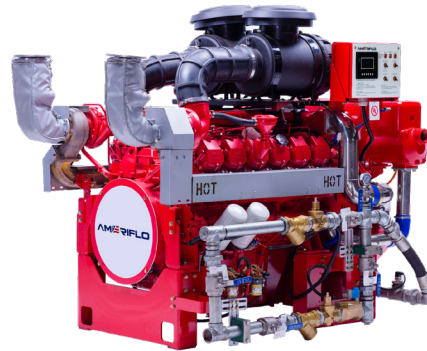


FM - APPROVED RATINGS BHP & KW

ENGINE MODEL:	AF12-128C
EMISSIONS:	TIER 0
DATE:	09/01/2020
DRAWING NUMBER:	AF12-128C.00
PERFORMANCE CURVE NUMBER:	C12128CF
RATED POWER:	1010 BHP @ 1760 RPM 753 KW @ 1760 RPM
REFERENCE NUMBER:	14DS001E
VERSION:	A


GENERAL ENGINE DATA

TYPE:	4 CYCLE; V-TYPE; WATER COOLED	
NUMBER OF CYLINDERS:	12	
ASPIRATION:	TURBOCHARGED + WATER COOLED	
BORE & STROKE - IN [MM]:	5.04 x 5.59 [128 x 142]	
CYLINDER LINER TYPE:	<input checked="" type="checkbox"/> WET <input type="checkbox"/> DRY	
DISPLACEMENT - IN ³ [L]:	1338 [21.93]	
COMPRESSION RATIO:	15:01	
FIRING ORDER:	1 - 12 - 5 - 8 - 3 - 10 - 6 - 7 - 2 - 11 - 4 - 9	
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]:	0.010 [0.25]
	EXHAUST - IN [MM]:	0.014 [0.35]
IGNITION TYPE:	COMPRESSION (DIESEL)	
CHARGE AIR COOLING TYPE:	RAW WATER	
WEIGHT (FUEL PUMP CONFIGURATION) - LBS [KG]:	4806 [2150]	
DIMENSIONS (L x W x H) - IN [MM]:	90 x 57 x 69 [2290 x 1440 x 1760]	
FLYWHEEL / FLYWHEEL HOUSING DIMENSIONS:	14.00 / SAE #1	
TORQUE @ RATED RPM - LB-FT [N-M]:	3012 [4084]	

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]:	≤ 930 [499]
EXHAUST GAS FLOW @ MAXIMUM OUTPUT - CFM [M ³ /HR]:	5921 [10060]
MAXIMUM ALLOWABLE BACK PRESSURE - PSI [KPA]:	0.87 [6]
MINIMUM EXHAUST PIPE DIAMETER - IN [MM]:	6 [150]

AIR INTAKE SYSTEM

AIR CLEANER TYPE:	DRY TYPE, DISPOSABLE
AIR FLOW - CFM [M ³ /HR]:	2098 [3564]
AIR INLET RESTRICTION (DIRTY) - PSI [KPA]:	≤ 0.87 [6]
AIR INLET RESTRICTION (CLEAN) - PSI [KPA]:	≤ 0.29 [2]

LUBRICATION SYSTEM

OIL CAPACITY (ENGINE ONLY) - QTS [L]:	42.3 [40]
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]:	74 [70]	
THERMOSTAT RANGE:	START OPEN - °F [°C]:	160 [71]
	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]:	176 [40]	
RAW WATER COOLING CAPACITY - GPM [M ³ /HR]:	176 [40]	
RAW WATER PRESSURE - PSI [BAR]:	29 [2.0]	
MAXIMUM RAW WATER TEMPERATURE - °F [°C]:	100 [37.8]	
RAW WATER INTAKE PIPE SIZE:	RAW WATER INLET - IN:	2.00 NPT
	RAW WATER OUTLET - IN:	2.50 NPT

HEATER SYSTEM

WATTAGE - W:	4500
VOLTAGE (AC) - V:	220

DC ELECTRICAL SYSTEM

NORMAL SYSTEM VOLTAGE - V:	24
STARTER MOTOR - HP [KW]:	9.4 [7.0]
RECOMMENDED BATTERY SIZE - AH:	200
COLD CRANKING AMPS @ 0°F (-18°C):	1000
RESERVE CAPACITY - AMPS:	407
CHARGING ALTERNATOR OUTPUT - AMPS:	45
STARTER CRANKING AMPS, ROLLING @ 0°F (-18°C):	550
MINIMUM CRANKING SPEED REQUIRED FOR UNAIDED COLD START - RPM:	165

● ALL DATA CERTIFIED WITHIN ±5%.

