

## FM - APPROVED RATINGS BHP & KW

<b>ENGINE MODEL:</b>	AF6-110B
<b>EMISSIONS:</b>	TIER 0
<b>DATE:</b>	09/01/2020
<b>DRAWING NUMBER:</b>	AF6-110B.00
<b>PERFORMANCE CURVE NUMBER:</b>	C06110BF
<b>RATED POWER:</b>	148 BHP @ 2950 RPM 110 KW @ 2950 RPM
<b>REFERENCE NUMBER:</b>	14DS001E
<b>VERSION:</b>	A



## GENERAL ENGINE DATA

TYPE:	4 CYCLE; INLINE; WATER COOLED	
NUMBER OF CYLINDERS:	6	
ASPIRATION:	NATURALLY	
BORE & STROKE - IN [MM]:	4.33 x 5.04 [110 x 125]	
CYLINDER LINER TYPE:	<input checked="" type="checkbox"/> WET <input type="checkbox"/> DRY	
DISPLACEMENT - IN <sup>3</sup> [L]:	435 [7.127]	
COMPRESSION RATIO:	17:01	
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]:	0.020 [0.50]
	EXHAUST - IN [MM]:	0.020 [0.50]
IGNITION TYPE:	COMPRESSION (DIESEL)	
CHARGE AIR COOLING TYPE:	RAW WATER	
WEIGHT (FUEL PUMP CONFIGURATION) - LBS [KG]:	1718 [780]	
DIMENSIONS (L x W x H) - IN [MM]:	62 x 37 x 46 [1565 x 946 x 1175]	
FLYWHEEL / FLYWHEEL HOUSING DIMENSIONS:	11.50 / SAE #3	
TORQUE @ RATED RPM - LB-FT [N-M]:	271 [368]	

## 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]:	≤ 1292 [700] @2950 RPM
EXHAUST GAS FLOW @ MAXIMUM OUTPUT - LBS/HR [KG/HR]:	2392 [1085] @ 2950 RPM
MAXIMUM ALLOWABLE BACK PRESSURE - PSI [KPA]:	1.45 [10]
MINIMUM EXHAUST PIPE DIAMETER - IN [MM]:	2.5 [65]

**AIR INTAKE SYSTEM**

AIR CLEANER TYPE:	DRY TYPE, DISPOSABLE
AIR FLOW - CFM [M <sup>3</sup> /HR]:	619 [1052]
AIR INLET RESTRICTION - PSI [KPA]:	≤ 0.87 [6.0]

**LUBRICATION SYSTEM**

OIL CAPACITY (ENGINE ONLY) - QTS [L]:	12.7 [12]
MAXIMUM SUMP OIL TEMPERATURE - °F [°C]:	176 ~ 248 [80 ~ 120]
NORMAL OPERATING OIL PRESSURE RANGE - PSI [BAR]:	49.3 ~ 71.1 [3.4 ~ 4.9]
OIL PRESSURE @ IDLE - PSI [BAR]:	≥ 14.2 [0.98]

**COOLING SYSTEM**

COOLANT CAPACITY (ENGINE & HEAT EXCHANGER) - QTS [L]:	26.4 [25]	
THERMOSTAT RANGE:	START OPEN - °F [°C]:	169 [76]
	FULL OPEN - °F [°C]:	187 [86]
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]:	169 ~ 203 [76 ~ 95]	
ENGINE COOLANT FLOW @ FULL SPEED - GPM [M <sup>3</sup> /HR]:	70.4 [16]	
MINIMUM RAW WATER FLOW @ ENGINE SPEED (RPM)	2950	
RAW WATER TEMPERATURES TO 60.8°F [16°C] - GPM [M <sup>3</sup> /HR]:	26.4 [6.0]	
RAW WATER TEMPERATURES TO 100.4°F [38°C] - GPM [M <sup>3</sup> /HR]:	33.4 [7.6]	
RAW WATER INTAKE PIPE SIZE:	RAW WATER INLET - IN:	1.00 NPT
	RAW WATER OUTLET - IN:	1.25 NPT

**HEATER SYSTEM**

WATTAGE - W:	3000
VOLTAGE (AC) - V:	220

**DC ELECTRICAL SYSTEM**

NORMAL SYSTEM VOLTAGE - V:	24
STARTER MOTOR - HP [KW]:	8.31 [6.2]
RECOMMENDED MINIMUM BATTERY SIZE - AH:	150
COLD CRANKING AMPS @ 0°F (-18°C):	900
CHARGING ALTERNATOR OUTPUT - AMPS:	45

① ALL DATA CERTIFIED WITHIN ±5%.

