

## FM - APPROVED RATINGS BHP & KW

<b>ENGINE MODEL:</b>	AF6-135B
<b>EMISSIONS:</b>	TIER 0
<b>DATE:</b>	09/01/2020
<b>DRAWING NUMBER:</b>	AF6-135.00
<b>PERFORMANCE CURVE NUMBER:</b>	C06135BF
<b>RATED POWER:</b>	338 BHP @ 1760 RPM 252 KW @ 1760 RPM
<b>REFERENCE NUMBER:</b>	14DS001E
<b>VERSION:</b>	A



## GENERAL ENGINE DATA

TYPE:	4 CYCLE; INLINE; WATER COOLED	
NUMBER OF CYLINDERS:	6	
ASPIRATION:	TURBOCHARGED + WATER COOLED	
BORE & STROKE - IN [MM]:	5.32 x 5.91 [135 x 150]	
CYLINDER LINER TYPE:	<input checked="" type="checkbox"/> WET <input type="checkbox"/> DRY	
DISPLACEMENT - IN <sup>3</sup> [L]:	786 [12.88]	
COMPRESSION RATIO:	15.75:01	
FIRING ORDER:	1 - 5 - 3 - 6 - 2 - 4	
COMBUSTION SYSTEM:	DIRECT INJECTION	
ROTATION (AS VIEWED FROM FRONT OF ENGINE):	CCW	
VALVES PER CYLINDER:	INTAKE: 1   EXHAUST: 1	
VALVE LASH (COLD ENGINE):	INTAKE - IN [MM]:	0.013 [0.325]
	EXHAUST - IN [MM]:	0.015 [0.375]
IGNITION TYPE:	COMPRESSION (DIESEL)	
CHARGE AIR COOLING TYPE:	RAW WATER	
WEIGHT (FUEL PUMP CONFIGURATION) - LBS [KG]:	3263 [1480]	
DIMENSIONS (L x W x H) - IN [MM]:	72 x 43 x 60 [1835 x 1085 x 1529]	
FLYWHEEL / FLYWHEEL HOUSING DIMENSIONS:	14.00 / SAE #1	
TORQUE @ RATED RPM - LB-FT [N-M]:	1120 [1519]	

## ENGINE PERFORMANCE DATA

ESTIMATED FREE FIELD SOUND PRESSURE LEVEL AT 3 FEET [1 METER] WITH FULL-LOAD GOVERNED SPEED (INCLUDES NOISE FROM EXHAUST, COOLING SYSTEM AND DRIVEN COMPONENTS)	dBa	≤ 108
ALL DATA IS BASED ON ENGINE OPERATING WITH FUEL SYSTEM, LUBRICATING OIL PUMP, AIR CLEANER AND ALTERNATOR. DOES NOT INCLUDE AIR COMPRESSOR, FAN & OPTIONAL EQUIPMENT. DATA IS BASED ON SAE STANDARD J1349 CONDITIONS AT 300 FEET [91.4 METERS] ALTITUDE, 29.61 INCHES [752 MILLIMETERS] HG DRY BAROMETER AND 77°F [25°C] INTAKE AIR TEMPERATURE USING #0 DIESEL FUEL FOLLOWING THE GB 252-2011 STANDARD.		
ALTITUDE ABOVE WHICH OUTPUT SHOULD BE DERATED:	FEET [METER]	300 [91]
DERATE PER 1,000 FEET [305 METERS] ABOVE ALTITUDE LIMIT:	3%	
TEMPERATURE ABOVE WHICH OUTPUT SHOULD BE DERATED:	°F [°C]	77 [25]
DERATE PER 10°F [5.6°C] ABOVE TEMPERATURE LIMIT:	1%	

● ALL DATA CERTIFIED WITHIN ±5%.

**EXHAUST SYSTEM**

EXHAUST GAS TEMPERATURE @ MAXIMUM RATING (POWER) - °F [°C]:	≤ 1112 [600] @ 1760 RPM
EXHAUST GAS FLOW @ MAXIMUM OUTPUT - CFM [M <sup>3</sup> /HR]:	2129 [3618] @ 1760 RPM
MAXIMUM ALLOWABLE BACK PRESSURE - PSI [KPA]:	1.16 [8]
MINIMUM EXHAUST PIPE DIAMETER - IN [MM]:	5 [125]

**AIR INTAKE SYSTEM**

AIR CLEANER TYPE:	DRY TYPE, DISPOSABLE
AIR FLOW - CFM [M <sup>3</sup> /HR]:	904 [1536] @ 1760 RPM
AIR INLET RESTRICTION - PSI [KPA]:	≤ 0.87 [6]

