

## FM - APPROVED RATINGS BHP & KW

<b>ENGINE MODEL:</b>	AF6-105B
<b>EMISSIONS:</b>	TIER 0
<b>DATE:</b>	08/26/2021
<b>DRAWING NUMBER:</b>	AF6-105B-FM.00
<b>PERFORMANCE CURVE NUMBER:</b>	C06105BF
<b>RATED POWER:</b>	208 BHP @ 2100 RPM 155 KW @ 2100 RPM
<b>REFERENCE NUMBER:</b>	C06105BF
<b>VERSION:</b>	A



## GENERAL ENGINE DATA

TYPE:	4 CYCLE; INLINE; WATER COOLED	
NUMBER OF CYLINDERS:	4	
ASPIRATION:	TURBOCHARGED + WATERCOOLED	
BORE & STROKE - IN [MM]:	4.13 x 4.88 [105 x 124]	
CYLINDER LINER TYPE:	<input type="checkbox"/> WET <input checked="" type="checkbox"/> DRY	
DISPLACEMENT - IN <sup>3</sup> [L]:	393 [6.44]	
COMPRESSION RATIO:	16:01	
FIRING ORDER:	1 - 5 - 3 - 6 - 2 - 4	
COMBUSTION SYSTEM:	DIRECT INJECTION	
ROTATION (AS VIEWED FROM FRONT OF ENGINE):	CCW	
VALVES PER CYLINDER:	INTAKE: 2 EXHAUST: 2	
VALVE LASH (COLD ENGINE):	INTAKE - IN [MM]:	0.010 [0.25]
	EXHAUST - IN [MM]:	0.012 [0.50]
IGNITION TYPE:	COMPRESSION (DIESEL)	
CHARGE AIR COOLING TYPE:	RAW WATER	
WEIGHT (FUEL PUMP CONFIGURATION) - LBS [KG]:	1819 [825]	
DIMENSIONS (L x W x H) - IN [MM]:	57 x 38 x 57 [1450 x 955 x 1458]	
FLYWHEEL / FLYWHEEL HOUSING DIMENSIONS:	11.50 / SAE #3	
TORQUE @ RATED RPM - LB-FT [N-M]:	520 [705]	

## 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 <sup>3</sup> /HR]:	1081 [1836]
MAXIMUM ALLOWABLE BACK PRESSURE - PSI [KPA]:	1.31 [9]
MINIMUM EXHAUST PIPE DIAMETER - IN [MM]:	5.0 [125]

**AIR INTAKE SYSTEM**

AIR CLEANER TYPE:	DRY TYPE, DISPOSABLE
AIR FLOW - CFM [M <sup>3</sup> /HR]:	500 [852] @ 2100 RPM
AIR INLET RESTRICTION - PSI [KPA]:	≤ 0.73 [5]

**LUBRICATION SYSTEM**

OIL CAPACITY (ENGINE ONLY) - QTS [L]:	19 [18]
MAXIMUM SUMP OIL TEMPERATURE - °F [°C]:	176 ~ 230 [80 ~ 110]
NORMAL OPERATING OIL PRESSURE RANGE - PSI [BAR]:	29.0 ~ 87.0 [2.0 ~ 6.0]
OIL PRESSURE @ IDLE - PSI [BAR]:	> 10.2 [0.7]

**COOLING SYSTEM**

COOLANT CAPACITY (ENGINE & HEAT EXCHANGER) - QTS [L]:	23 [22]		
THERMOSTAT RANGE:	START OPEN - °F [°C]:	180 [82]	
	FULL OPEN - °F [°C]:	203 [95]	
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]:	167 ~ 203 [75 ~ 95]		
ENGINE COOLANT FLOW @ FULL SPEED - GPM [M <sup>3</sup> /HR]:	52.8 [12.0]		
MINIMUM RAW WATER FLOW @ ENGINE SPEED (RPM)	1470	1760	2100
RAW WATER TEMPERATURES TO 60.8°F [16°C] - GPM [M <sup>3</sup> /HR]:	22.0 [5.0]	22.0 [5.0]	26.4 [6.0]
RAW WATER TEMPERATURES TO 100.4°F [38°C] - GPM [M <sup>3</sup> /HR]:	29.5 [6.7]	29.5 [6.7]	33.5 [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]:	7.4 [5.5]
RECOMMENDED BATTERY SIZE - AH:	150
COLD CRANKING AMPS @ 0°F (-18°C):	900
CHARGING ALTERNATOR OUTPUT - AMPS:	35

① ALL DATA CERTIFIED WITHIN ±5%.