FUEL SYSTEM

INJECTION PUMP:	V-TYPE, PLUNGER TYPE
INJECTION PUMP ADVANCE ANGLE - °:	21 ± 1
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]:	0.345 [210]
IDLE SPEED - RPM:	800
MAXIMUM GOVERNED SPEED - RPM:	1980
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	OVERHEAD	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	ALUMINUM
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	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		

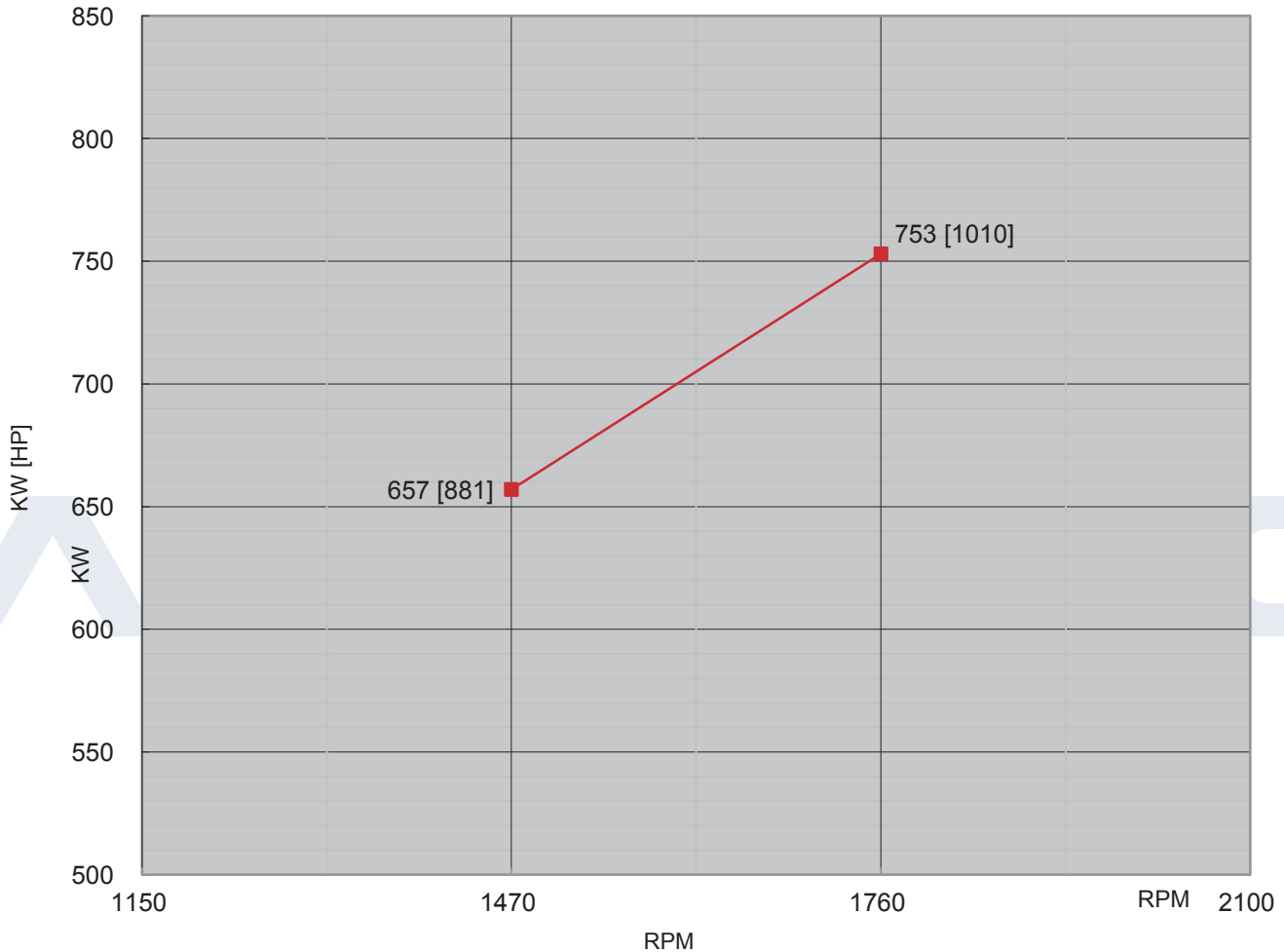
SPARE PARTS LIST

PART DESCRIPTION	PART NUMBER	REMARKS
AFTERCOOLER	AF1500073926	KL19
HEAT EXCHANGER	AFC900ZZ-HE	MAX. WORKING PRESSURE 72.5 PSI [5 BAR]
ALTERNATOR	300901-0075	28 V / 45 A
STARTING SYSTEM	300516-00075B	24 V / 7 KW
TURBOCHARGER	150105-00438A 150105-00439A	N/A
FUEL PUMP WITH SPEED CONTROLLER	65.11101-7334	N/A