**LUBRICATION SYSTEM**

OIL CAPACITY (ENGINE ONLY) - QTS [L]:	33.8 [32]
MAXIMUM SUMP OIL TEMPERATURE - °F [°C]:	176 ~ 239 [80 ~ 115]
NORMAL OPERATING OIL PRESSURE RANGE - PSI [BAR]:	58.0 ~ 87.0 [4.0 ~ 6.0]
OIL PRESSURE @ IDLE - PSI [BAR]:	> 2.2 [0.15]

**COOLING SYSTEM**

COOLANT CAPACITY (ENGINE & HEAT EXCHANGER) - QTS [L]:	50.7 [48]	
THERMOSTAT RANGE:	START OPEN - °F [°C]:	171 [77]
	FULL OPEN - °F [°C]:	194 [90]
COOLANT PRESSURE MAXIMUM - PSI [BAR]:	13 [0.9]	
RAW WATER PRESSURE RANGE @ HEAT EXCHANGER - PSI [BAR]:	72.5 [5]	
ENGINE NORMAL OPERATING COOLANT TEMPERATURE - °F [°C]:	171 ~ 203 [77 ~ 95]	
RAW WATER COOLING FLOW RATE - GPM [M <sup>3</sup> /HR]:	119 [27]	
MINIMUM RAW WATER FLOW @ ENGINE SPEED (RPM)	1470	1760
RAW WATER TEMPERATURES TO 60.8°F [16°C] - GPM [M <sup>3</sup> /HR]:	35.2 [8.0]	39.6 [9.0]
RAW WATER TEMPERATURES TO 100.4°F [38°C] - GPM [M <sup>3</sup> /HR]:	44.0 [10.0]	52.8 [12.0]
RAW WATER INTAKE PIPE SIZE:	RAW WATER INLET - IN:	1.50 NPT
	RAW WATER OUTLET - IN:	2.00 NPT

**HEATER SYSTEM**

WATTAGE - W:	4500
VOLTAGE (AC) - V:	220

**DC ELECTRICAL SYSTEM**

NORMAL SYSTEM VOLTAGE - V:	24
STARTER MOTOR - HP [KW]:	11.4 [8.5]
RECOMMENDED BATTERY SIZE - AH:	180
COLD CRANKING AMPS @ 0°F (-18°C):	950
CHARGING ALTERNATOR OUTPUT - AMPS:	55

① ALL DATA CERTIFIED WITHIN ±5%.

**FUEL SYSTEM**

INJECTION PUMP:	INLINE, PLUNGER TYPE
INJECTION PUMP ADVANCE ANGLE - °:	14.5
MINIMUM SUPPLY LINE SIZE - IN [MM]:	0.50 [12]
MINIMUM RETURN LINE SIZE - IN [MM]:	0.50 [12]
FUEL MANAGEMENT CONTROL:	MECHANICAL
IDLE SPEED - RPM:	750
GOVERNED SPEED RATE - %:	< 10

① ALL DATA CERTIFIED WITHIN  $\pm 5\%$ .