**FUEL SYSTEM**

INJECTION PUMP:	INLINE, PLUNGER TYPE
INJECTION PUMP ADVANCE ANGLE - °:	11
MINIMUM SUPPLY LINE SIZE - IN [MM]:	0.394 [10]
MINIMUM RETURN LINE SIZE - IN [MM]:	0.394 [10]
FUEL MANAGEMENT CONTROL:	MECHANICAL
IDLE SPEED - RPM:	720
GOVERNED SPEED RATE - %:	< 10

① ALL DATA CERTIFIED WITHIN ±5%.



**ENGINE MATERIALS & CONSTRUCTION**

ENGINE		AIR INTAKE	
<b>CAMSHAFT:</b>		<b>AIR CLEANER:</b>	
TYPE	GROUND	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	COPPER
TYPE	GROUND	SHELL	ALUMINUM
MATERIAL	ALLOY STEEL	TUBES	COPPER
<b>MAIN BEARINGS:</b>		<b>COOLANT PUMP:</b>	
TYPE	PRECISION, HALF SHELL	TYPE	CENTRIFUGAL
MATERIAL	COPPER-LEAD ALLOY	DRIVE	V-BELT
<b>CYLINDER BLOCK:</b>		<b>THERMOSTAT:</b>	
TYPE	WET LINED	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	CENTRIFUGALLY CAST	PRESSURE REGULATOR	BRASS
MATERIAL	CAST IRON ALLOY	STRAINER	BRASS
<b>PISTONS:</b>		<b>COOLING LOOP (316 STAINLESS STEEL):</b>	
TYPE	1 PIECE	TEES, ELBOWS, PIPE	316 STAINLESS STEEL
MATERIAL	CAST ALUMINUM	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		

