

UL - cUL LISTED 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>	C06110B
<b>RATED POWER:</b>	153 BHP @ 2950 RPM 114 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]
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 (DIRTY) - PSI [KPA]:	≤ 0.87 [6]
AIR INLET RESTRICTION (CLEAN) - PSI [KPA]:	≤ 0.44 [3]

**LUBRICATION SYSTEM**

OIL CAPACITY (ENGINE ONLY) - QTS [L]:	12.7 [12]
MAXIMUM SUMP OIL TEMPERATURE - °F [°C]:	248 [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]	
MAXIMUM ENGINE COOLANT TEMPERATURE - °F [°C]:	≤ 208 [98]	
ENGINE COOLANT FLOW @ FULL SPEED - GPM [M <sup>3</sup> /HR]:	70.4 [16]	
RAW WATER COOLING CAPACITY - GPM [M <sup>3</sup> /HR]:	35 [8]	
MINIMUM / MAXIMUM RAW WATER COOLING CAPACITY - GPM [M <sup>3</sup> /HR]:	10 ~ 18 [2.3 ~ 4]	
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]:	8.31 [6.2]
RECOMMENDED MINIMUM BATTERY SIZE - AH:	150
COLD CRANKING AMPS @ 0°F (-18°C):	800
RESERVE CAPACITY - AMPS:	290
CHARGING ALTERNATOR OUTPUT - AMPS:	45
STARTER CRANKING AMPS, ROLLING @ 0°F (-18°C):	330
MINIMUM CRANKING SPEED REQUIRED FOR UNAIDED COLD START - RPM:	230

● 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
FUEL CONSUMPTION @ 2950 RPM - LB/BHP-HR [G/KW-HR]:	0.411 [250]
IDLE SPEED - RPM:	720
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	
<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		

