = 0.746 kW, PS = 0.7355 kW

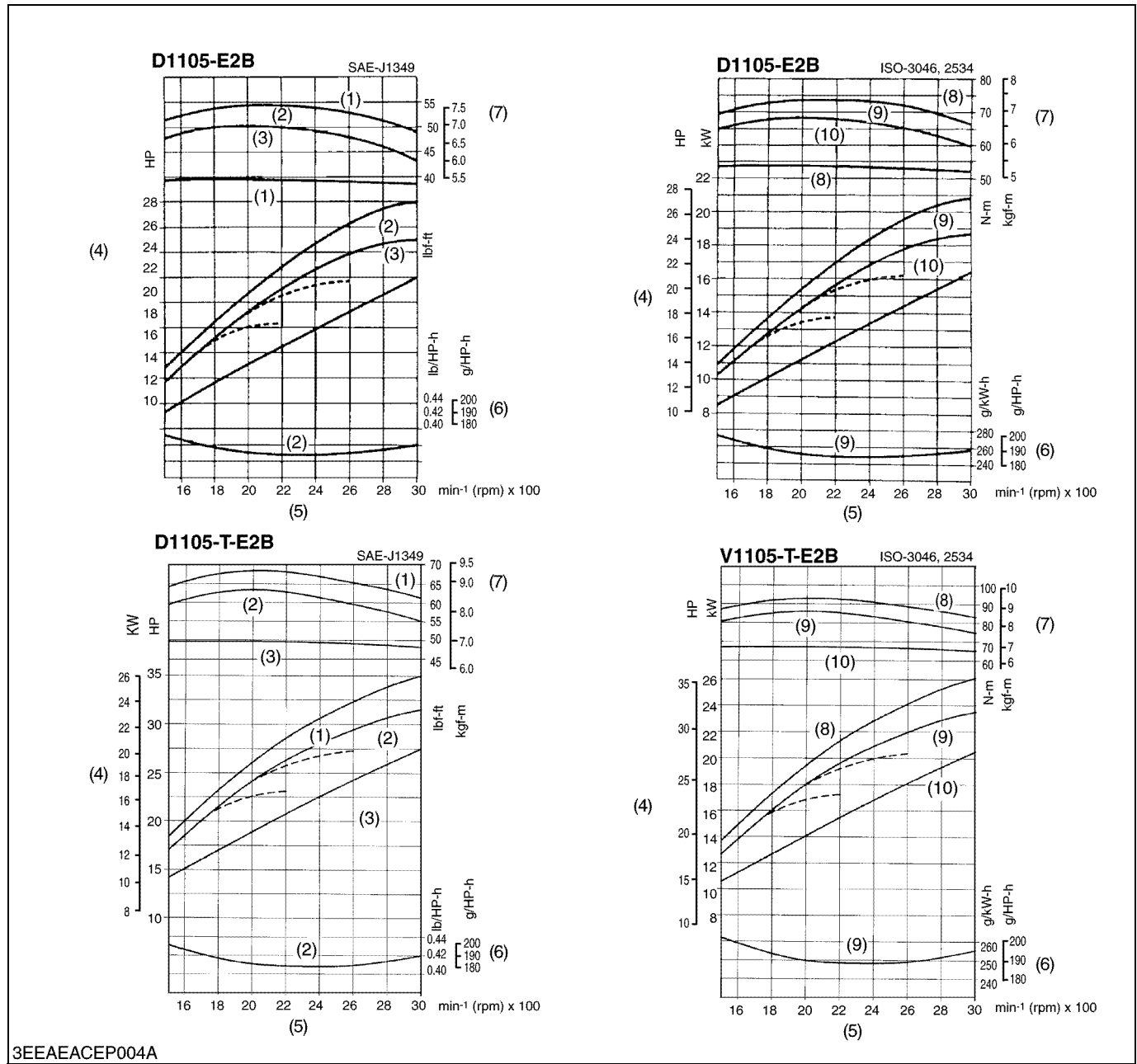
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PERFORMANCE CURVES



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- (1) Gross Int.
- (2) Net Int.
- (3) Net Cont.
- (4) Brake Horsepower
- (5) Engine Speed
- (6) Specified Fuel
- (7) Torque
- (8) Gross
- (9) Overload
- (10) Continuous