FUEL INJECTORS	65.10102-6047	0.40 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	KE00121	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	KE10050	N/A
ENGINE HEATER	FH220450065	220 V / 4.5 KW MAX. TEMP 149°F [65°C]
	SH110200065	220 V / 2 KW MAX. TEMP 149°F [65°C] WITH PUMP
	SH110200065	110 V / 2 KW MAX. TEMP 149°F [65°C] WITHOUT PUMP
OIL FILTERS	65.05510-5030B	2 PIECES
FUEL FILTERS	65.12503-5018A	2 PIECES
AIR FILTERS	400504-00169	2 PIECES
BELTS	130205-00305	2 PIECES
THERMOSTATS	300738-00159	3 PIECES
EXHAUST BLANKET	AF12128C0801-EI	DN100
FUEL SUPPLY & RETURN LINES	AF12-128-12.01 AF12-128-12.02	N/A

POWER CURVE

CURVE NUMBER:	C12128CF	DATE:	09/01/2020
DISPLACEMENT - IN ³ [L]:	1338 [21.93]	ASPIRATION:	TURBOCHARGED + WATER COOLED
POWER STANDARD:	FM	BORE & STROKE - IN [MM]:	5.04 x 5.59 [128 x 142]
NUMBER OF CYLINDERS:	12	FUEL SYSTEM:	V-TYPE, MECHANICAL

● ALL DATA CERTIFIED WITHIN ±5%.