**FUEL SYSTEM**

INJECTION PUMP:	INLINE, PLUNGER TYPE
INJECTION PUMP ADVANCE ANGLE - °:	12 ± 1
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:	700
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	DUCTILE IRON	TUBES	COPPER
<b>MAIN BEARINGS:</b>		<b>COOLANT PUMP:</b>	
TYPE	PRECISION, HALF SHELL	TYPE	CENTRIFUGAL
MATERIAL	ALUMINUM BRONZE	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	SLAB 2 VALVE	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		

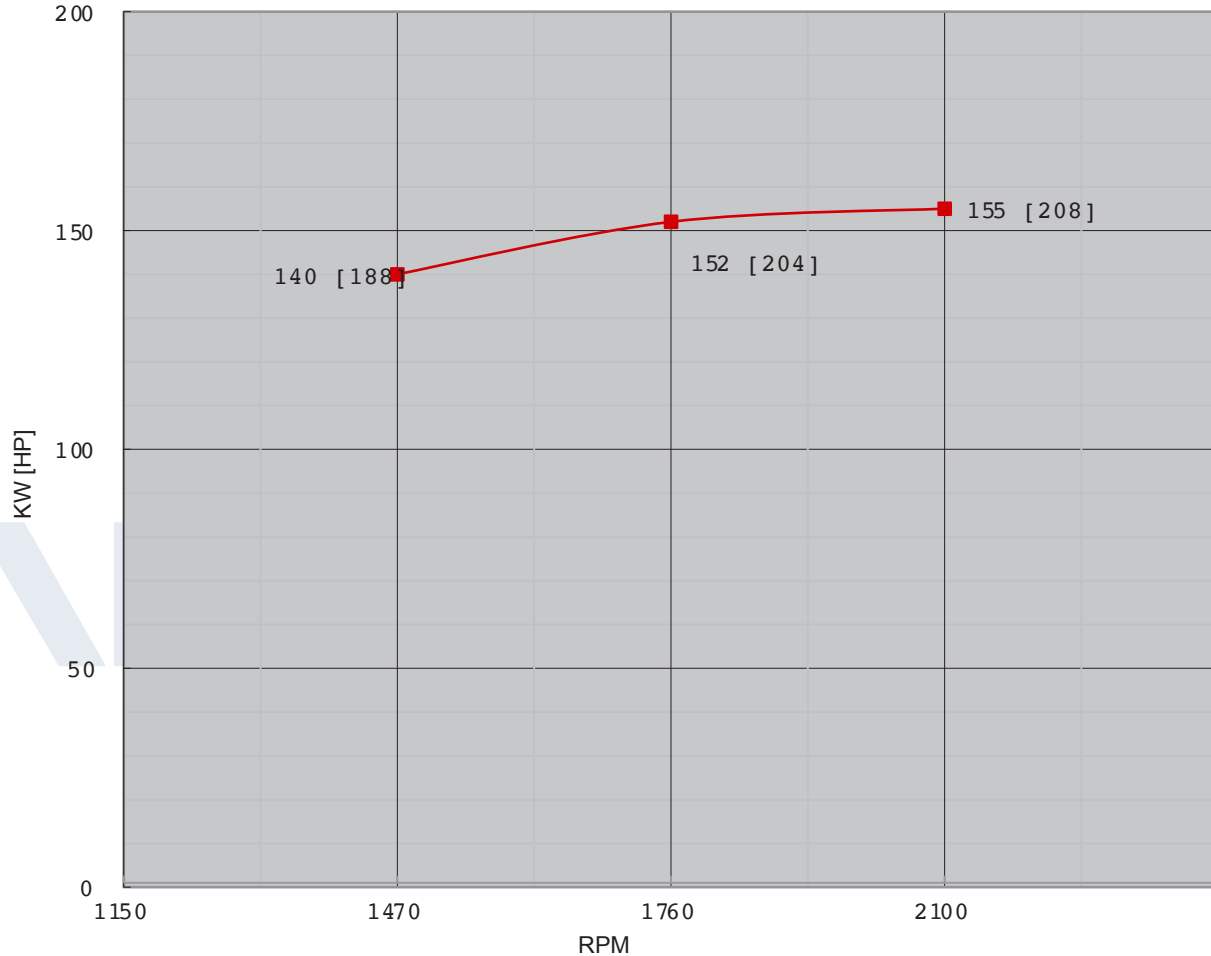
**SPARE PARTS LIST**

PART DESCRIPTION	PART NUMBER	REMARKS
AFTERCOOLER	120057-IC	KL6
HEAT EXCHANGER	AH300	MAX. WORKING PRESSURE 72.5 PSI [5 BAR]
ALTERNATOR	S00012977+02	28 V / 35 A
STARTING SYSTEM	S00025086+04	24 V / 5 KW
TURBOCHARGER	S00013410+02	N/A
FUEL PUMP WITH SPEED CONTROLLER	S00034947+01	N/A
FUEL INJECTORS	S00020996+01	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	KE00121	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	FH220300065	220 V / 3 KW MAX. TEMP 149°F [65°C]