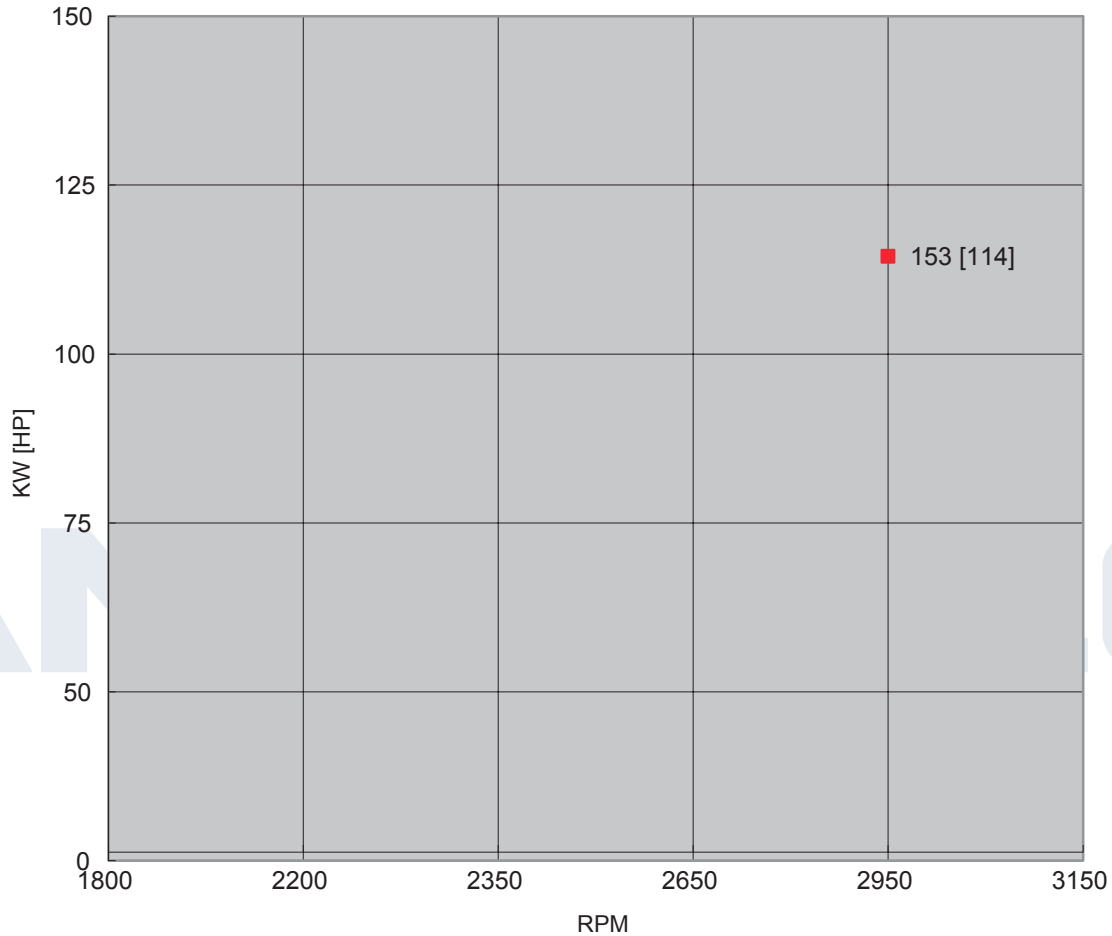
**SPARE PARTS LIST**

<b>PART DESCRIPTION</b>	<b>QUANTITY</b>	<b>PART NUMBER</b>	<b>REMARKS</b>
<b>LUBRICATION SYSTEM</b>			
OIL FILTER	1 PIECE	AF-1012015-051-0000M	
OIL PRESSURE SENSOR	1 PIECE	AF-21103-OPS	
<b>FUEL SYSTEM</b>			
FUEL FILTER	1 PIECE	AF-1117001-001-0000A	
INJECTION PUMP	1 PIECE	AF-6AW410	
FUEL SUPPLY & RETURN HOSE	1 PIECE	AF6-110B-6.1	
	1 PIECE	AF6-110B-6.2	
<b>COOLING SYSTEM</b>			
HEAT EXCHANGER	1 PIECE	AF-AH300	
COOLING LOOP	1 SET	AF-CL0.75-00-CL	
COOLANT HOSE (90° ELBOW)	1 PIECE	AF-RE90-54-45/100P4	
COOLANT HOSE (90° ELBOW)	1 PIECE	AF-RE90-51-45/100P4	
COOLING HOSE	1 PIECE	AF-8-3-700-CHE	
COOLING HOSE	1 PIECE	AF-16-5-800-CH	
COOLING HOSE	1 PIECE	AF-16-5-1100-CH	
WATER PUMP	1 PIECE	AF-2410201920000	
RUNNING WATER TEMPERATURE SENSOR	1 PIECE	AF-00105-WTR	
STANDBY WATER TEMPERATURE SENSOR	1 PIECE	AF-00105-WTR	
THERMOSTAT	2 PIECES	AF-1306010-001-0000Q	
PREHEATER	1 PIECE	AF-HT22-2 OR AF-SRS2-1500-120-55	
FLOW SENSOR	1 PIECE	AF	
<b>CONTROL SYSTEM</b>			
STARTER	1 PIECE	AF-QDJ2710G-PC	
ALTERNATOR	1 PIECE	AF-JFZ2904	
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	
<b>TRANSMISSION SYSTEM</b>			
BELT	2 PIECES	AF-1308032A001-0010-BT	
STOP SOLENOID	1 PIECE	AF-5295568-SN	
<b>INTAKE &amp; EXHAUST SYSTEM</b>			
AIR FILTER	1 PIECE	AF-ECC105003	

**POWER CURVE**

CURVE NUMBER:	C06110B	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	153	114
3150		

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

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**DATUMS:**

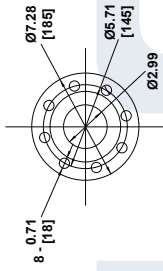
- A- DIMENSIONAL FACE OF FLYWHEEL
- B- ENGINE HORIZONTAL CENTER (CRANKSHAFT)
- C- ENGINE VERTICAL CENTER (CRANKSHAFT)

