






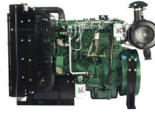

VARIABLE SPEED DIESEL ENGINES

		FUEL										DIESEL								
		COOLING										AIR COOLED			LIQUID COOLED					
Key to Emissions Compliance:																				
EU Stage 3A only		AC1		K172		LT1		TR2		PH1		LPW3		LPWT4						
USA EPA Interim Tier 4 only		A Series		K Series		L Series		T Series		PH Classic		ALPHA								
EU Stage 3A, USA EPA Interim Tier 4		AD1		K164		LV1		TR1		PH2		LPW2		LPW4						
EU Stage 3A, India GSR 448(E)		V		V		V		V		V		V		V						
EU Stage 3A, USA EPA Interim Tier 4 and India GSR 448(E)		1500		2000		1000		1500		1500		1500		1500						
		3600		3600		3000		2500		1800		3600		3000						
Number of cylinders		1 L		1		1 L		1 L		1 L		2 L		4 L						
L=in-line; H=horizontal		1 L		1		1 L		1 L		1 L		2 L		4 L						
Bore (mm)		76		86		83		98		87.5		86		86						
		2.99		3.15		3.07		3.25		3.44		3.39		3.39						
Stroke (mm)		67		72		76		102		110		80		80						
		2.64		2.87		3.00		4.00		4.33		3.15		3.15						
Displacement per cylinder		0.30		0.37		0.305		0.41		0.662		0.47		0.47						
		18.3		22.6		18.6		25.5		40.4		28.7		28.7						
Injection:		Direct		Direct		Direct		Direct		Direct		Direct								
D=direct; I=indirect		Natural		Natural		Natural		Natural		Natural		Natural		T						
Aspiration: N=natural;		H (RE)		H (RE)		R (E)		R (E)		H (E)		H (E)		E						
T=turbo; I=intercooled		H (RE)		H (RE)		R (E)		R (E)		H (E)		H (E)		E						
Starting: H=hand;		H (RE)		H (RE)		R (E)		R (E)		H (E)		H (E)		E						
R=rope; E= electric; ()=optional		H (RE)		H (RE)		R (E)		R (E)		H (E)		H (E)		E						
Variable Speed Builds	Outputs to ISO 3046	1500 r/min	Continuous	kW	2.1	2.5			3.0	3.5	5.5	11.0	16.8	5.5	11.0	6.8	10.3	13.6	20.7	
			bhp	2.8	3.4			4.0	4.8	7.4	14.8	22.5	7.5	15.0	9.1	13.8	18.2	27.7		
		Fuel Stop	kW	2.3	2.8			3.3	3.9	6.1	12.1	18.5	6.1	12.2	7.5	11.3	15.0	22.3		
			bhp	3.1	3.7			4.4	5.2	8.2	16.2	24.8	8.2	16.4	10.0	15.1	20.1	29.9		
		1800 r/min	Continuous	kW	2.4	2.4			3.6	4.3	6.7	13.1	20.2	6.6	13.2	8.5	12.8	17.0	26.4	