**ENGINE MATERIALS & CONSTRUCTION**

ENGINE		AIR INTAKE	
<b>CAMSHAFT:</b>		<b>AIR CLEANER:</b>	
TYPE	OVERHEAD	TYPE	DRIP PROOF
MATERIAL	CARBON STEEL	MATERIAL	PLEATED PAPER
LOCATION	IN BLOCK	<b>COOLING SYSTEM</b>	
DRIVE	SPUR GEAR	<b>COOLANT HEAT EXCHANGER:</b>	
<b>CONNECTING RODS:</b>		TYPE	TUBE & SHELL
TYPE	I-BEAM, FRACTURE	MATERIAL	
MATERIAL	FORGED STEEL	ELECTRODE	ZINC
<b>CRANKSHAFT:</b>		HEADERS	ALUMINUM
TYPE	GROUND	SHELL	ALUMINUM
MATERIAL	DUCTILE IRON	TUBES	COPPER
<b>MAIN BEARINGS:</b>		<b>COOLANT PUMP:</b>	
TYPE	PRECISION, HALF SHELL	TYPE	CENTRIFUGAL
MATERIAL	TIM ALUMINUM ALLOY	DRIVE	V-BELT
<b>CYLINDER BLOCK:</b>		<b>THERMOSTAT:</b>	
TYPE	GANTRY	TYPE	NON-BLOCKING
MATERIAL	CAST IRON	QUANTITY	1
<b>CYLINDER HEAD:</b>		<b>COOLING LOOP (GALVANIZED):</b>	
TYPE	ONE PIECE	TEES, ELBOWS, PIPE	GALVANIZED STEEL
MATERIAL	CAST IRON	BALL VALVES	BRASS
<b>CYLINDER LINERS:</b>		SOLENOID VALVE	BRASS
TYPE	WET LINED	PRESSURE REGULATOR	BRASS
MATERIAL	CAST IRON ALLOY	STRAINER	BRASS
<b>PISTONS:</b>		<b>COOLING LOOP (316 STAINLESS STEEL):</b>	
TYPE	TRUNK	TEES, ELBOWS, PIPE	316 STAINLESS STEEL
MATERIAL	ALUMINUM ALLOY	BALL VALVES	316 STAINLESS STEEL
<b>PISTON PINS:</b>		SOLENOID VALVE	316 STAINLESS STEEL
TYPE	FULL FLOATING	PRESSURE REGULATOR	316 STAINLESS STEEL
MATERIAL	ALLOY STEEL	STRAINER	316 STAINLESS STEEL
<b>PISTON RINGS:</b>		<b>FUEL SYSTEM</b>	
FIRST	DUCTILE CAST IRON	<b>FUEL INJECTION PUMP:</b>	
SECOND	ALLOY CAST IRON	TYPE	FULL MECHANICAL, CENTRIFUGAL
THIRD	ALLOY CAST IRON	DRIVE	GEAR DRIVEN
<b>VALVES:</b>		<b>LUBRICATION SYSTEM</b>	
TYPE	POPPET	TYPE	GEROTOR
ARRANGEMENT	OVERHEAD	DRIVE	GEAR
VALVE # PER CYLINDER	1 INTAKE, 1 EXHAUST		
OPERATING MECHANISM	MECHANICAL ROCKER ARM		
LIFTER TYPE	LARGE HEAD		