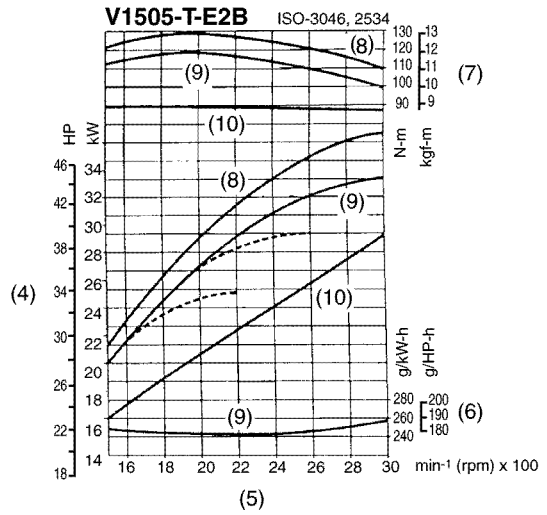
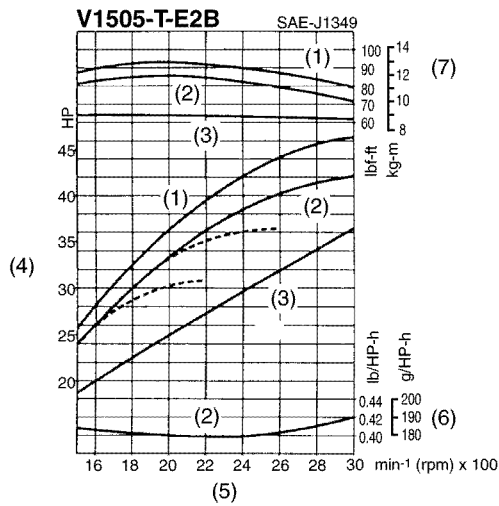
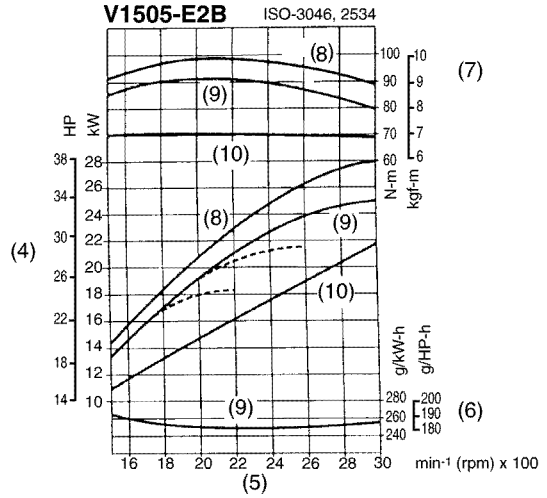
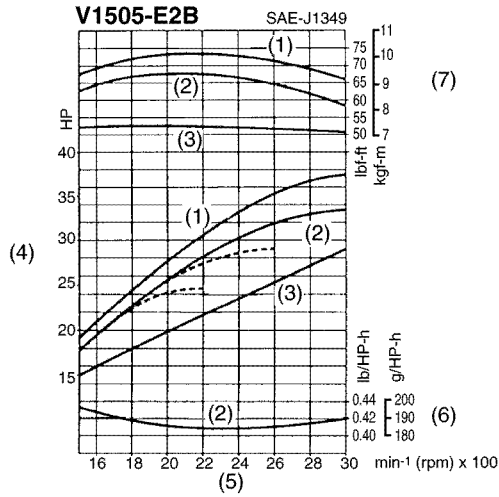
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- (1) Gross Int.
- (2) Net Int.
- (3) Net Cont.

