



**Sales and
Service**

March 24, 2021

Thank you for your inquiry. We are pleased to quote as follows.

ITEM NUMBER	DESCRIPTION	Quantity
1	DQGAS, Diesel Genset, 60Hz, 1500kW-Standby Rating, Tier4 Final U.S. EPA, Stationary Nonemergency Application 1500DQGAS, Diesel Genset, 60Hz, 1500kW [REDACTED] Emissions Certification, Tier 4 Final, Nonroad Compression Ignition Listing - UL 2200 Vibration Isolators - Normal Duty Voltage - 277 / 480, 3 Phase, Wye, 4 Wire Alternator - 60Hz, 3Phase, 480 Volt, 105 / 80C - Standby / Prime Alternator Bearing - Hardened Cartridge Output Terminals - 2 - Hole Lug, NEMA Fuel Filters - Engine, Duplex Control Mounting - Right Facing PowerCommand 3.3 Generator Controller, Paralleling Capable Gauge - Exhaust Gas Temperature Analog Meters - AC Output LCD Control Display AmpSentry™ UL Listed Protective Relay	3



ITEM NUMBER	DESCRIPTION	Quantity
	Display, Running Time	
	Alarm - Audible, Engine Shutdown	
	Signals - Aux, Input / Output	
	Signals - Auxiliary, 16 Inputs / 16 Outputs	
	Control Display Language - English	
	Circuit Breaker or EB or TB - Left Only	
	Circuit Breaker - 2000, Left, 3P, UL 600, IEC 415, UL Serv Ent, 100%	
	Circuit Breaker or Entrance Box-None - Left	
	Bottom Entry, Left	
	CB or EB or TB-None, Right	
	Bottom Entry Chute, Left	
	Engine Starter - 24 Volt DC Motor	
	Engine Air Cleaner - Heavy Duty	
	Battery Charging Alternator	
	Engine Cooling - Radiator, Enhanced High Ambient Air Temperature, Ship Fitted	
	Warning - Low Coolant Level	
	Coolant Heater - 208 / 240 / 480 Volts AC, Below 40F Ambient Temperature	
	Engine Oil Filters, Full Flow with Bypass	
	Test Record - Strip Chart	
	Cummins Certified Test Record	
	Genset Warranty - Comparable to Competition	
	Literature - English	
	Packing - None	
	Tier4 Final Certified	
	DEF supply lines included	
	Oil Sampling Valve	
	Test - Extended, Prime Load, 4 Hour	

NOTE: Quote Total does not include any tax. Quote includes shipping generator to customers location or their yard. No storage at Cummins Facilities.

Details:

Low Coolant Warning is quoted instead of Low Coolant Shutdown.
Quoted MLCB are 100% rated.

Exclusions:

Aftertreatment comes mounted to a skid, the support and structure design is by others.

Fuel tank and enclosure are by others.

Fuel fill and DEF fill are by others.

Any and all offloading or rigging.

Thank you for choosing Cummins.



Tier4 certified diesel generator set QSK50 series engine

1500kW 60Hz



Description

Cummins® commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby, Prime and Continuous duty power applications.

Features

Cummins heavy-duty engine - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Cummins aftertreatment system - Fully integrated power generation systems that are certified to EPA Tier 4 standards. They provide optimum performance, reliability and versatility for stationary Standby, Prime Power and Continuous duty applications.

Permanent Magnet Generator (PMG) - Offers enhanced motor starting and fault clearing short-circuit capability.

Control system - The PowerCommand® digital control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protective relay, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard and enhanced integral set-mounted radiator systems, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor network.