TORQUE		
SPEED	LB-FT	N-M
RPM		
1150		
1470	3149	4270
1760	3012	4084

OUTPUT POWER		
SPEED	HP	KW
RPM		
1150		
1470	881	657
1760	1010	753

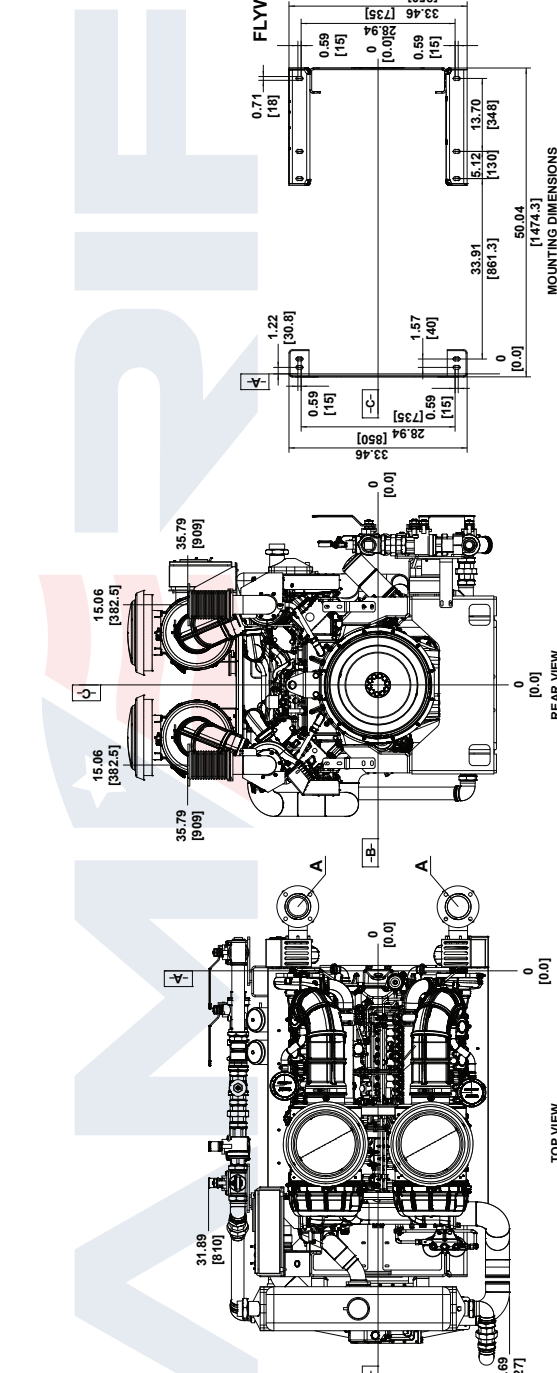
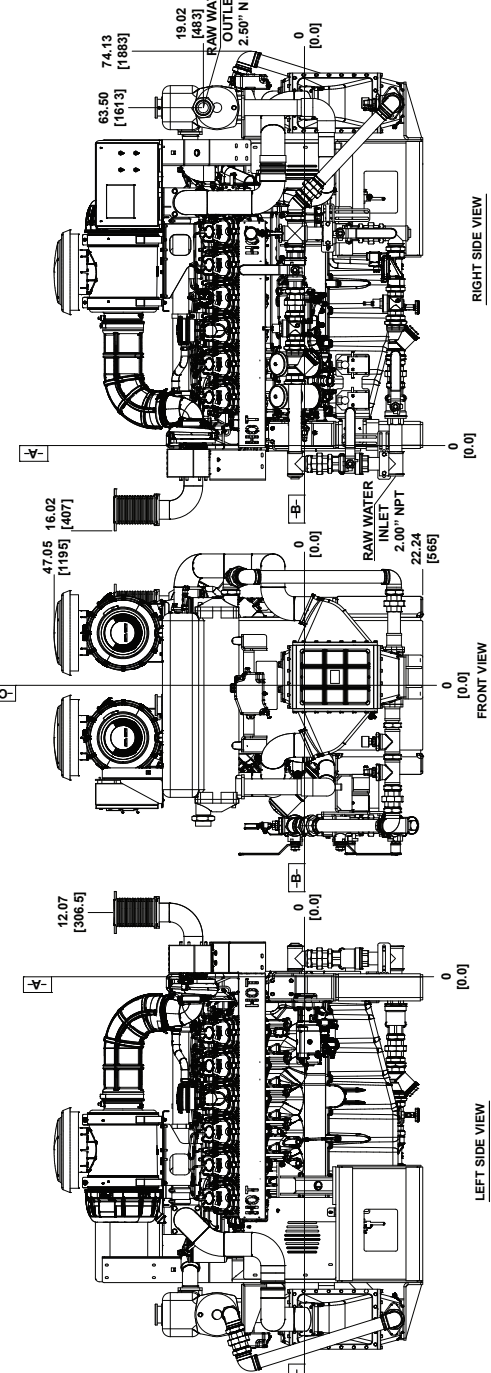
FUEL CONSUMPTION		
SPEED	LB/BHP-HR	G/KW-HR
RPM		
1150		
1470	0.337	205
1760	0.345	210

● 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 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.

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 ≥ 0.512 [13].
 2. FUEL RETURN PIPING MINIMUM INSIDE DIAMETER FROM TANK TO ENGINE MUST BE ≥ 0.512 [13].

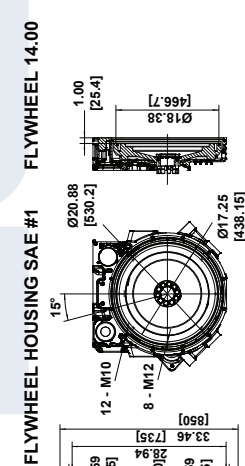
DRAWING SUBJECT TO CHANGE WITHOUT NOTICE.



A - EXHAUST FLANGE X2 (4")