- (4) Brake Horsepower
- (5) Engine Speed
- (6) Specified Fuel

- (7) Torque
- (8) Gross

- (9) Overload
- (10) Continuous



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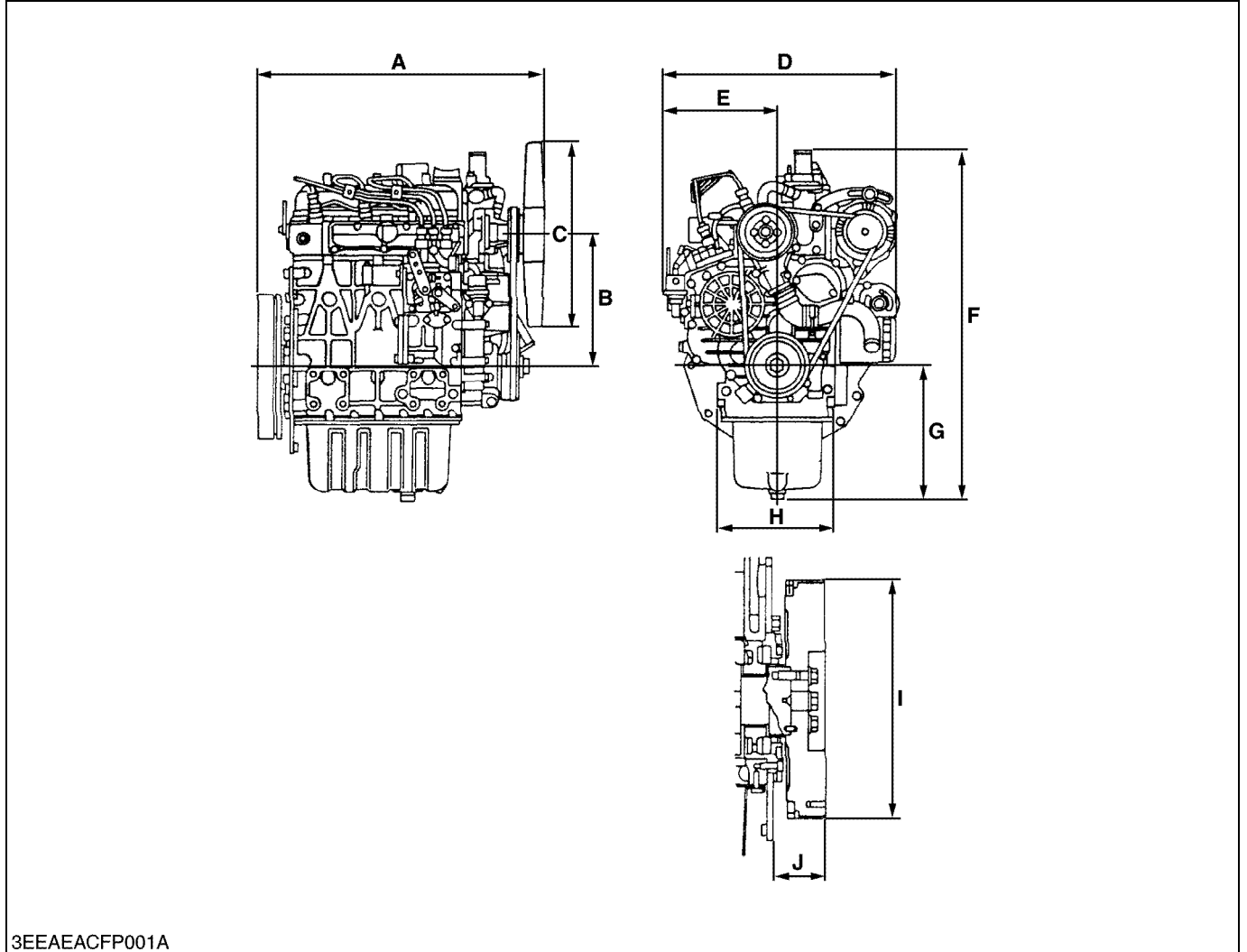
- (1) Gross Int.
- (2) Net Int.
- (3) Net Cont.