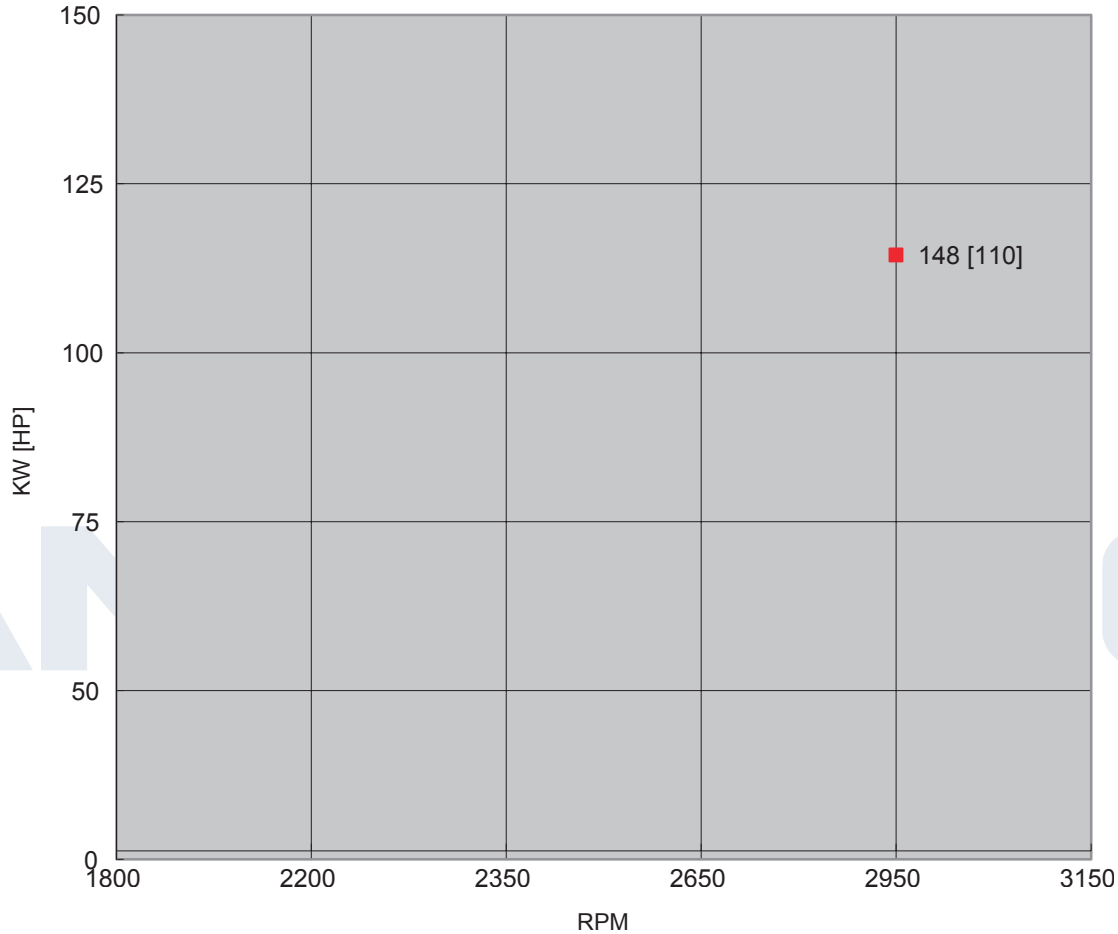
**SPARE PARTS LIST**

PART DESCRIPTION	PART NUMBER	REMARKS
AFTERCOOLER	N/A	N/A
HEAT EXCHANGER	AH300	MAX. WORKING PRESSURE 72.5 PSI [5 BAR]
ALTERNATOR	JFZ2904	28 V / 45 A
STARTING SYSTEM	QDJ2710G-PC	24 V / 6.2 KW
TURBOCHARGER	N/A	N/A
FUEL PUMP WITH SPEED CONTROLLER	6AW410	N/A
FUEL INJECTORS	1112020-001-0000W	0.29 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	KE00105	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	SH220300065	220 V / 3 KW MAX. TEMP 149°F [65°C]
	SH110300065	110 V / 3 KW MAX. TEMP 149°F [65°C]
OIL FILTERS	1012015-015-0000M	1 PIECE
FUEL FILTERS	1177001-001-0000A	1 PIECE
AIR FILTERS	ECC105001	1 PIECE
BELTS	1308032A001-0010	2 PIECES
THERMOSTATS	1306010-001-0000Q	2 PIECES
EXHAUST BLANKET	AF6110B0602-EI	DN65
FUEL SUPPLY & RETURN LINES	AF6-110D-09.03 AF6-110D-09.04	N/A

**POWER CURVE**

CURVE NUMBER:	C06110BF	DATE:	09/01/2020
DISPLACEMENT - IN <sup>3</sup> [L]:	435 [7.13]	ASPIRATION:	NATURALLY
POWER STANDARD:	UL	BORE & STROKE - IN [MM]:	4.33 x 5.04 [110 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	271	368
3150		

