

FM - APPROVED RATINGS BHP & KW

<b>ENGINE MODEL:</b>	AF6-127
<b>EMISSIONS:</b>	TIER 0
<b>DATE:</b>	09/01/2020
<b>DRAWING NUMBER:</b>	AF6-127.00
<b>PERFORMANCE CURVE NUMBER:</b>	C06127F
<b>RATED POWER:</b>	469 BHP @ 1760 RPM 350 KW @ 1760 RPM
<b>REFERENCE NUMBER:</b>	DS06127F
<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]:	5.00 x 6.50 [127 x 165]	
CYLINDER LINER TYPE:	<input type="checkbox"/> WET <input checked="" type="checkbox"/> DRY	
DISPLACEMENT - IN <sup>3</sup> [L]:	765 [12.54]	
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]:	0.016 [0.40]
	EXHAUST - IN [MM]:	0.024 [0.60]
IGNITION TYPE:	COMPRESSION (DIESEL)	
CHARGE AIR COOLING TYPE:	RAW WATER	
WEIGHT (FUEL PUMP CONFIGURATION) - LBS [KG]:	3208 [1455]	
DIMENSIONS (L x W x H) - IN [MM]:	64 x 44 x 57 [1620 x 1115 x 1455]	
FLYWHEEL / FLYWHEEL HOUSING DIMENSIONS:	14.00 / SAE #1	
TORQUE @ RATED RPM - LB-FT [N-M]:	1401 [1899]	

**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]:	≤ 1022 [550]
EXHAUST GAS FLOW @ MAXIMUM OUTPUT - CFM [M <sup>3</sup> /HR]:	856 [2181]
MAXIMUM ALLOWABLE BACK PRESSURE - PSI [KPA]:	1.31 [9]
MINIMUM EXHAUST PIPE DIAMETER - IN [MM]:	6 [150]

**AIR INTAKE SYSTEM**

AIR CLEANER TYPE:	DRY TYPE, DISPOSABLE
AIR FLOW - CFM [M <sup>3</sup> /HR]:	1236 [2100]
AIR INLET RESTRICTION (DIRTY) - PSI [KPA]:	≤ 0.07 [5]

**LUBRICATION SYSTEM**

OIL CAPACITY (ENGINE ONLY) - QTS [L]:	35.9 [34]
MAXIMUM SUMP OIL TEMPERATURE - °F [°C]:	185 ~ 221 [85 ~ 105]
NORMAL OPERATING OIL PRESSURE RANGE - PSI [BAR]:	50.7 ~ 79.8 [3.5 ~ 5.5]
OIL PRESSURE @ IDLE - PSI [BAR]:	> 14.5 [1.0]

**COOLING SYSTEM**

COOLANT CAPACITY (ENGINE & HEAT EXCHANGER) - QTS [L]:	52.8 [50]	
THERMOSTAT RANGE:	START OPEN - °F [°C]:	162 [72]
	FULL OPEN - °F [°C]:	180 [82]
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]:	132 [30]	
RAW WATER COOLING CAPACITY - GPM [M <sup>3</sup> /HR]:	88 [20]	
MINIMUM RAW WATER FLOW @ ENGINE SPEED (RPM)	1470	1760
RAW WATER TEMPERATURES TO 60.8°F [16°C] - GPM [M <sup>3</sup> /HR]:	43.5 [15]	43.5 [15]
RAW WATER TEMPERATURES TO 100.4°F [38°C] - GPM [M <sup>3</sup> /HR]:	79.3 [18]	83.6 [19]
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]:	10.1 [7.5]
RECOMMENDED MINIMUM BATTERY SIZE - AH:	180
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 - °:	14
MINIMUM SUPPLY LINE SIZE - IN [MM]:	0.50 [12]
MINIMUM RETURN LINE SIZE - IN [MM]:	0.50 [12]
FUEL MANAGEMENT CONTROL:	MECHANICAL
FUEL CONSUMPTION @ 2100 RPM - LB/BHP-HR [G/KW-HR]:	0.337 [205]
IDLE SPEED - RPM:	800±20
GOVERNED SPEED RATE - %:	< 10

① ALL DATA CERTIFIED WITHIN ±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	2 INTAKE, 2 EXHAUST		
OPERATING MECHANISM	MECHANICAL ROCKER ARM		
LIFTER TYPE	LARGE HEAD		