- (4) Brake Horsepower
- (5) Engine Speed
- (6) Specified Fuel

- (7) Torque
- (8) Gross

- (9) Overload
- (10) Continuous

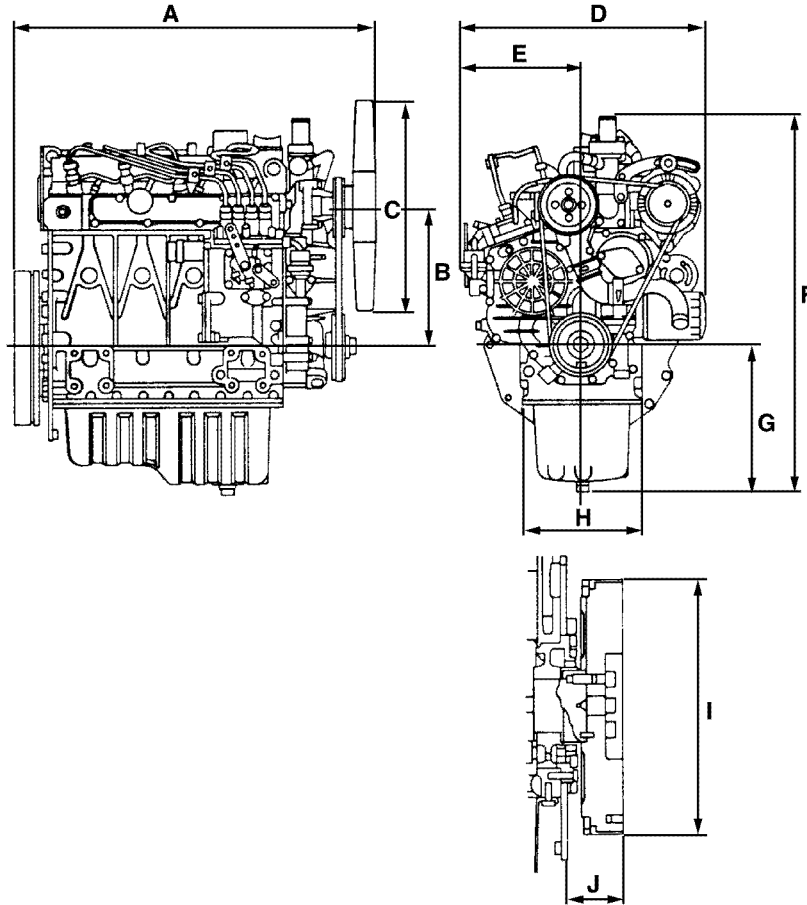
DIMENSIONS



Unit : mm (in.)

	D905-E2B	D1005-E2B	D1105-E2B	D1105-T-E2B
A	497.8 (19.60)	497.8 (19.60)	497.8 (19.60)	497.8 (19.60)
B	230 (9.06)	230 (9.06)	230 (9.06)	230 (9.06)
C	320 dia. (12.6 dia.)	330 dia. (12.99 dia.)	330 dia. (12.99 dia.)	330 dia. (12.99 dia.)
D	396 (15.59)	396 (15.59)	396 (15.59)	396 (15.59)
E	194 (7.64)	194 (7.64)	194 (7.64)	194 (7.64)
F	608.7 (23.96)	608.7 (23.96)	608.7 (23.96)	608.7 (23.96)
G	233.5 (9.19)	233.5 (9.19)	233.5 (9.19)	233.5 (9.19)
H	200 (7.87)	200 (7.87)	200 (7.87)	200 (7.87)
I	250.81 to 251.12 dia. (9.874 to 9.887 dia.)	250.81 to 251.12 dia. (9.874 to 9.887 dia.)	250.81 to 251.12 dia. (9.874 to 9.887 dia.)	250.81 to 251.12 dia. (9.874 to 9.887 dia.)
J	56 (2.20)	56 (2.20)	56 (2.20)	56 (2.20)

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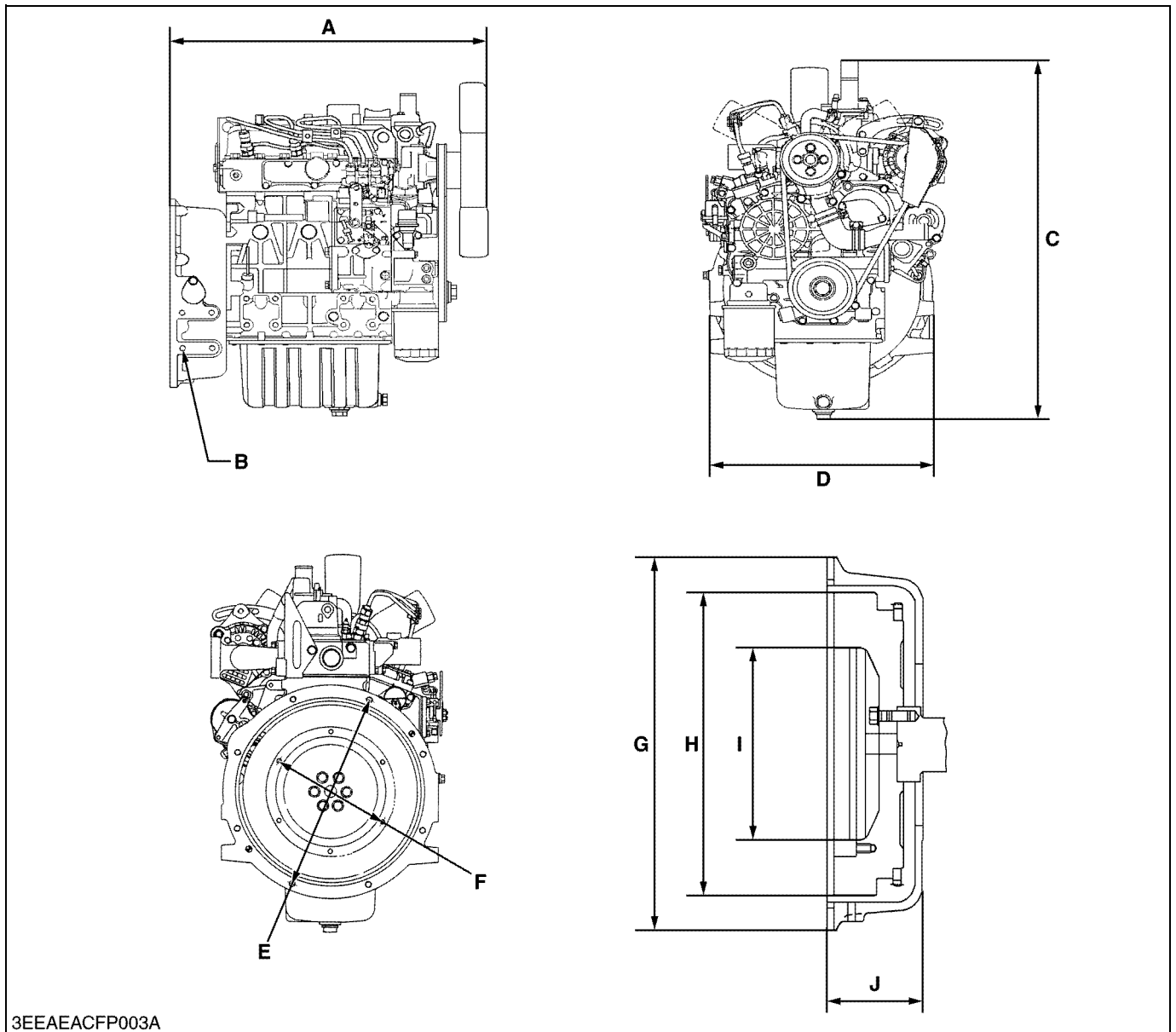


