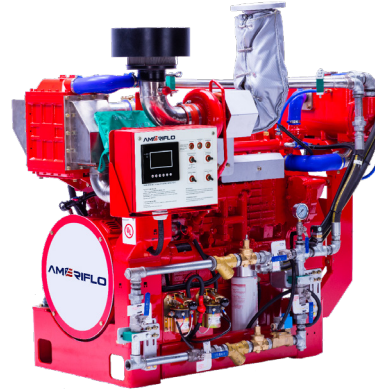


UL - cUL LISTED RATINGS BHP & KW

ENGINE MODEL:	AF6-108E
EMISSIONS:	TIER 0
DATE:	09/01/2020
DRAWING NUMBER:	AF6-108E.00
PERFORMANCE CURVE NUMBER:	C06108E
RATED POWER:	341 BHP @ 2950 RPM 254 KW @ 2950 RPM
REFERENCE NUMBER:	14DS001E
VERSION:	A



GENERAL ENGINE DATA

TYPE:	4 CYCLE; INLINE; WATER COOLED	
NUMBER OF CYLINDERS:	6	
ASPIRATION:	TURBOCHARGED + WATER COOLED	
BORE & STROKE - IN [MM]:	4.25 x 5.04 [108 x 125]	
CYLINDER LINER TYPE:	<input checked="" type="checkbox"/> WET <input type="checkbox"/> DRY	
DISPLACEMENT - IN ³ [L]:	419 [6.871]	
COMPRESSION RATIO:	17.5:01	
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]:	0.016 ~ 0.018 [0.40 ~ 0.46]
	EXHAUST - IN [MM]:	0.018 ~ 0.021 [0.46 ~ 0.52]
IGNITION TYPE:	COMPRESSION (DIESEL)	
CHARGE AIR COOLING TYPE:	RAW WATER	
WEIGHT (FUEL PUMP CONFIGURATION) - LBS [KG]:	2035 [923]	
DIMENSIONS (L x W x H) - IN [MM]:	62 x 39 x 57 [1565 x 1000 x 1460]	
FLYWHEEL / FLYWHEEL HOUSING DIMENSIONS:	11.50 / SAE #2	
TORQUE @ RATED RPM - LB-FT [N-M]:	607 [824]	

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]
EXHAUST GAS FLOW @ MAXIMUM OUTPUT - CFM [M ³ /HR]:	2066 [3510]
MAXIMUM ALLOWABLE BACK PRESSURE - PSI [KPA]:	1.45 [10]
MINIMUM EXHAUST PIPE DIAMETER - IN [MM]:	4 [100]

AIR INTAKE SYSTEM

AIR CLEANER TYPE:	DRY TYPE, DISPOSABLE
AIR FLOW - CFM [M ³ /HR]:	756 [1284]
AIR INLET RESTRICTION (DIRTY) - PSI [KPA]:	≤ 0.87 [6]
AIR INLET RESTRICTION (CLEAN) - PSI [KPA]:	≤ 0.44 [3]

LUBRICATION SYSTEM

OIL CAPACITY (ENGINE ONLY) - QTS [L]:	25.4 [24]
MAXIMUM SUMP OIL TEMPERATURE - °F [°C]:	248 [120]
NORMAL OPERATING OIL PRESSURE RANGE - PSI [BAR]:	36.3 - 87.0 [2.5 - 6.0]
OIL PRESSURE @ IDLE - PSI [BAR]:	≥ 14.5 [1.0]

COOLING SYSTEM

COOLANT CAPACITY (ENGINE & HEAT EXCHANGER) - QTS [L]:	31.7 [30]	
THERMOSTAT RANGE:	START OPEN - °F [°C]:	167 [75]
	FULL OPEN - °F [°C]:	185 [85]
COOLANT PRESSURE MAXIMUM - PSI [BAR]:	13 [0.9]	
MAXIMUM ENGINE COOLANT TEMPERATURE - °F [°C]:	≤ 208 [98]	
ENGINE COOLANT FLOW @ FULL SPEED - GPM [M ³ /HR]:	101 [23]	
RAW WATER COOLING CAPACITY - GPM [M ³ /HR]:	44 [10]	
RAW WATER PRESSURE - PSI [BAR]:	29 [2]	
MAXIMUM RAW WATER TEMPERATURE - °F [°C]:	100 [37.8]	
RAW WATER INTAKE PIPE SIZE:	RAW WATER INLET - IN:	1.00 NPT
	RAW WATER OUTLET - IN:	1.25 NPT