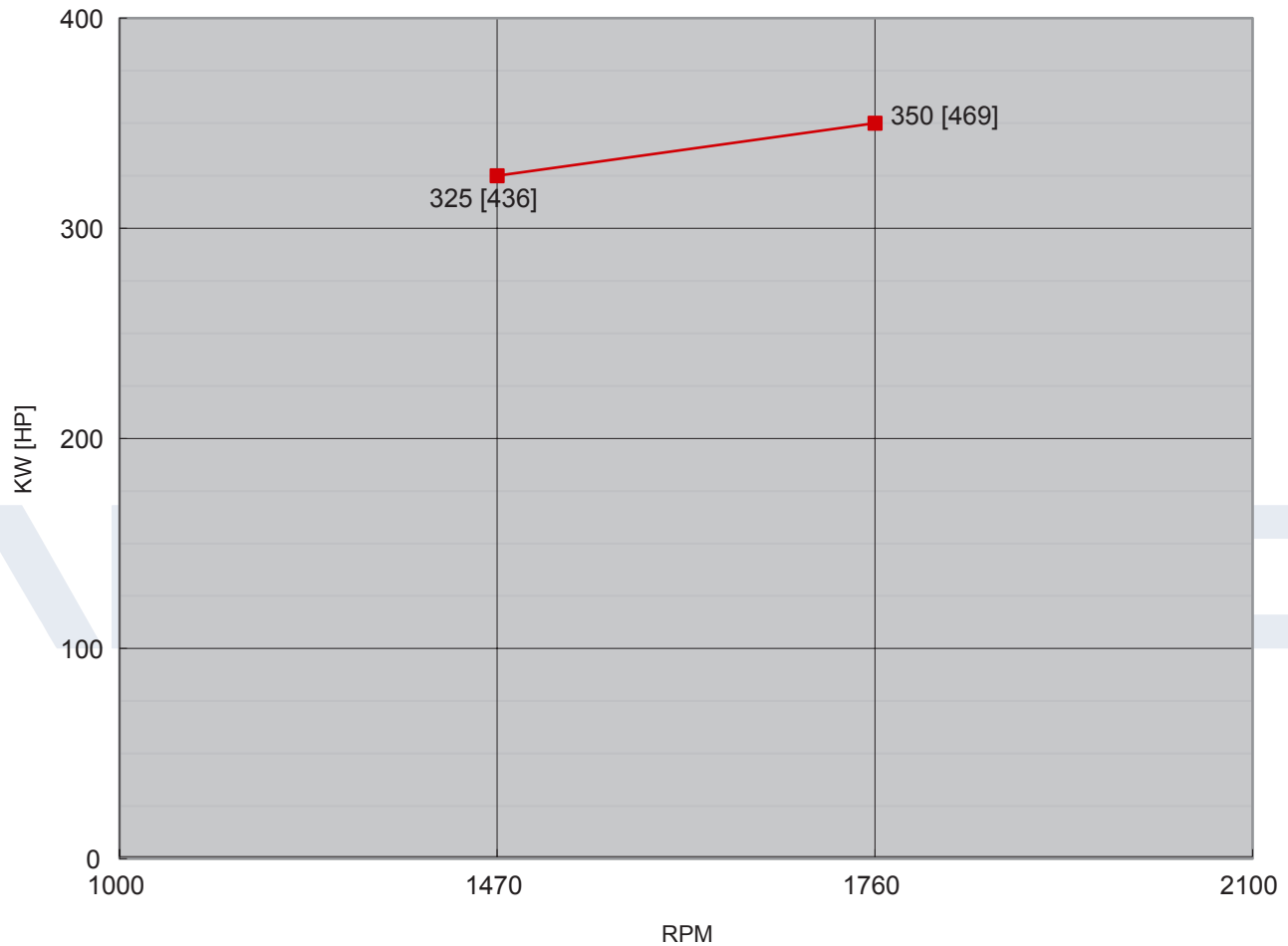
**SPARE PARTS LIST**

PART DESCRIPTION	PART NUMBER	REMARKS
AFTERCOOLER	1001568527Z	KL12.5
HEAT EXCHANGER	1002241192Z	MAX. WORKING PRESSURE 72.5 PSI [5 BAR]
ALTERNATOR	612630060694	28 V / 35 A
STARTING SYSTEM	612630030335	24 V / 5 KW
TURBOCHARGER	612630110976Z	S410
FUEL PUMP WITH SPEED CONTROLLER	1000167062Z	BH6PZ140L
FUEL INJECTORS	1002206029	0.252 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	KE00102	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 / 3 KW MAX. TEMP 149°F [65°C]
	FH110200065	110 V / 3 KW MAX. TEMP 149°F [65°C]
OIL FILTERS	1000428205	2 PIECE2
FUEL PRE-FILTERS	1000422384	N/A
FUEL FILTERS	1000588583	2 PIECES
AIR FILTERS	612700120048	1 PIECE
BELTS	1002530257	1 PIECE
THERMOSTATS	612630061133	1 PIECE
EXHAUST BLANKET	AF61270801-EI	DN150
FUEL SUPPLY & RETURN LINES	AF6-110D-09.03 AF6-110D-09.03	N/A