SCALE 2:1

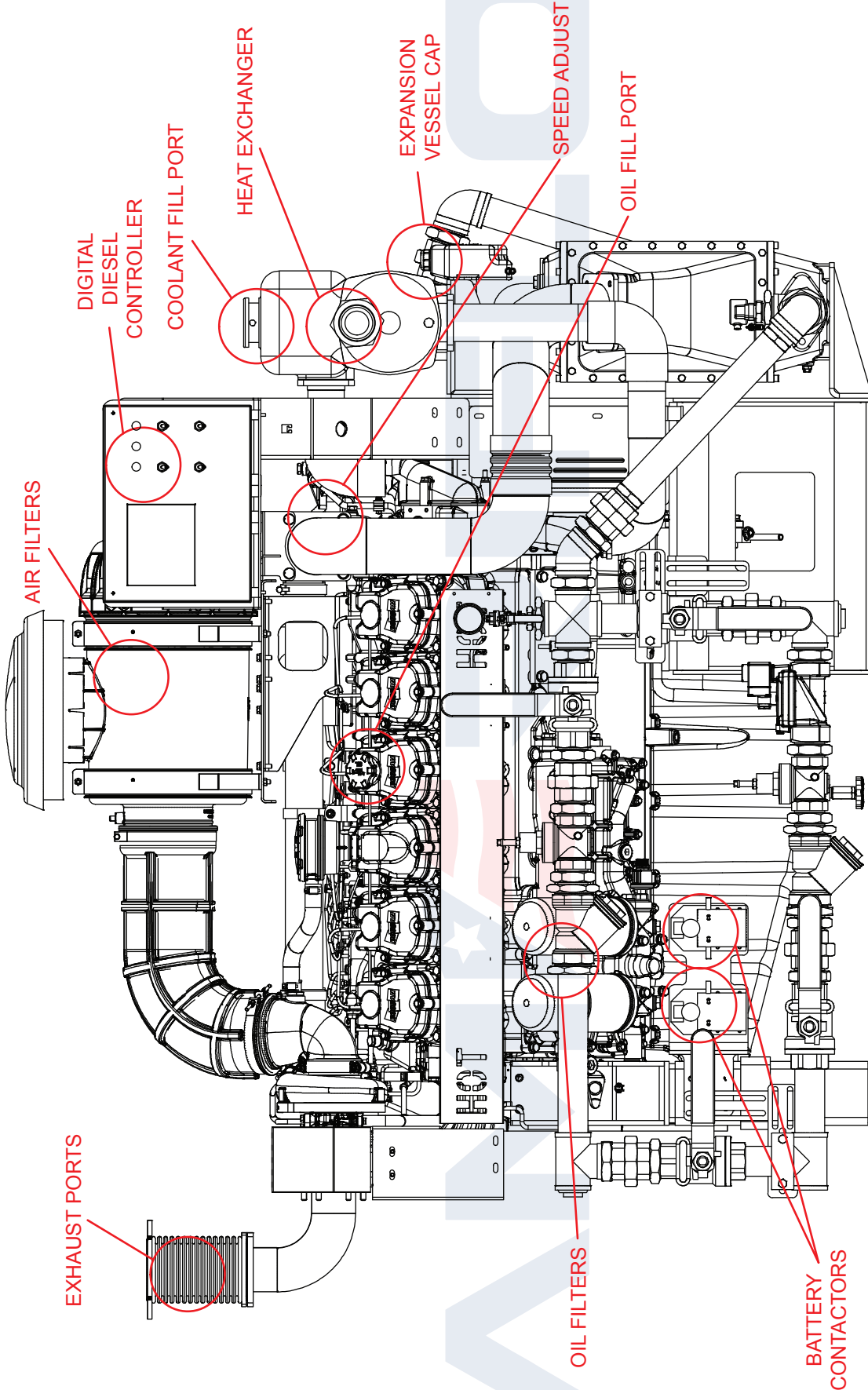


MOUNTING DIMENSIONS

REV	UNITS (IN/MM)
A	CREATION
REV	DESCRIPTION

DATE: 09/01/2020	NAME: INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER	PROJECT:
DATE:	MODEL: AF12-128C	PROJECT:
DATE:	PART NO: AF12-128C-00	SCALE: PAGE OF NONE 1 1
DATE:	MATERIAL:	