HEATER SYSTEM

WATTAGE - W:	2200
VOLTAGE (AC) - V:	240

DC ELECTRICAL SYSTEM

NORMAL SYSTEM VOLTAGE - V:	24
STARTER MOTOR - HP [KW]:	8.05 [6]
RECOMMENDED MINIMUM BATTERY SIZE - AH:	180
COLD CRANKING AMPS @ 0°F (-18°C):	900
RESERVE CAPACITY - AMPS:	360
CHARGING ALTERNATOR OUTPUT - AMPS:	55
STARTER CRANKING AMPS, ROLLING @ 0°F (-18°C):	330
MINIMUM CRANKING SPEED REQUIRED FOR UNAIDED COLD START - RPM:	235

● ALL DATA CERTIFIED WITHIN ±5%.

FUEL SYSTEM

INJECTION PUMP:	INLINE, PLUNGER TYPE
INJECTION PUMP ADVANCE ANGLE - °:	22
MINIMUM SUPPLY LINE SIZE - IN [MM]:	0.394 [10]
MINIMUM RETURN LINE SIZE - IN [MM]:	0.394 [10]
FUEL MANAGEMENT CONTROL:	MECHANICAL
FUEL CONSUMPTION @ 2950 RPM - LB/BHP-HR [G/KW-HR]:	0.362 [220]
IDLE SPEED - RPM:	700
MAXIMUM GOVERNED SPEED - RPM:	3245
MAXIMUM ALLOWABLE FUEL HEIGHT ABOVE FUEL PUMP - FT [M]:	9.8 [3]
GOVERNED SPEED RATE - %:	≤ 10

① ALL DATA CERTIFIED WITHIN ±5%.



ENGINE MATERIALS & CONSTRUCTION

ENGINE		AIR INTAKE	
CAMSHAFT:		AIR CLEANER:	
TYPE	GROUND	TYPE	DRIP PROOF
MATERIAL	CARBON STEEL	MATERIAL	PLEATED PAPER
LOCATION	IN BLOCK	COOLING SYSTEM	
DRIVE	SPUR GEAR	COOLANT HEAT EXCHANGER:	
CONNECTING RODS:		TYPE	TUBE & SHELL
TYPE	I-BEAM, FRACTURE	MATERIAL	
MATERIAL	FORGED STEEL	ELECTRODE	ZINC
CRANKSHAFT:		HEADERS	COPPER
TYPE	GROUND	SHELL	ALUMINUM
MATERIAL	DUCTILE IRON	TUBES	COPPER
MAIN BEARINGS:		COOLANT PUMP:	
TYPE	PRECISION, HALF SHELL	TYPE	CENTRIFUGAL
MATERIAL	TIM ALUMINUM ALLOY	DRIVE	V-BELT
CYLINDER BLOCK:		THERMOSTAT:	
TYPE	GANTRY	TYPE	NON-BLOCKING
MATERIAL	CAST IRON	QUANTITY	1
CYLINDER HEAD:		COOLING LOOP (GALVANIZED):	
TYPE	ONE PIECE/3 CYLINDERS	TEES, ELBOWS, PIPE	GALVANIZED STEEL
MATERIAL	CAST IRON	BALL VALVES	BRASS
CYLINDER LINERS:		SOLENOID VALVE	BRASS
TYPE	WET LINED	PRESSURE REGULATOR	BRASS
MATERIAL	CAST IRON ALLOY	STRAINER	BRASS
PISTONS:		COOLING LOOP (316 STAINLESS STEEL):	
TYPE	TRUNK	TEES, ELBOWS, PIPE	316 STAINLESS STEEL
MATERIAL	ALUMINUM ALLOY	BALL VALVES	316 STAINLESS STEEL
PISTON PINS:		SOLENOID VALVE	316 STAINLESS STEEL
TYPE	FULL FLOATING	PRESSURE REGULATOR	316 STAINLESS STEEL
MATERIAL	ALLOY STEEL	STRAINER	316 STAINLESS STEEL
PISTON RINGS:		FUEL SYSTEM	
FIRST	DUCTILE CAST IRON	FUEL INJECTION PUMP:	
SECOND	ALLOY CAST IRON	TYPE	FULL MECHANICAL, CENTRIFUGAL
THIRD	ALLOY CAST IRON	DRIVE	GEAR DRIVEN
VALVES:		LUBRICATION SYSTEM	
TYPE	POPPET	TYPE	GEROTOR
ARRANGEMENT	OVERHEAD	DRIVE	GEAR
VALVE # PER CYLINDER	1 INTAKE, 1 EXHAUST		
OPERATING MECHANISM	MECHANICAL ROCKER ARM		
LIFTER TYPE	LARGE HEAD		