**POWER CURVE**

CURVE NUMBER:	C06127F	DATE:	09/01/2020
DISPLACEMENT - IN <sup>3</sup> [L]:	765 [12.54]	ASPIRATION:	TURBOCHARGED + WATER COOLED
POWER STANDARD:	UL/FM	BORE & STROKE - IN [MM]:	5.00 x 6.50 [127 x 165]
NUMBER OF CYLINDERS:	6	FUEL SYSTEM:	INLINE, MECHANICAL

● ALL DATA CERTIFIED WITHIN ±5%.



TORQUE		
SPEED	LB-FT	N-M
RPM		
1150		
1470	1555	2108
1760	1401	1899
2100		

OUTPUT POWER		
SPEED	HP	KW
RPM		
1150		
1470	436	325
1760	469	350
2100		

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

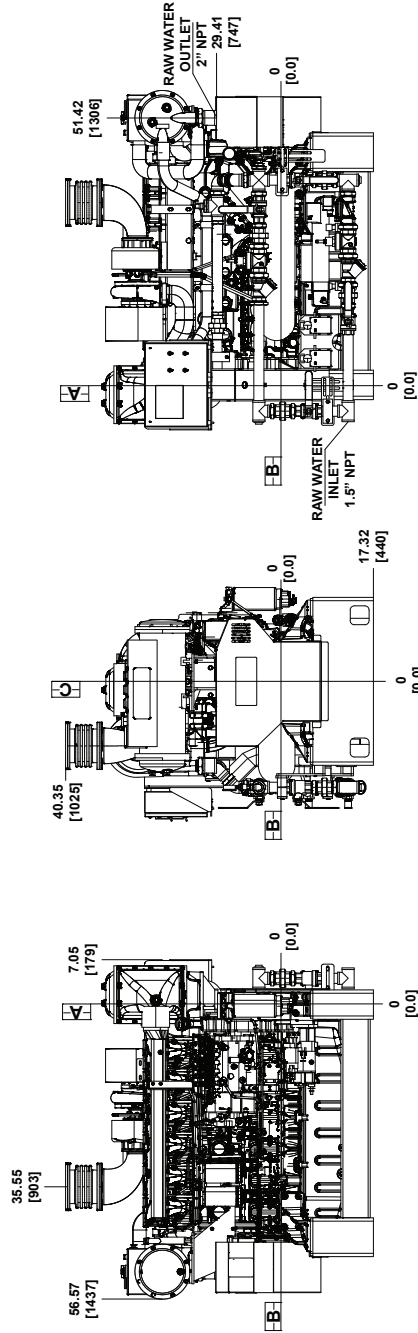
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**DATUMS:**

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

**NOTES:**

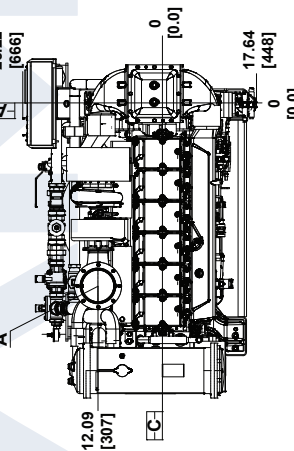
1. FUEL SUPPLY PIPING MINIMUM INSIDE DIAMETER FROM TANK TO ENGINE MUST BE  $\geq 0.500$  [12].
2. FUEL RETURN PIPING MINIMUM INSIDE DIAMETER FROM TANK TO ENGINE MUST BE  $\geq 0.500$  [12].