OUTPUT POWER		
SPEED	HP	KW
RPM		
1800		
2200		
2350		
2650		
2950	148	110
3150		

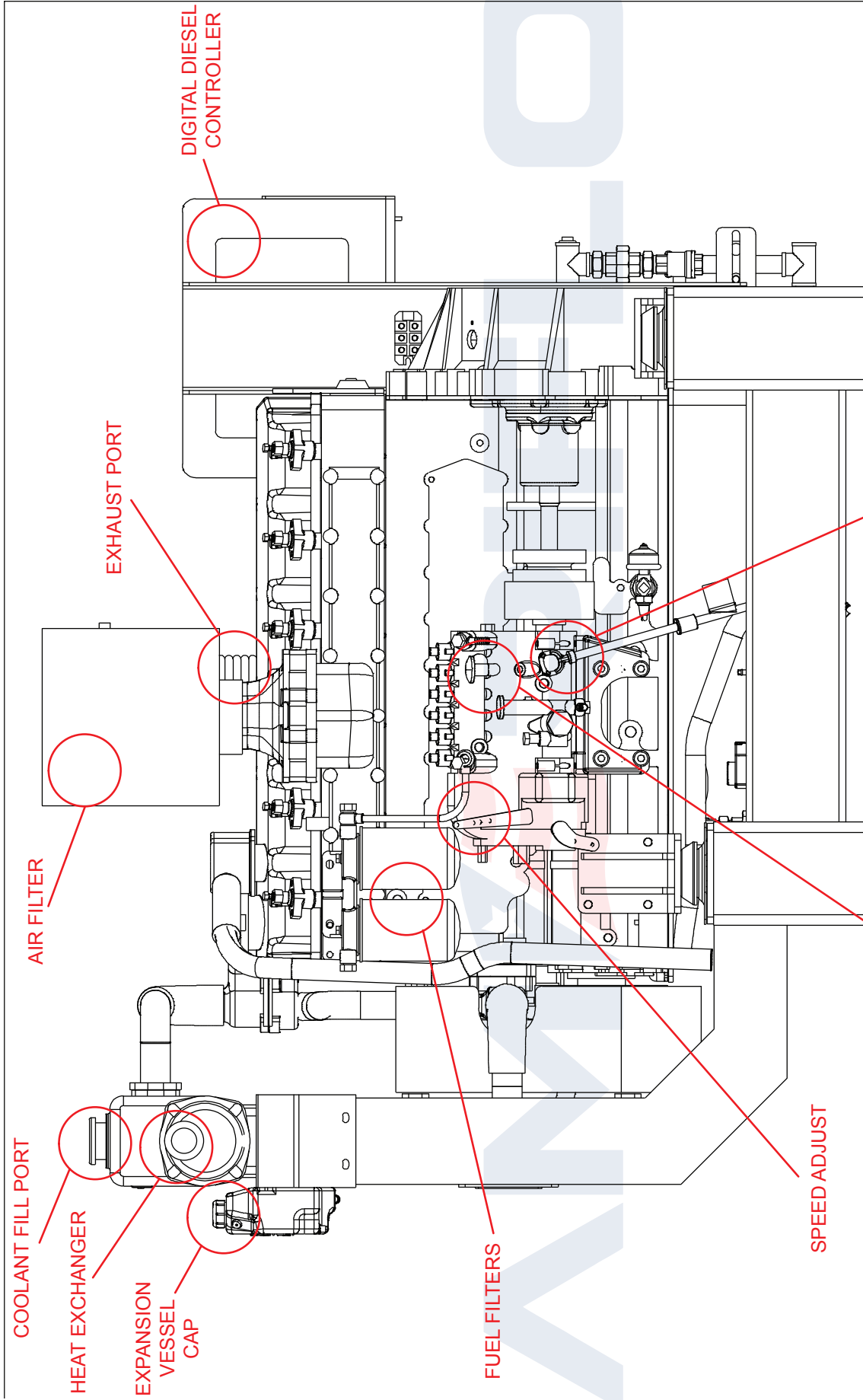
FUEL CONSUMPTION		
SPEED	LB/BHP-HR	G/KW-HR
RPM		
1800		
2200		
2350		
2650		
2950	0.411	250
3150		