**NOTES:**

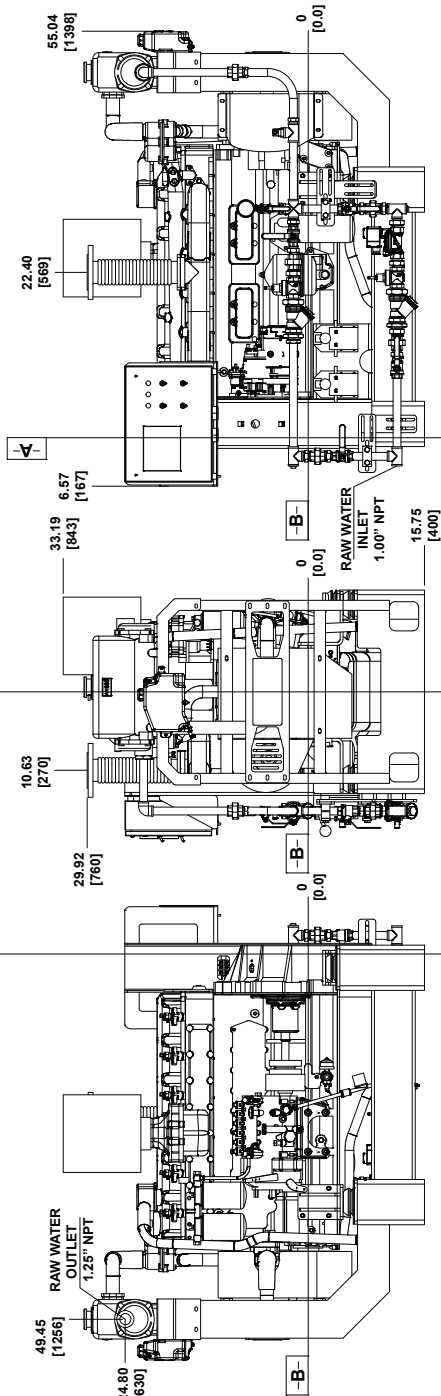
1. FUEL SUPPLY PIPING MINIMUM INSIDE DIAMETER FROM TANK TO ENGINE MUST BE  $\geq 0.398$  [10].
2. FUEL RETURN PIPING MINIMUM INSIDE DIAMETER FROM TANK TO ENGINE MUST BE  $\geq 0.398$  [10].

**DRAWING SUBJECT TO CHANGE WITHOUT NOTICE.**

A - EXHAUST FLANGE (2.5")