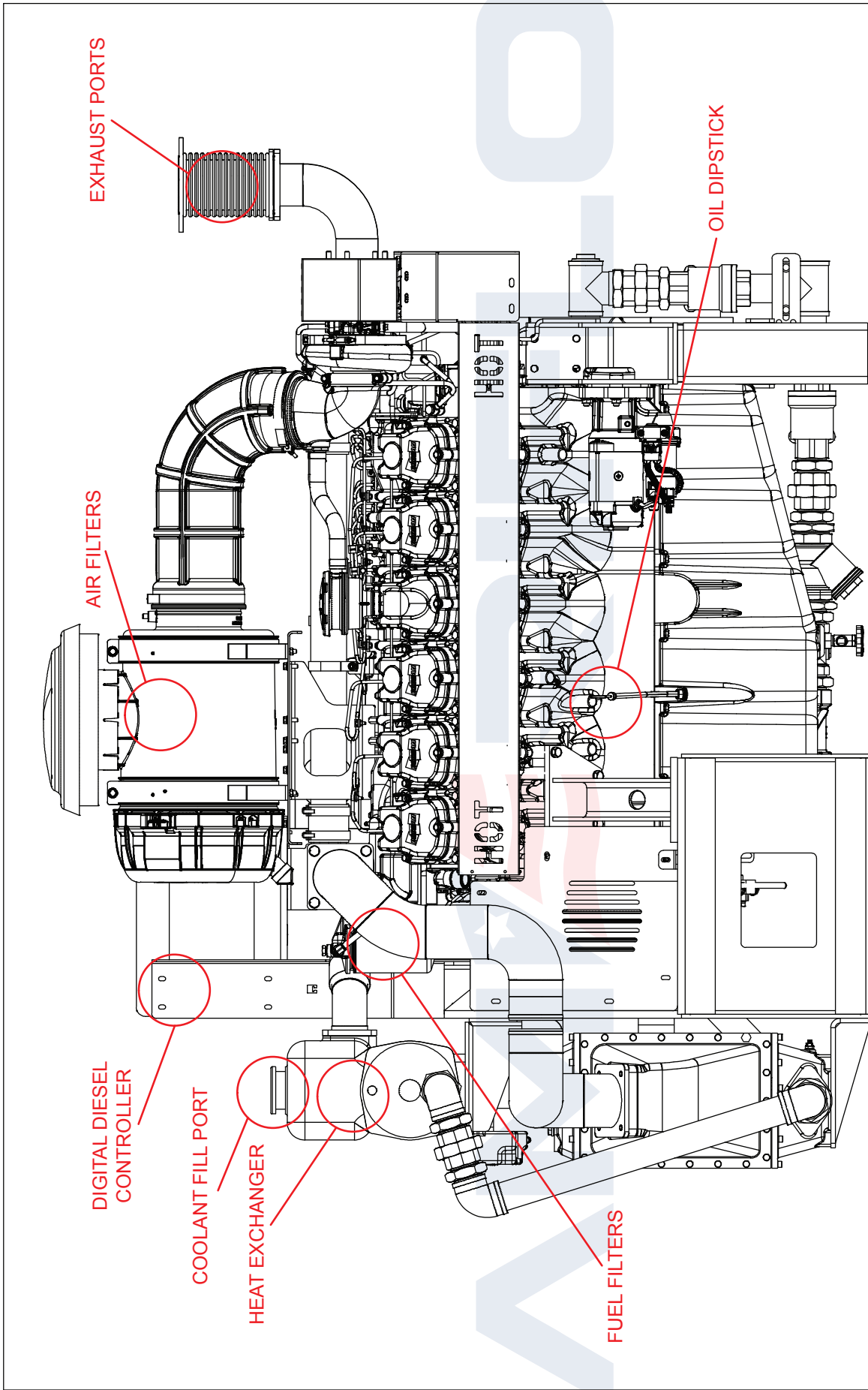
NOTES:
 1. ALL PLUMBING MUST BE SUPPORTED AND/OR ISOLATED SO THAT NO WEIGHT OR STRESS IS APPLIED TO ANY ENGINE COMPONENT.
 2. REFER TO SPECIFIC MODELS' INSTALLATION, OPERATION & MAINTENANCE MANUAL FOR INSTALLATION GUIDELINES.



REV	UNITS	IN (MM)	SCALE:	PAGE	OF
			NONE	1	1
		PROJECT:			
NAME: INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER MODEL AF12-128C		PROJECT:			
DATE: 09/01/2020 DRW BY: MJF	DATE: 09/01/2020 CHK BY: MJF	APPROVED: DATE:		MATERIAL:	
PART NO.: AF12-128C-RIGHT		DATE:			
A		DESCRIPTION		DATE	
REV		DWN		APVD	
MJF		MJF		09/01/2020	
CREATION		DESCRIPTION		DATE	