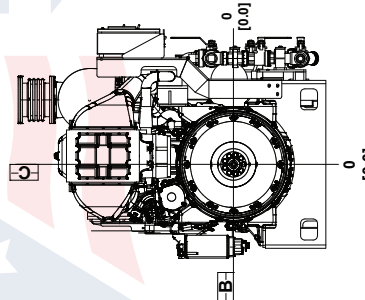
**LEFT SIDE VIEW**

**FRONT VIEW**

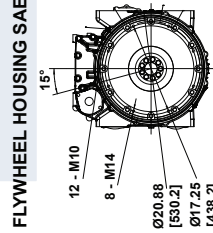
**RIGHT SIDE VIEW**



**TOP VIEW**



**REAR VIEW**



**FLYWHEEL 14.00**

**SCALE 2:1**

**MOUNTING DIMENSIONS**

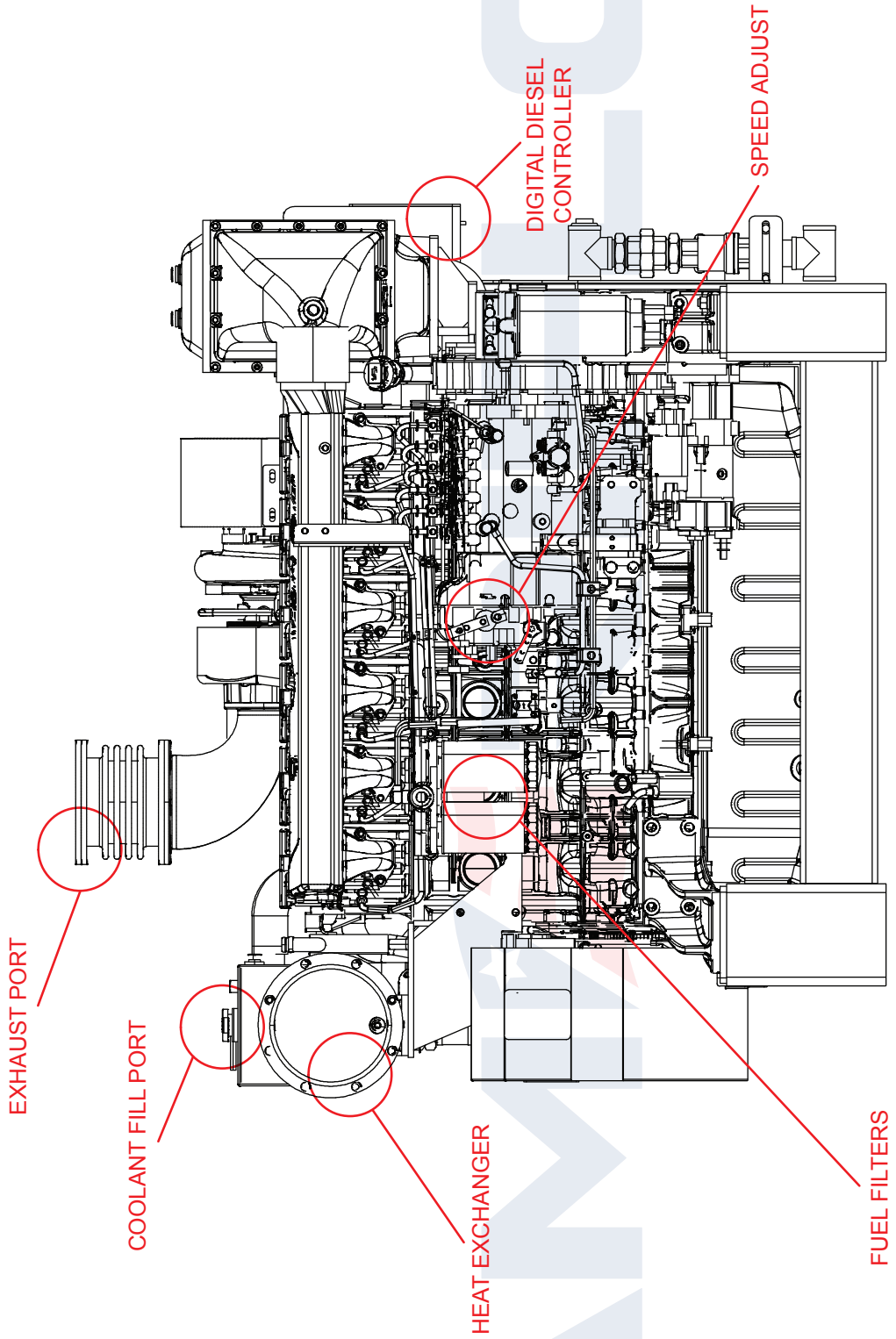
REV	UNITS	SCALE	PAGE	OF
	IN/[MM]	NONE	1	1
		<b>PROJECT:</b>		
<b>NAME:</b> INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER MODEL AF6-127		<b>PROJECT:</b>		
<b>DATE:</b> 12/28/2022 MJJF		<b>SCALE:</b> NONE		
<b>CHK BY:</b>		<b>PART NO.:</b> AF6-12700		
<b>APPROVED:</b>		<b>MATERIAL:</b>		
A	CREATION	MJJF	12/28/2022	
REV	DESCRIPTION	DWN	APVD	DATE