			bhp	3.2	3.2			4.8	5.8	9.0	17.6	27.1	11.4	18.0	11.4	17.2	22.7	35.3		
		Fuel Stop	kW	2.7	3.3			4.0	4.7	7.4	14.4	22.2	7.3	14.6	9.4	14.1	18.7	28.5		
			bhp	3.6	4.4			5.3	6.3	9.9	19.3	29.8	9.9	19.8	12.6	18.9	25.1	38.2		
		2000 r/min	Continuous	kW	2.8	3.4	2.12		3.18		4.0	4.8	7.3	14.5	22.2		9.6	14.5	19.3	28.7
			bhp	3.8	4.6	2.84		4.27		5.4	6.4	9.8	19.4	29.8		12.9	19.4	25.9	38.5	
		Fuel Stop	kW	3.1	3.7	2.33		3.50		4.4	5.3	8.0	16.0	24.4		10.6	15.9	21.2	31.0	
			bhp	4.2	5.0	3.12		5.69		5.9	7.0	10.7	21.5	32.7		14.2	21.3	28.4	41.5	
	2500 r/min	Continuous	kW	3.7	4.3	2.75	2.54	4.28	3.95	5.0	5.8	8.6	17.3	25.9		11.8	17.7	23.6	34.3	
		bhp	5.0	5.8	3.69	3.35	5.74	5.3	6.7	7.8	11.5	23.2	34.7		15.8	23.7	31.6	46.0		
	Fuel Stop	kW	4.1	4.8	3.02	2.80	4.69	4.35	5.5	6.4	9.5	19.0	28.5		13.0	19.5	26.0	36.7		
		bhp	5.5	6.4	4.05	3.68	6.29	5.84	7.4	8.6	12.7	25.5	38.2		17.4	26.1	34.8	49.1		
	3000 r/min	Continuous	kW	4.5	5.3	3.34	3.07	5.18	4.92	5.6	6.7					13.4	20.1	26.8	37.5	
		bhp	6.0	7.1	4.47	4.12	6.95	6.59	7.5	9.0					18.0	27.0	35.9	50.2		
	Fuel Stop	kW	4.9	5.8	3.68	3.38	5.70	5.41	6.2	7.4					14.7	22.1	29.5	40.2		
		bhp	6.6	7.8	4.92	4.53	7.64	7.25	8.3	9.9					19.7	29.6	39.5	53.9		
	3600 r/min	Continuous	kW				3.64		5.72											
		bhp				4.88		7.68												
	Fuel Stop	kW				4.0		6.30												
		bhp				5.36		8.44												
Max. torque (V-build only)		Nm	15.7	18.6	11.77	18.36	21.0	25.0	39.2	77.0	118	38.8	77.7	50.6	75.9	102	151			
		lbf ft	11.6	13.7	8.65	13.5	15.5	18.5	28.9	56.8	86.9	28.6	57.3	37.3	56.0	75.1	112			
Max. BMEP (bar)			5.3	5.8	4.83	5.90	6.0	6.2	5.9	5.9	6.4	7.37	7.40	6.4	6.4	6.4	8.9			
Maximum dry weight [2]		kg	47.0	53.0	33	47	92	92	153	185	230	180	265	112	150	180	186			
		lb	103	117	72.6	103.4	203	203	337	408	507	396	583	247	330	396	409			
Max dimension(L=length [3],		mm	458 H	509 H	450 H	495 H	503 H	503 H	683 H	683 H	698 L	795 H	895 H	574 H	596 L	696 L	786 L			
W=width, H=height)		in.	18.0 H	20.0 H	17.72	19.49	19.8 H	19.8 H	26.9 H	26.9 H	27.5 L	31.3H	35.2H	22.6 H	23.5 L	27.4 L	30.9 L			