	FH110200065	110 V / 3 KW MAX. TEMP 149°F [65°C]
OIL FILTERS	S00005435	1 PIECE
FUEL FILTERS	D638-002-02+B	2 PIECES
AIR FILTERS	ECC105004	1 PIECE
BELTS	S00009712	1 PIECE
THERMOSTATS	S00003087	1 PIECE
EXHAUST BLANKET	AF6105B0801-EI	DN65
FUEL SUPPLY & RETURN LINES	AF6-105B-09.03 AF6-105-B09.04	N/A

## POWER CURVE

CURVE NUMBER:	C06105BF	DATE:	08/26/2021
DISPLACEMENT - IN <sup>3</sup> [L]:	393 [6.44]	ASPIRATION:	TURBOCHARGED + WATERCOOLED
POWER STANDARD:	FM	BORE & STROKE - IN [MM]:	4.25 x 4.53 [108 x 115]
NUMBER OF CYLINDERS:	4	FUEL SYSTEM:	INLINE, MECHANICAL

● ALL DATA CERTIFIED WITHIN ±5%.



TORQUE		
SPEED	LB-FT	N-M
RPM		
1150		
1470	671	910
1760	608	824
2100	520	705

OUTPUT POWER		
SPEED	HP	KW
RPM		
1150		
1470	188	140
1760	204	152
2100	208	155

FUEL CONSUMPTION		
SPEED	LB/BHP-HR	G/KW-HR
RPM		
1150		
1470	0.337	205
1760	0.345	210
2100	0.362	220

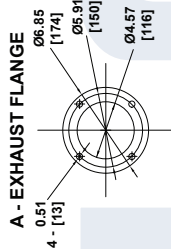
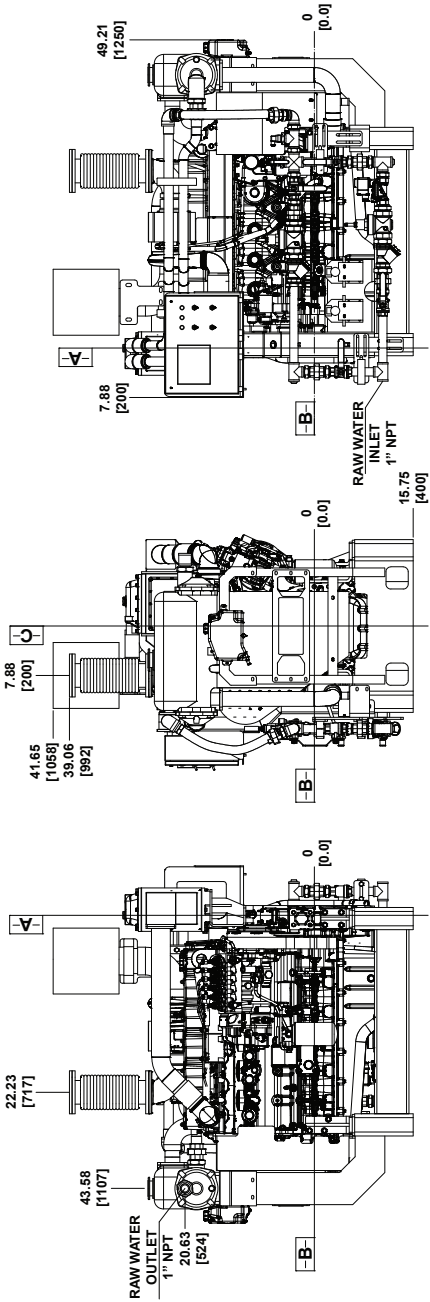
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**DATUMS:**