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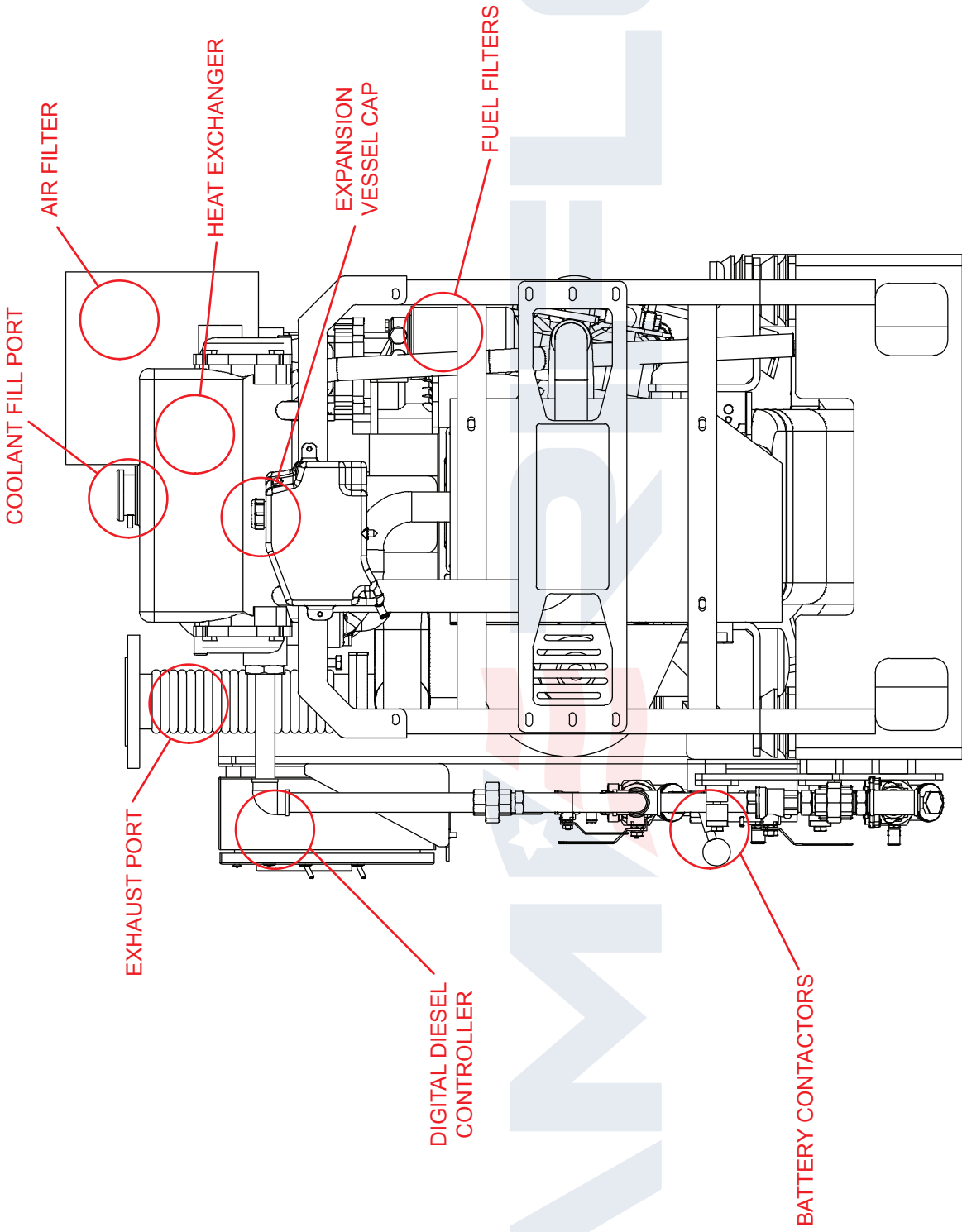




REV	UNITS IN (MM)
<b>AMERIFLO</b>	
NAME:	INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER MODEL AF6-110B
DATE:	09/01/2020
PROJECTION:	
PROJECT:	
CHK BY:	MJF
DATE:	09/01/2020
APPROVED:	DATE:
DATE:	
PART NO.:	AF6-110B-LEFT
MATERIAL:	
SCALE:	NONE
PAGE:	1
OF:	1

**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.





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REV	UNITS	<b>AMERIFLO</b>	PROJECTION:	SCALE: PAGE OF
	IN (MM)		PROJECT:	NONE 1 1
		NAME: INSTALLATION DRAWING	DATE: 09/01/2020	APPROVED: DATE:
		DIESEL FIRE PUMP DRIVER	DATE:	
		MODEL AF6-110B	DATE:	
		PART NO. AF6-110B-FRONT	DATE:	
		MATERIAL:		
			DATE	
			APVD	
			DWN	
			DESCRIPTION	
A		CREATION	MJF	09/01/2020
REV				