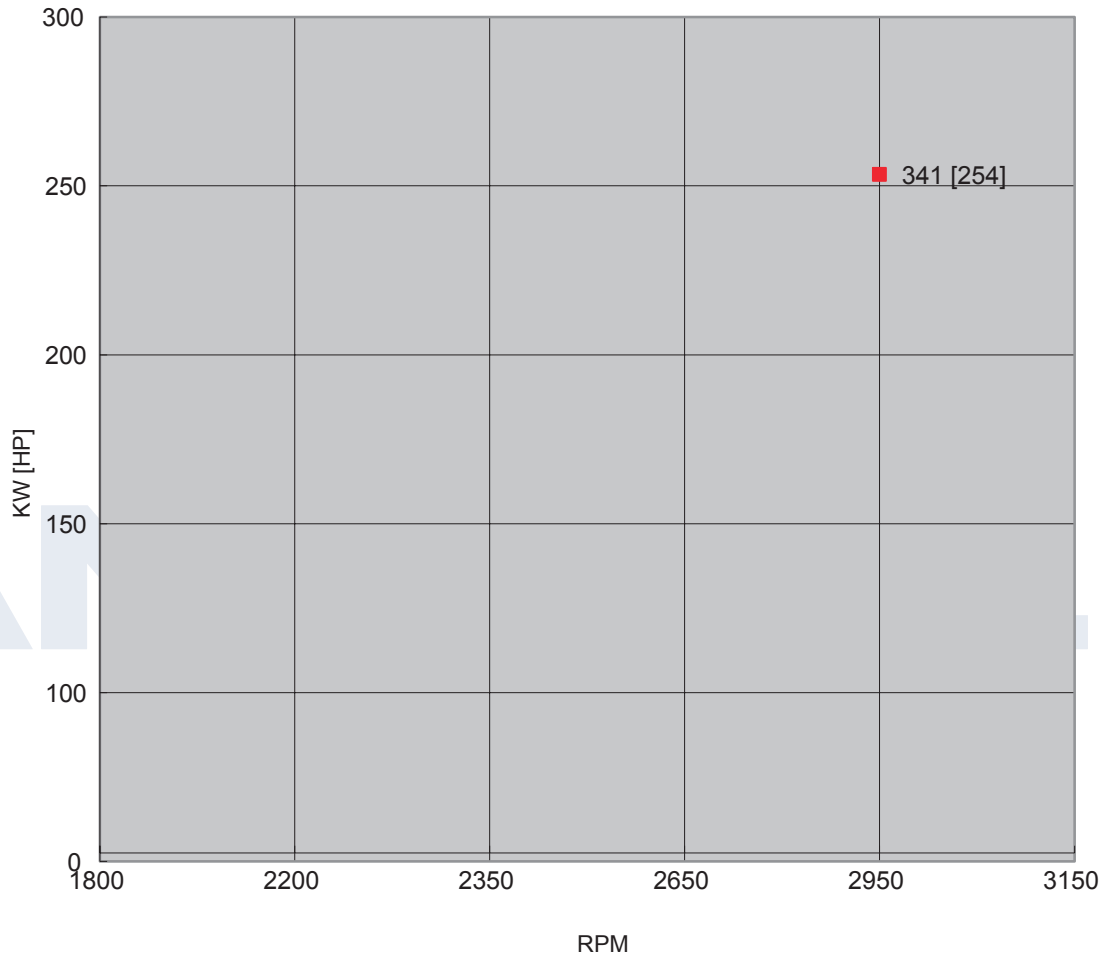
SPARE PARTS LIST

PART DESCRIPTION	QUANTITY	PART NUMBER	REMARKS
LUBRICATION SYSTEM			
OIL FILTER	1 PIECE	AF-430-1012240	
OIL PRESSURE SENSOR	1 PIECE	AF-21103-OPS	
FUEL SYSTEM			
FUEL FILTER	1 PIECE	AF-A3000-1105030	
FUEL PRE-FILTER	1 PIECE	AF-A3000-1105020	
INJECTION PUMP	1 PIECE	AF-JA7B0-1111100-493	
FUEL SUPPLY & RETURN HOSE	1 PIECE	AF6-108E-6.1	
	1 PIECE	AF6-108E-6.2	
COOLING SYSTEM			
HEAT EXCHANGER	1 PIECE	AF-C300ZJ-HE	
COOLING LOOP	1 SET	AF-CL1-00-CL	
COOLANT HOSE (90° ELBOW)	1 PIECE	AF-RE90-45/120P4	
COOLANT HOSE (90° ELBOW)	1 PIECE	AF-RE90-60/150P4	
COOLING HOSE	1 PIECE	AF-8-3-700-CH	
	1 PIECE	AF-16-5-850-CH	
	1 PIECE	AF-16-5-1300-CH	
WATER PUMP	1 PIECE		
RUNNING WATER TEMPERATURE SENSOR	1 PIECE	AF-00105-WTR	
STANDBY WATER TEMPERATURE SENSOR	1 PIECE	AF-00105-WTR	