- 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].



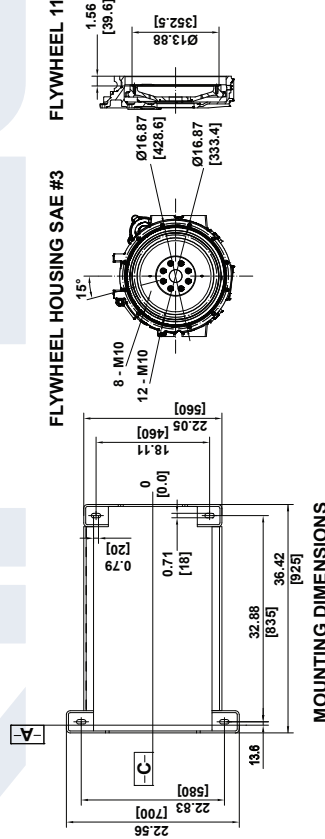
SCALE 2:1

RIGHT SIDE VIEW

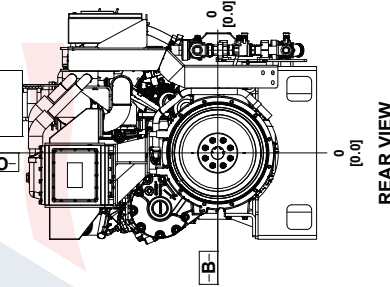
FRONT VIEW

LEFT SIDE VIEW

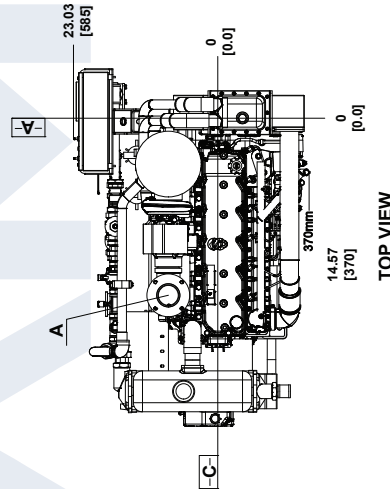
FLYWHEEL HOUSING SAE #3 FLYWHEEL 11.50



MOUNTING DIMENSIONS



REAR VIEW



TOP VIEW

REV	AMERIFLO			UNITS	
	PROJECT:				
	PROJECT: AF6-105B-00				
	DATE: 09/01/2020	NAME: INSTALLATION DRAWING	PROJECT: AF6-105B	SCALE: NONE	PAGE 1
	CHK BY: MJF	MODEL: DIESEL FIRE PUMP DRIVER	PART NO.: AF6-105B-00		OF 1
	APPROVED: DATE:				
		DATE: 09/01/2020			
		APVD: MJF			
		DESCRIPTION: CREATION			
		DWN: MJF			
		REV: A			
		REV: REV			