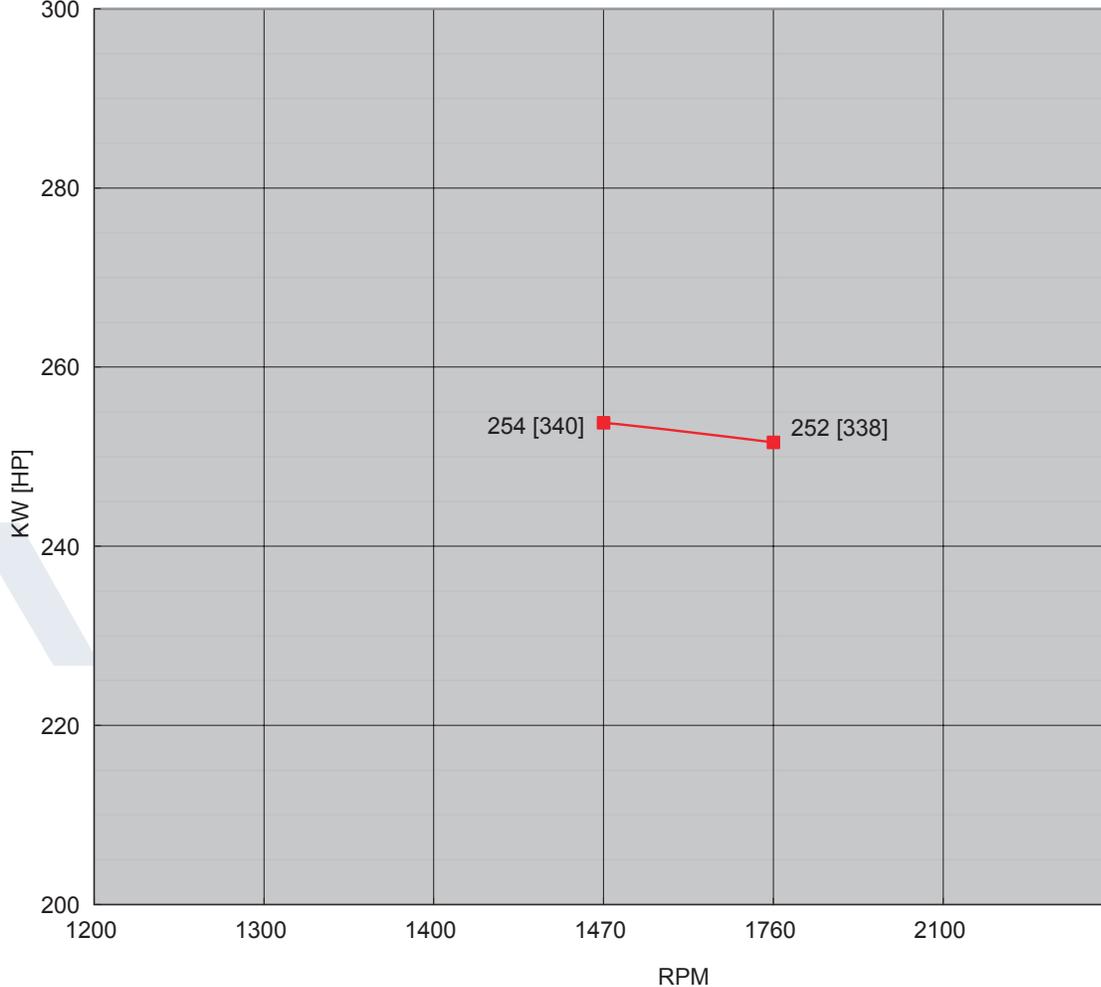
**SPARE PARTS LIST**

PART DESCRIPTION	PART NUMBER	REMARKS
AFTERCOOLER	AF120041-IC	KL9.5
HEAT EXCHANGER	AFC300ZJ-HE	MAX. WORKING PRESSURE 72.5 PSI [5 BAR]
ALTERNATOR	S00011521+01	28 V / 55 A
STARTING SYSTEM	S00022618+01	24 V / 8.5 KW
TURBOCHARGER	S00011506+02	N/A
FUEL PUMP WITH SPEED CONTROLLER	S00017756	N/A
FUEL INJECTORS	S00031759	0.30 MM
CONTROLLER	AF.ENG.AB-ETS-R-B	N/A
BATTERY	908DFT	12 V / 200 AH
EMERGENCY STARTERS	535-0098	24 VDC 800 A
OIL PRESSURE SENSOR	KE21103	11.6 ± 4.35 PSI [80 ± 30 KPA]
HIGH TEMPERATURE COOLANT SENSOR	KE00105	203 ± 37 °F [95 ± 3°C]
LOW COOLANT TEMPERATURE SENSOR	KE00108	104 ± 37 °F [40 ± 3°C]
HIGH TEMPERATURE RAW WATER SENSOR	204.040.15GO.1.IP65	104 ± 37 °F [40 ± 3°C]
FLOW SENSOR	WK150B	N/A
OVERSPEED SHUTDOWN DEVICE	YC-ENL-A0	N/A
SPEED SENSOR	KE10040	N/A
ENGINE HEATER	FH220450065	220 V / 4.5 KW MAX. TEMP 149°F [65°C]
	SH110200065	220 V / 2 KW MAX. TEMP 149°F [65°C] WITH PUMP
	SH110200065	110 V / 2 KW MAX. TEMP 149°F [65°C] WITHOUT PUMP
OIL FILTERS	D17-002-02+B	1 PIECE
FUEL FILTERS	S00010128+01	1 PIECE
AIR FILTERS	S00034176+02	1 PIECE
BELTS	1500073197	1 PIECE
THERMOSTATS	1500073215	1 PIECE
EXHAUST BLANKET	AF61350801-EI	DN80
FUEL SUPPLY & RETURN LINES	AF6-135-09.03 AF6-135-09.04	N/A

## POWER CURVE

CURVE NUMBER:	C06135F	DATE:	09/01/2020
DISPLACEMENT - IN <sup>3</sup> [L]:	786 [12.88]	ASPIRATION:	TURBOCHARGED + WATER COOLED
POWER STANDARD:	FM	BORE & STROKE - IN [MM]:	5.32 x 5.91 [135 x 150]
NUMBER OF CYLINDERS:	6	FUEL SYSTEM:	INLINE, MECHANICAL

● ALL DATA CERTIFIED WITHIN ±5%.