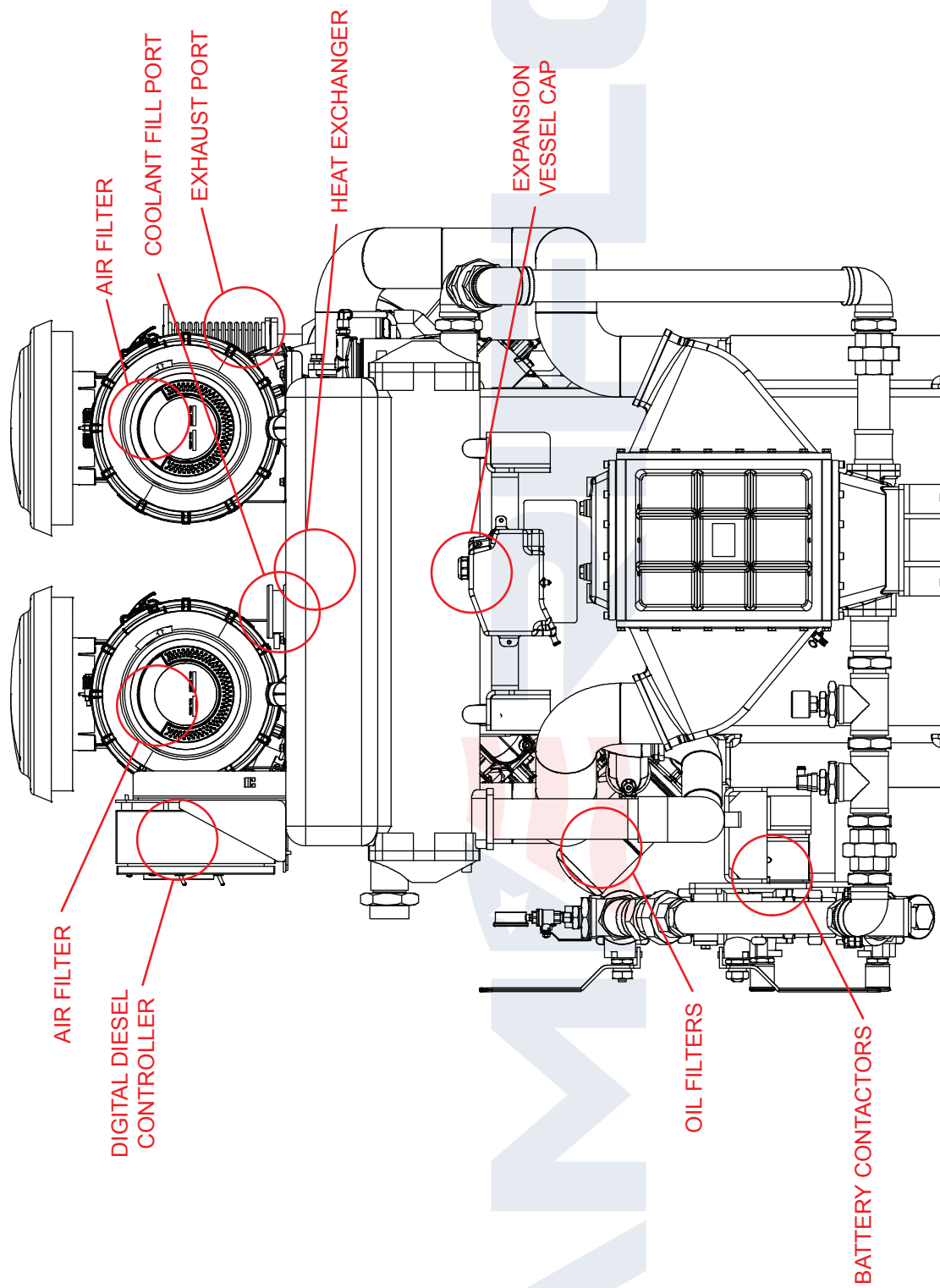
NOTES:

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2. REFER TO SPECIFIC MODELS' INSTALLATION, OPERATION & MAINTENANCE MANUAL FOR INSTALLATION GUIDELINES.