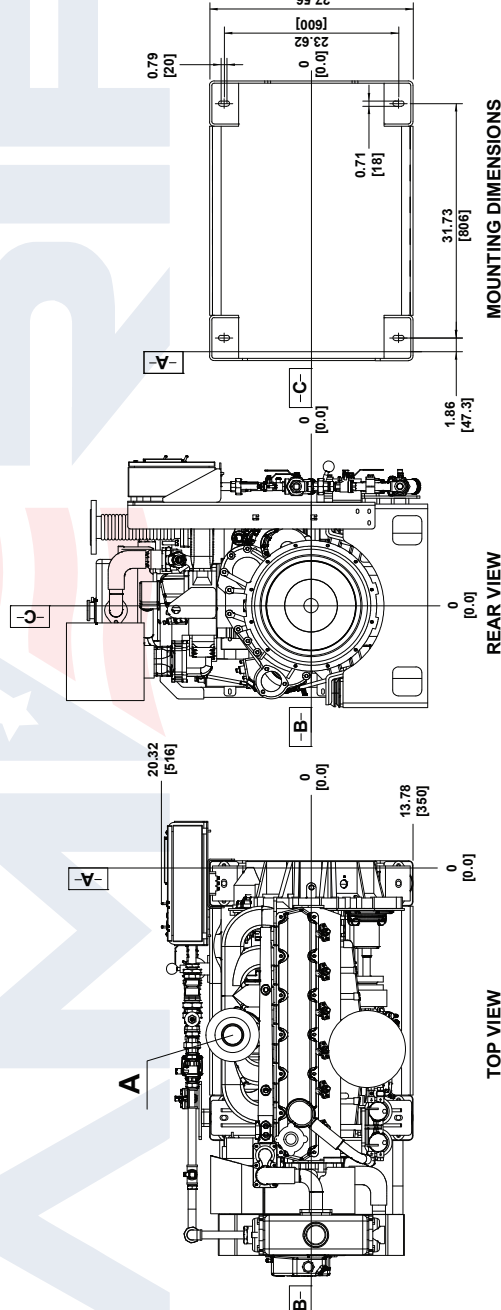
SCALE 2:1



RIGHT SIDE VIEW

FRONT VIEW

LEFT SIDE VIEW

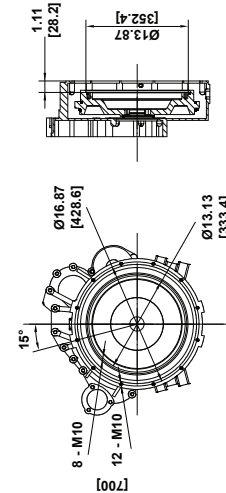


TOP VIEW

REAR VIEW

MOUNTING DIMENSIONS

FLYWHEEL HOUSING SAE #2 FLYWHEEL 11.50



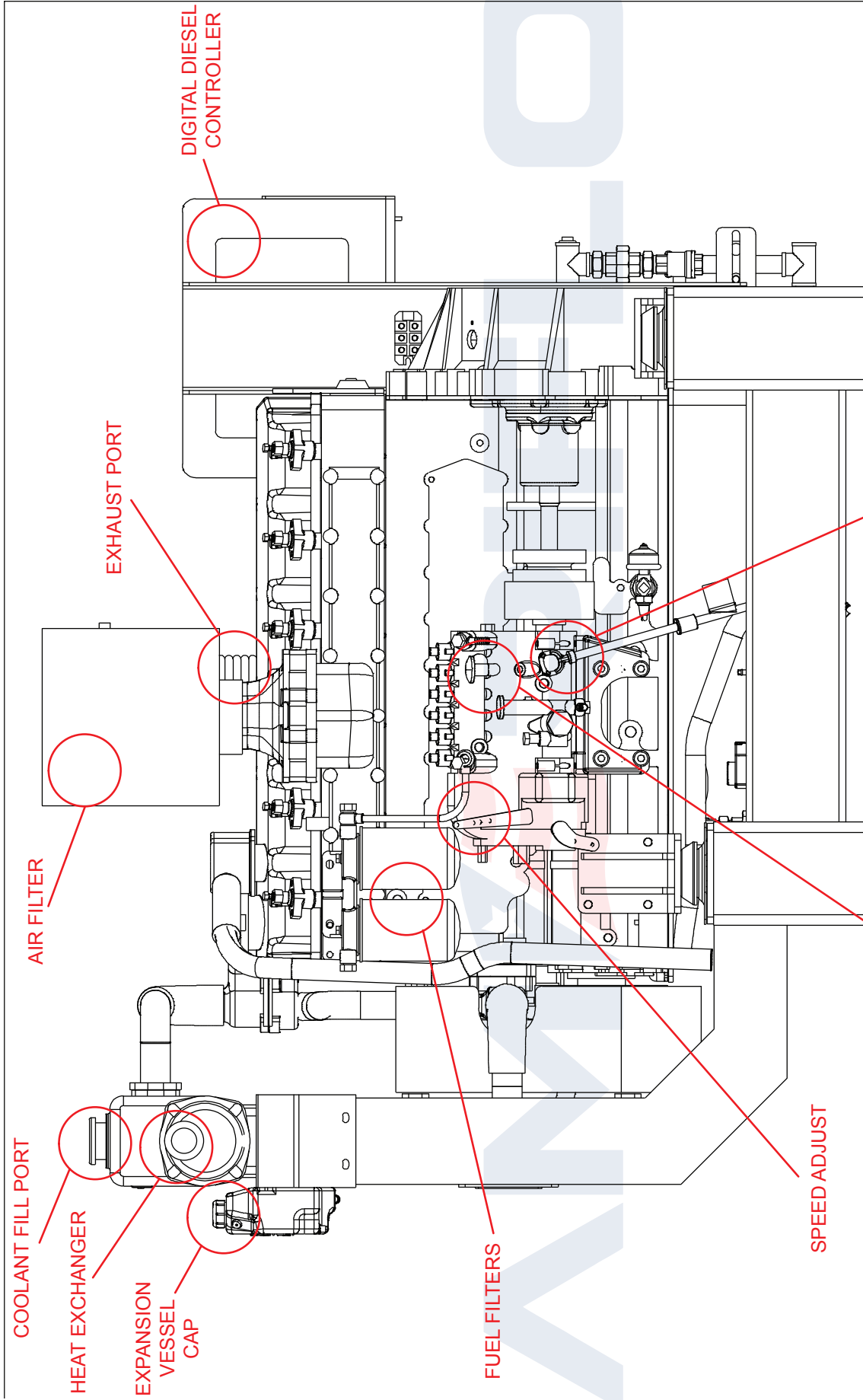
REV	UNITS IN/MM							
A	CREATION	MJF	09/01/2020	DATE	DESCRIPTION	DWN	APVD	DATE
REV				APPROVED: DATE:				
NAME: INSTALLATION DRAWING		PROJECT: DIESEL FIRE PUMP DRIVER		PART NO.: AF6-110B-00		SCALE: NONE		PAGE 1
DATE: 09/01/2020		DATE:		MATERIAL:		PAGE 1		OF 1

**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.







REV	UNITS	AMERIFLO
	IN (MM)	
	DATE:	NAME:
	09/01/2020	INSTALLATION DRAWING
	DATE:	DIESEL FIRE PUMP DRIVER
	09/01/2020	MODEL AF6-110B
	CHK BY:	PART NO.:
	MJF	AF6-110B-LEFT
	APPROVED:	MATERIAL:
	DATE:	
	09/01/2020	
	MJF	
A	CREATION	
REV	DESCRIPTION	
	DWN	APVD
	DATE	
	1	1
	NONE	1

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