THERMOSTAT	2 PIECES	AF-J8000-1306004	
PREHEATER	1 PIECE	AF-FH220300065 OR AF-FH1102000065 OR AF-SH110200065	
FLOW SENSOR	1 PIECE	AF	
CONTROL SYSTEM			
STARTER	1 PIECE	AF-J630C-3708100A	
ALTERNATOR	1 PIECE	AF-A35X1-3701100	
BATTERY	2 PIECES	AF-N200	
STARTER CONTACTOR	2 PIECES	AF	
OVERSPEED SHUTDOWN	1 PIECE	AF	
SPEED SENSOR	1 PIECE	AF	
INSTRUMENT PANEL	1 SET	AF-ENL-AB-ETS/R-B	
TRANSMISSION SYSTEM			
BELT	2 PIECES	AF-YC80-8PK-1920B	
STOP SOLENOID	1 PIECE	AF-5295568-SN	
INTAKE & EXHAUST SYSTEM			
AIR FILTER	1 PIECE	AF-JA8B0-1109100	
TURBOCHARGER	1 PIECE		

POWER CURVE

CURVE NUMBER:	C06108E	DATE:	09/01/2020
DISPLACEMENT - IN ³ [L]:	419 [6.871]	ASPIRATION:	TURBOCHARGED + WATER COOLED
POWER STANDARD:	UL	BORE & STROKE - IN [MM]:	4.25 x 5.04 [108 x 125]
NUMBER OF CYLINDERS:	6	FUEL SYSTEM:	INLINE, MECHANICAL

● ALL DATA CERTIFIED WITHIN ±5%.