TORQUE		
SPEED	LB-FT	N-M
RPM		
1150		
1470	1215	1648
1760	1008	1366
2100		

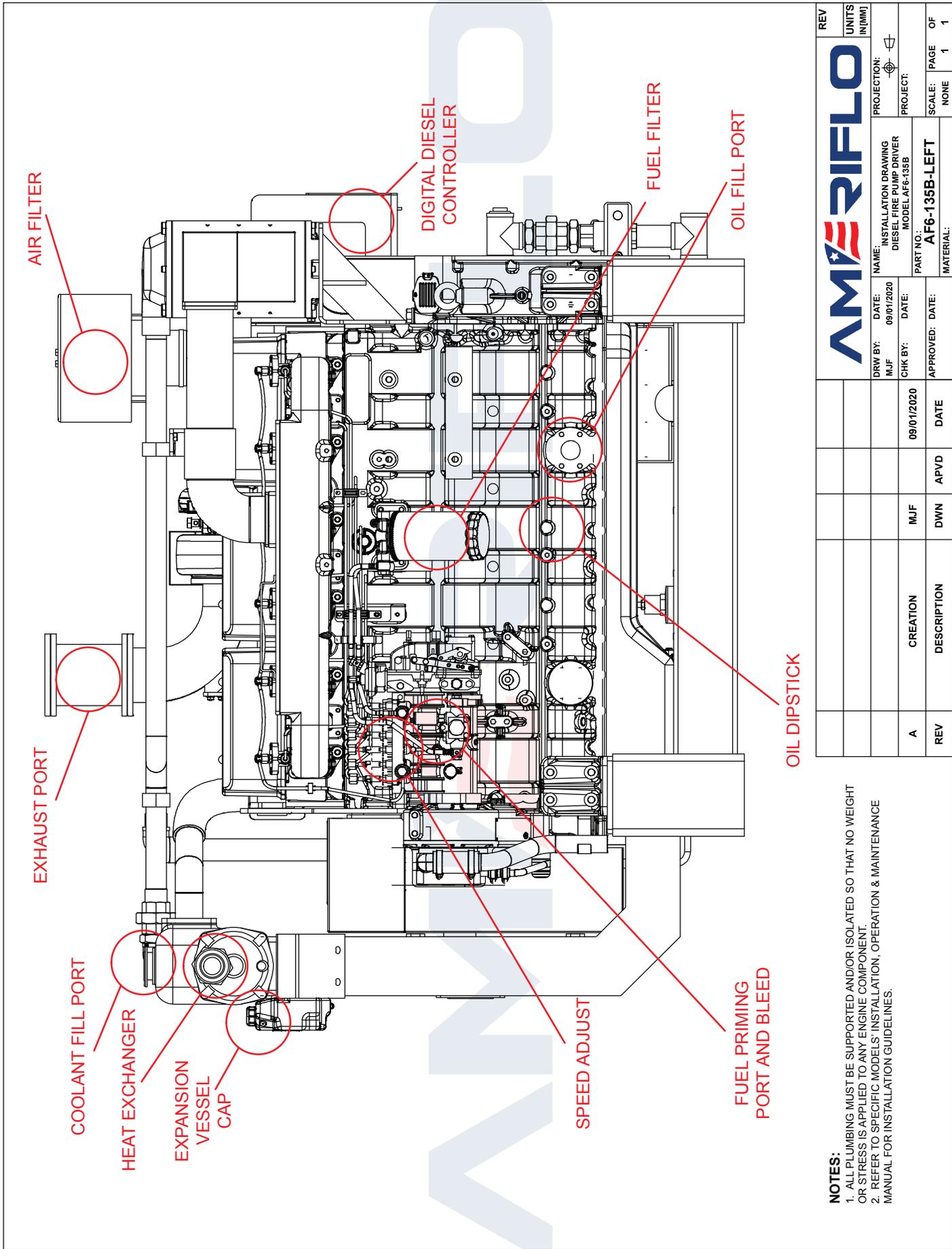
OUTPUT POWER		
SPEED	HP	KW
RPM		
1150		
1470	340	254
1760	338	252
2100		

FUEL CONSUMPTION		
SPEED	LB/BHP-HR	G/KW-HR
RPM		
1150		
1470	0.337	205
1760	0.345	210
2100		

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REV	UNITS	<b>AMERIFLO</b>	PROJECTION:	SCALE: NONE	PAGE 1	OF 1
	IN (MM)		PROJECT:			
		NAME: INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER MODEL AF6-135B	DATE: 09/01/2020	DATE: 09/01/2020		
		CHK BY: MJF	APPROVED: DATE:			
		PART NO: AF6-135B-LEFT				
		MATERIAL:				
		DESCRIPTION	DATE	APVD		
		A	09/01/2020	MJF		
		REV		DWN		

**NOTES:**  
 1. ALL PLUMBING MUST BE SUPPORTED AND/OR ISOLATED SO THAT NO WEIGHT OR STRESS IS APPLIED TO ANY ENGINE COMPONENT.  
 2. REFER TO SPECIFIC MODELS' INSTALLATION, OPERATION & MAINTENANCE MANUAL FOR INSTALLATION GUIDELINES.