**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.







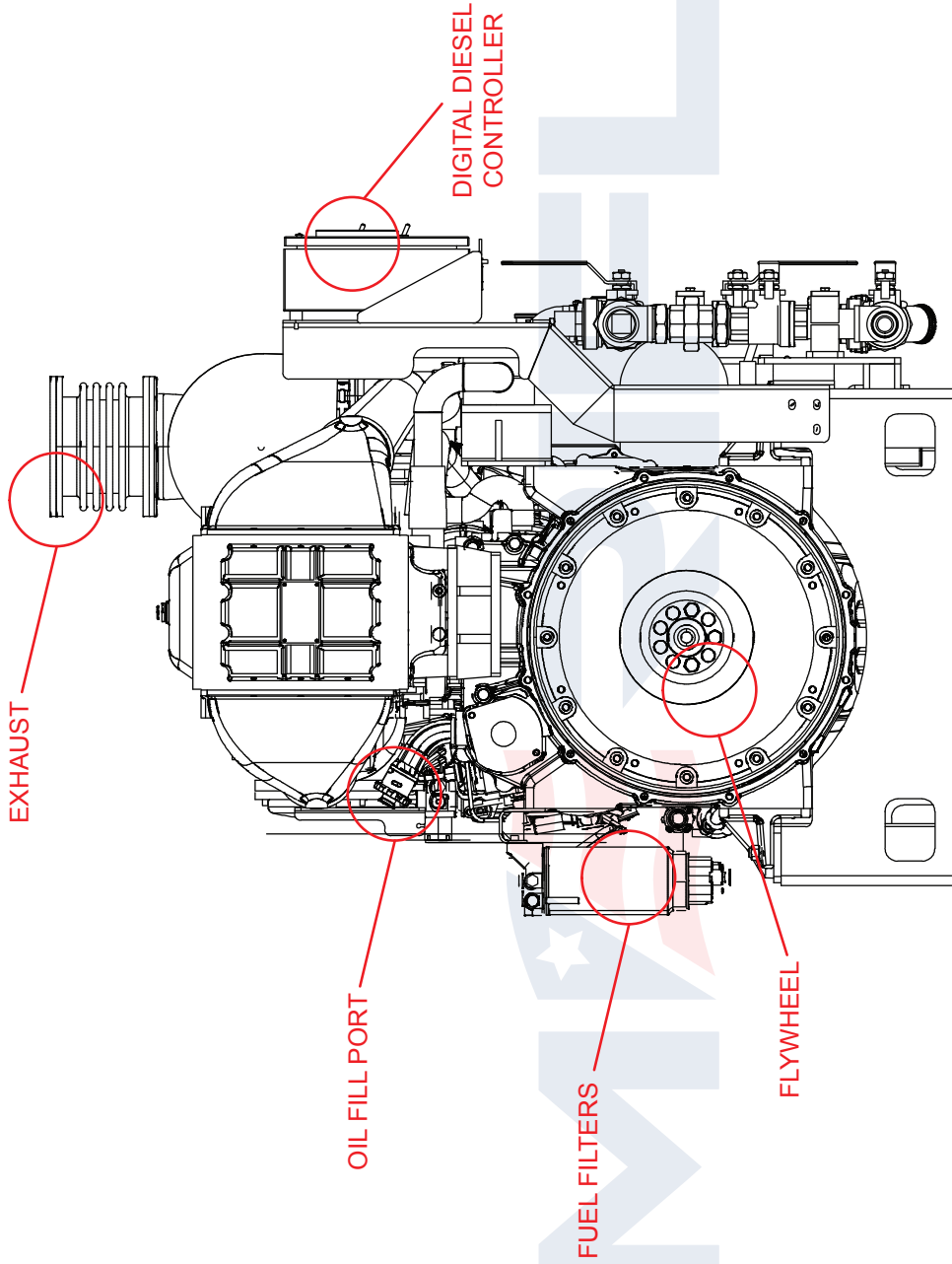
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		DATE: 09/01/2020	DATE:		
		DRW BY: MJF	APPROVED: DATE:		
		CHK BY:	DATE:		
		CREATION	MJF	09/01/2020	
		DESCRIPTION	DWN	APVD	
A					
REV					

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REV	UNITS	PROJECTION:	SCALE:	PAGE	OF
	(IN/MM)				
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		DATE: 09/01/2020			
		DRW BY: MJF			
		CHK BY:			
		DATE: 09/01/2020			
		APPROVED: DATE:			
		CREATION	DESCRIPTION	DWN	APVD
		MJF			
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