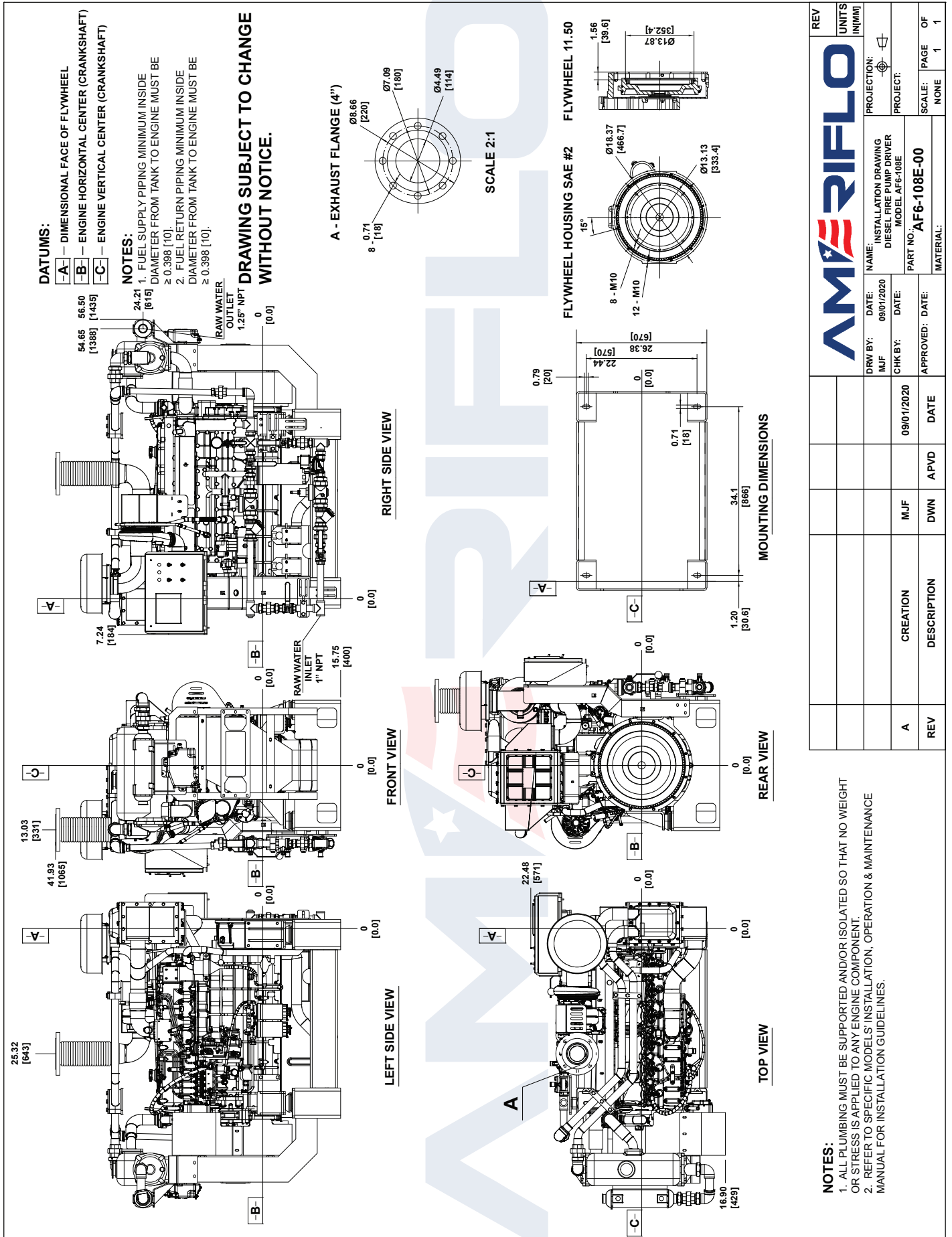


TORQUE		
SPEED	LB-FT	N-M
RPM		
1800		
2200		
2350		
2650		
2950	607	824
3150		

OUTPUT POWER		
SPEED	HP	KW
RPM		
1800		
2200		
2350		
2650		
2950	341	254
3150		

FUEL CONSUMPTION		
SPEED	LB/BHP-HR	G/KW-HR
RPM		
1800		
2200		
2350		
2650		
2950	0.362	220
3150		

● ALL DATA IS BASED ON ENGINE OPERATIONG WITH FUEL SYSTEM, LUBRICATING OIL PUMP, AIR CLEANER AND ALTERNATOR. DOES NOT INCLUDE AIR COMPRESSOR, FAN & OPTIONAL EQUIPMENT. DATA IS BASED ON SAE STANDARD J1394 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.



REV	UNITS IN/MM					
A	CREATION	MJF	09/01/2020	DWN	APVD	DATE
REV	DESCRIPTION					
NAME: INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER MODEL AF6-108E		PROJECT:				
PART NO.: AF6-108E-00		SCALE: PAGE OF NONE 1 1				
MATERIAL:		APPROVED: DATE:				
DATE: 09/01/2020		DATE:		DATE:		
M/JF		M/JF		M/JF		

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.