VARIABLE SPEED DIESEL ENGINES

		FUEL			DIESEL														
		COOLING			LIQUID COOLED														
Key to Emissions Compliance:																			
EU Stage 3A only					LPWS4		SW20		DWS4		GWTA6		OWTA6						
USA EPA Interim Tier 4 only					ALPHA (EPA)		SIGMA			DELTA	GAMMA			OMEGA					
EU Stage 3A, USA EPA Interim Tier 4					LPWS2		LPWS3	LPWS4	SW20	SW25	SW30	DWS4	GW4	GWT4	GWT62A	GWTA6	OWT6	OWTA6	
EU Stage 3A, India GSR 448(E)					V		V		V		V		V		V		V		
EU Stage 3A, USA EPA Interim Tier 4 and India GSR 448(E)					1500		1500	1500	1500	1500	1500	1200	1500	1500	1500	1500	1100	1100	
					3000		3000	3000	2000	2200	2200	2500	2200	2200	2200	2200	2200	2200	
Number of cylinders					2L		3L	4L	3L	3L	4L	4 L	4 L	4 L	6 L	6 L	6 L	6 L	
L=in-line; H=horizontal																			
Bore (mm)					86		86	86	91	105	105 ⁵	94	100	100	100	100	126	126	
					in.		3.39	3.39	3.39	3.60	4.13	4.13	3.70	3.94	3.94	3.94	3.94	4.96	4.96
Stroke (mm)					80		80	80	127	110	110	120	127	127	127	127	130	130	
					in.		3.15	3.15	3.15	5	4.33	4.33	4.72	5.00	5.00	5.00	5.12	5.12	
Displacement per cylinder					litres		0.47	0.47	0.47	0.83	0.95	0.95	0.83	0.99	0.99	0.99	1.62	1.62	
					in. ³		28.7	28.7	28.7	50.8	58.1	58.1	50.1	60.4	60.4	60.4	98.8	98.8	
Injection:					Indirect			Direct			I	Direct			Direct				
D=direct; I=indirect																			
Aspiration: N=natural;					Natural			Natural			N	N	T	T	T, I	T	T, I		
T=turbo; I=intercooled																			
Starting: H=hand;					E	E	E	E	E	E	E	E	E	E	E	E	E	E	
R=rope; E= electric; ()=optional																			
Variable Speed Builds	Outputs to ISO 3046	1500 r/min	Continuous	kW	7.4	11.1	14.7	21.8	26.4	30.9	28.7	36.4	54.5	76.4	92.7	138	203		
			Fuel Stop	bhp	9.9	14.9	19.7	29.3	35.4	44.2	38.5	48.7	73.1	102	124	185	272		
		1800 r/min	Continuous	kW	8.1	12.2	16.2	24.0	29.0	34.0	31.6	40	60	84	102	152	223		
			Fuel Stop	bhp	10.9	16.4	21.7	32.2	38.9	48.6	42.4	53.6	80.4	112.6	138	204	299		
		2000 r/min	Continuous	kW	9.1	13.6	18.2												
			Fuel Stop	bhp	12.2	18.2	24.4												
		2500 r/min	Continuous	kW	10.0	15.0	20.0												
			Fuel Stop	bhp	13.4	20.1	26.8												
		3000 r/min	Continuous	kW	10.1	15.2	20.2	26.1	32.2	36.4	36.6	39.0	61.8	89.1	109.5	160	238		
			Fuel Stop	bhp	13.5	20.4	27.0	35.0	43.2	48.7	49.1	52.4	82.8	119.4	146.8	214	319		
		Variable Speed Builds	Outputs to ISO 3046	2000 r/min	Continuous	kW	11.1	16.7	22.2	28.7	35.4	40.0	40.3	43	68	98.0	120.5	176	262
					Fuel Stop	bhp	14.9	22.3	30.0	38.5	47.5	53.6	54.0	57.6	91.1	131.3	161.5	236	351
	Variable Speed Builds	Outputs to ISO 3046	2500 r/min	Continuous	kW	12.2	18.3	24.4	N/A	33.1 ⁽⁴⁾	38.2 ⁽⁴⁾	44.1	43.6 ⁽⁴⁾	65.6 ⁽⁴⁾	90.9 ⁽⁴⁾	113 ⁽⁴⁾	160 ⁽⁴⁾	244 ⁽⁴⁾	
				Fuel Stop	bhp	16.3	24.5	32.7	N/A	44.4 ⁽⁴⁾	51.2 ⁽⁴⁾	59.1	58.5 ⁽⁴⁾	85.3 ⁽⁴⁾	121.8 ⁽⁴⁾	151 ⁽⁴⁾	214 ⁽⁴⁾	327 ⁽⁴⁾	
	Variable Speed Builds	Outputs to ISO 3046	3000 r/min	Continuous	kW	13.4	20.1	26.8	36.4 ⁽⁴⁾	42.0 ⁽⁴⁾	48.5	48.0 ⁽⁴⁾	70.0 ⁽⁴⁾	100.0 ⁽⁴⁾	124 ⁽⁴⁾	176 ⁽⁴⁾	268 ⁽⁴⁾		
				Fuel Stop	bhp	18.0	26.9	35.9	48.8 ⁽⁴⁾	56.3 ⁽⁴⁾	65.0	64.3 ⁽⁴⁾	93.8 ⁽⁴⁾	134.0 ⁽⁴⁾	166 ⁽⁴⁾	236 ⁽⁴⁾	358 ⁽⁴⁾		
	Max. torque (V-build only)			Nm	53.1	79.7	106	149	185	215	201.2	253	380	532	645	985	1471		
				lbf ft	39.2	58.8	78.3	110	136	158	148	188	281	394	475	727	1085		
	Max. BMEP (bar)				6.4	6.4	6.4	7.0	7.0	6.5	7.6	7.21	11.9	11.18	13.5	9.1	14.9		
	Maximum dry weight ⁽²⁾			kg	112	150	180	340	415	450	245	409	560	710	760	850	900		
				lb	247	330	396	750	915	992	539	902	1213	1562	1672	1874	1984		
	Max dimension(L=length ⁽³⁾ , W=width, H=height)			mm	574 H	596 L	696 L	947L	1065	1160L	781 L	1260 L	1250 L	1600 L	1610 L	1750 L	1950 L		
				in.	22.6 H	23.5 L	27.4 L	37.3L	41.9	45.7L	30.7 L	49.6 L	49.0 L	63.0 L	63.4L	69.0L	76.9 L		