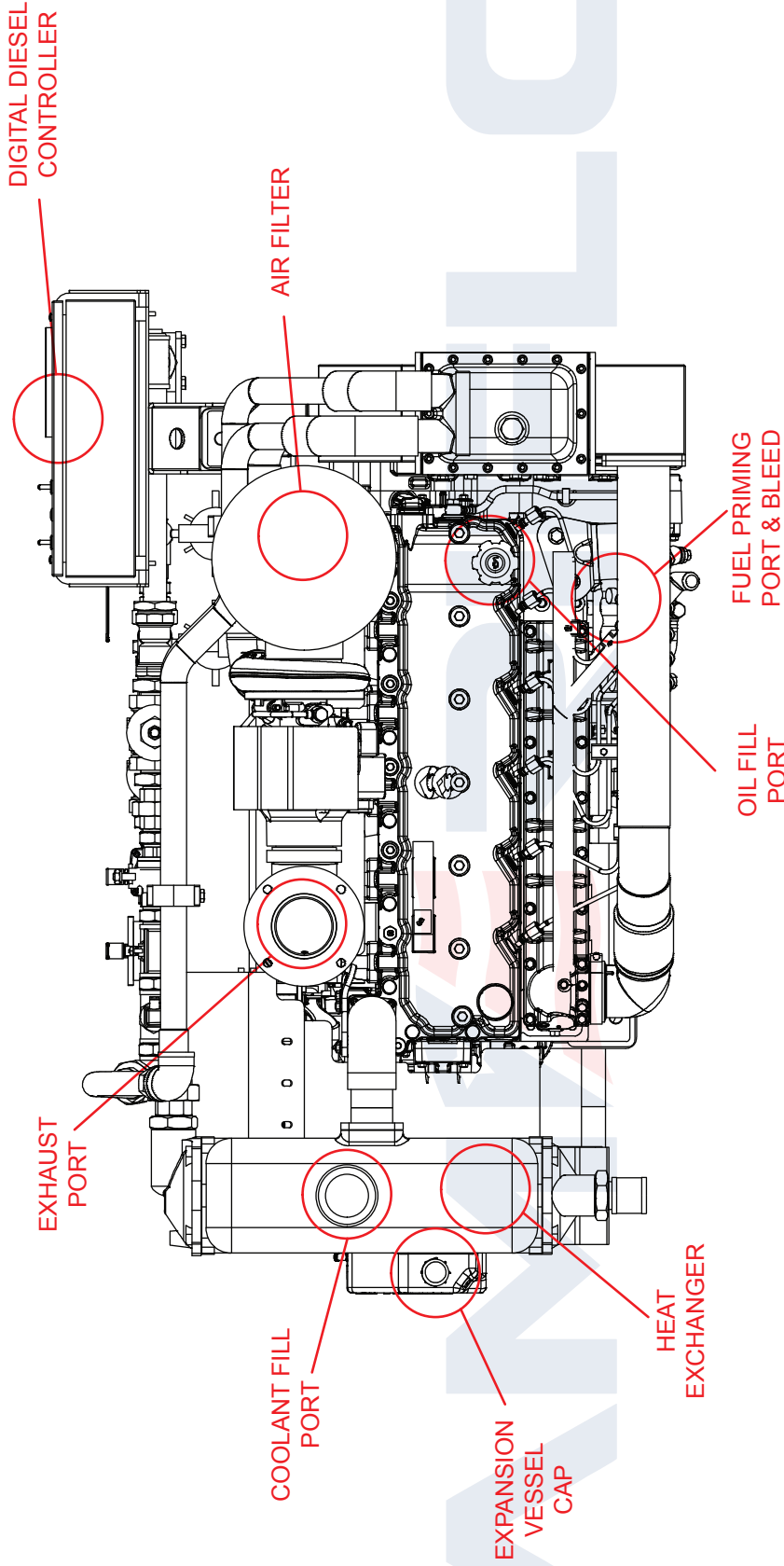
**NOTES:**

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 IN/[MM]
A	
REV	

NAME:	INSTALLATION DRAWING
DATE:	DIESEL FIRE PUMP DRIVER
DRW BY:	MODEL AF6-105B
MJF	
CHK BY:	
DATE:	
DATE:	
APPROVED:	
DATE:	
PART NO.:	AF6-105B-TOP
MATERIAL:	
PROJECT:	
SCALE:	NONE
PAGE	1
OF	1