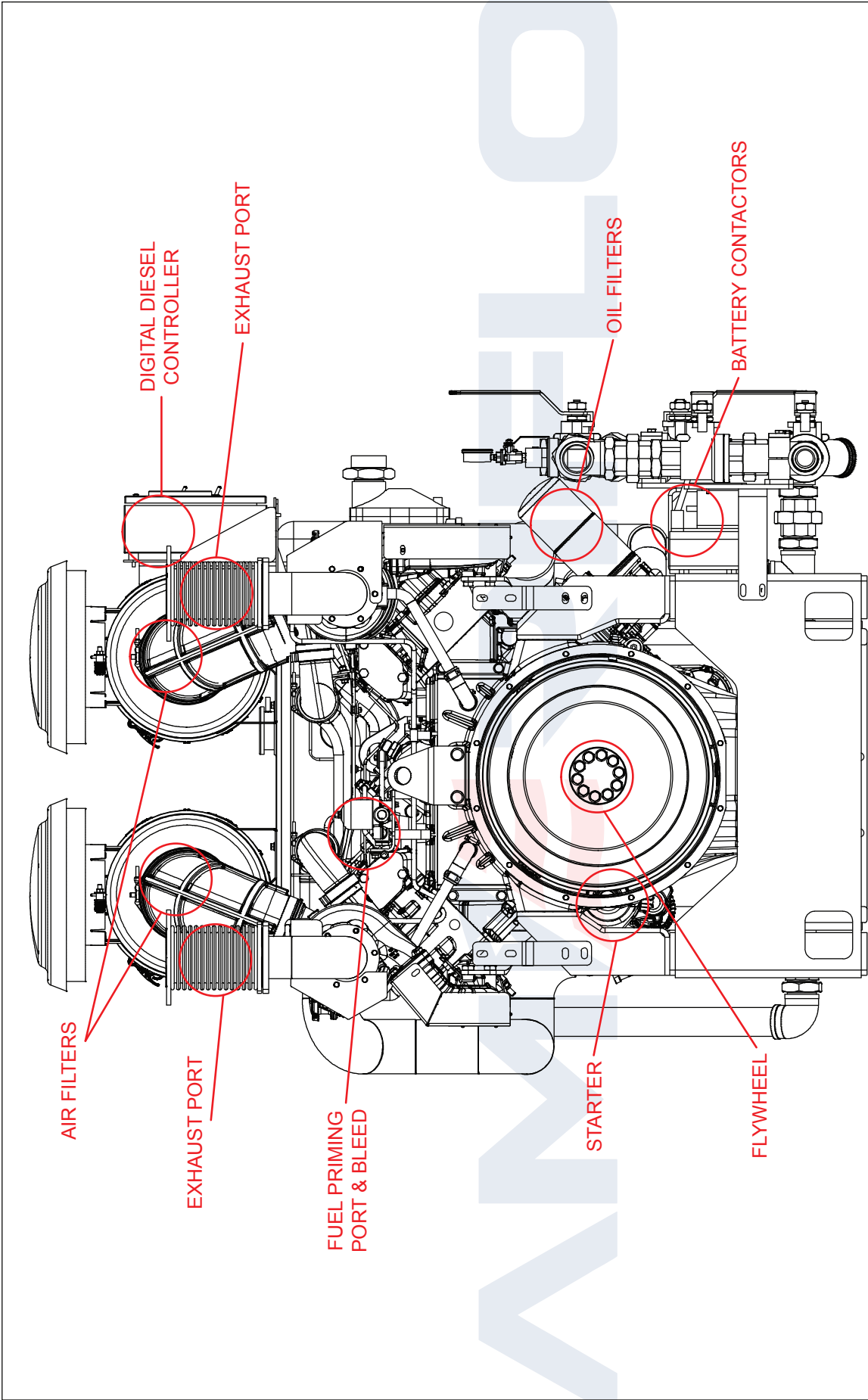
REV											
UNITS	IN (MM)										
PROJECT:	INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER										
PROJECT:	MODEL AF12-128C										
PART NO.:	AF12-128C-LEFT										
MATERIAL:											
DATE:	09/01/2020	DATE:	09/01/2020	APPROVED:	DATE:						
DRW BY:	MJF	CHK BY:									
CREATION	MJF	DWN		APVD		DATE					
DESCRIPTION											
REV	A										

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	AMERIFLO	UNITS	IN (MM)
	NAME: INSTALLATION DRAWING DIESEL FIRE PUMP DRIVER MODEL AF12-128C	PROJECTION:	
	DATE: 09/01/2020	PROJECT:	
	DRW BY: MJF	CHK BY:	
	DATE: 09/01/2020	APPROVED: DATE:	
		PART NO.:	AF12-128C-FRONT
		MATERIAL:	NONE
		SCALE:	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.



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)				
		NAME:	INSTALLATION DRAWING		
		DATE:	09/01/2020	DIESEL FIRE PUMP DRIVER	
		CHK BY:	MJF	DATE:	
		APPROVED:		DATE:	
		PART NO.:	AF12-128C-REAR		
		MATERIAL:			
		PROJECT:	PROJECT:		
		SCALE:	NONE	PAGE	1
				OF	1

REV	DESCRIPTION	DWN	APVD	DATE
A	CREATION	MJF		09/01/2020