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Unit : mm (in.)

	V1305-E2B	V1505-E2B	V1505-T-E2B
A	583.8 (22.98)	591.3 (23.28)	591.3 (23.28)
B	230 (9.06)	230 (9.06)	230 (9.06)
C	350 dia. (13.78 dia.)	370 dia. (14.57 dia.)	370 dia. (14.57 dia.)
D	396 (15.59)	396 (15.59)	396 (15.59)
E	194 (7.64)	194 (7.64)	194 (7.64)
F	613.7 (24.16)	613.7 (24.16)	629.3 (24.16)
G	238.5 (9.39)	238.5 (9.39)	238.5 (9.39)
H	200 (7.87)	200 (7.87)	200 (7.87)
I	250.81 to 251.12 dia. (9.874 to 9.887 dia.)	250.81 to 251.12 dia. (9.874 to 9.887 dia.)	250.81 to 251.12 dia. (9.874 to 9.887 dia.)
J	56 (2.20)	56 (2.20)	56 (2.20)

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Unit : mm (in.)

	D905-E2BG	D1005-E2BG	D1105-E2BG	V1305-E2BG	V1505-E2BG
A	546.6 (21.52)	546.6 (21.52)	546.6 (21.52)	634.3 (24.97)	634.3 (24.97)
B	4-3/8-16 UNC-2B Depth 16 (0.63)	4-3/8-16 UNC-2B Depth 16 (0.63)	4-3/8-16 UNC-2B Depth 16 (0.63)	4-3/8-16 UNC-2B Depth 16 (0.63)	4-3/8-16 UNC-2B Depth 16 (0.63)
C	608.7 (23.96)	608.7 (23.96)	608.7 (23.96)	613.7 (24.16)	613.7 (24.16)
D	360 (14.17)	360 (14.17)	360 (14.17)	360 (14.17)	360 (14.17)
E	333.38 dia. (13.13 dia.)	333.38 dia. (13.13 dia.)	333.38 dia. (13.13 dia.)	333.38 dia. (13.13 dia.)	333.38 dia. (13.13 dia.)
F	200.02 dia. (7.87 dia.)	200.02 dia. (7.87 dia.)	200.02 dia. (7.87 dia.)	200.02 dia. (7.87 dia.)	200.02 dia. (7.87 dia.)
G	356 dia. (14.02 dia.)	356 dia. (14.02 dia.)	356 dia. (14.02 dia.)	356 dia. (14.02 dia.)	356 dia. (14.02 dia.)
H	290 dia. (11.42 dia.)	290 dia. (11.42 dia.)	290 dia. (11.42 dia.)	290 dia. (11.42 dia.)	290 dia. (11.42 dia.)
I	184.2 dia. (7.25 dia.)	184.2 dia. (7.25 dia.)	184.2 dia. (7.25 dia.)	184.2 dia. (7.25 dia.)	184.2 dia. (7.25 dia.)
J	98 dia. (3.86 dia.)	98 dia. (3.86 dia.)	98 dia. (3.86 dia.)	98 dia. (3.86 dia.)	98 dia. (3.86 dia.)