	Standby rating	Prime rating	Continuous rating	Emissions compliance	Data sheets
Model	60 Hz kW (kVA)	60 Hz kW (kVA)	60 Hz kW (kVA)	EPA	60 Hz
DQGAS	1500 (1875)	1365 (1706)	1100 (1375)	T4F certified	D-3537

Generator set specifications

Governor regulation class	ISO8528 Part 1 Class G3
Voltage regulation, no load to full load	+/- 0.5%
Random voltage variation	+/- 0.5%
Frequency regulation	Isochronous
Random frequency variation	+/- 0.25%
Radio frequency emissions compliance	IEC 801.2 through IEC 801.5; MIL STD 461C, Part 9

Engine specifications

Bore	159 mm (6.25 in)
Stroke	159 mm (6.25 in)
Displacement	50.3 litres (3067 in ³)
Configuration	Cast iron, V 16 cylinder
Battery capacity	1800 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	55 amps
Starting voltage	24 volt, negative ground
Fuel system	Cummins' modular common rail system
Fuel filter	Two stage spin-on fuel filter and water separator system. Stage 1 has a three element 7 micron filter and Stage 2 has a three element 3 micron filter.
Air cleaner type	Dry replaceable element
Lube oil filter type(s)	Four spin-on, combination full flow filter and bypass filters
Standard cooling system	High ambient cooling system

Aftertreatment specifications

Model	CA452
Emissions certification	Tier4F certified
Duct diameter	1143 mm (45 in)
Duct quantity	2
Components included	Insulated aftertreatment ducts, saddle supports for aftertreatment, control panel, DEF tank, optional heater with ILB, harness from control panel to engine and AFT, lifting tool. Assembly required at site.

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Single bearing, flexible disc
Insulation system	Class H
Standard temperature rise	125 °C Standby/105 °C Prime
Exciter type	Permanent Magnet Generator (PMG)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform Total Harmonic Distortion (THDV)	< 5% no load to full linear load, < 3% for any single harmonic
Telephone Influence Factor (TIF)	< 50% per NEMA MG1-22.43
Telephone Harmonic Factor (THF)	< 3%

Available voltages

60 Hz Line-Neutral/Line-Line

- | | | |
|-----------|-----------|-------------|
| • 220/380 | • 240/416 | • 255/440 |
| • 277/480 | • 347/600 | • 2400/4160 |

Note: Consult factory for other voltages.

Generator set options and accessories

Engine

- 208/240/480 V thermostatically controlled coolant heater for ambient above and below 4.5 °C (40 °F)
- Dual 120/208/240/480 V 300 W lube oil heaters
- Heavy duty air cleaner
- Triplex fuel filter

Alternator

- 80 °C rise
- 105 °C rise
- 125 °C rise
- 150 °C rise
- 120/240 V 300 W anti-condensation heater
- Increased motor starting capabilities

Control panel

- PowerCommand 3.3
- Multiple language support
- 120/240 V 100 W control anti-condensation heater
- Exhaust pyrometer
- Ground fault indication
- Remote annunciator panel
- Paralleling relay package
- Shutdown alarm relay package
- Audible engine shutdown alarm
- AC output analog meters (bargraph)

Aftertreatment system

- DEF lines
- DEF freeze protection kit
- SCR only configuration
- SCR w/heater configuration
- SCR w/heater and DPF

Cooling system

- Remote cooling
- Enhanced high ambient temperature (50 °C)

Generator set

- Battery
- Battery charger
- Bottom entry chute
- Circuit breaker – skid mounted up to 3000 Amp
- Circuit breaker auxiliary and trip contacts
- IBC and OSHPD seismic certification
- In-skid AVM
- LV and MV entrance box
- Spring isolators
- 2 year warranty
- 5 year warranty
- 10 year major components warranty

Note: Some options may not be available on all models - consult factory for availability.

PowerCommand 3.3 – control system



An integrated microprocessor based generator set control system providing voltage regulation, engine protection, alternator protection, operator interface and isochronous governing. Refer to document S-1570 for more detailed information on the control.

AmpSentry – Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.

Power management – Control function provides battery monitoring and testing features and smart starting control system.

Advanced control methodology – Three phase sensing, full wave rectified voltage regulation, with a PWM output for stable operation with all load types.

Communications interface – Control comes standard with PCCNet and Modbus interface.

Regulation compliant – Prototype tested: UL, CSA and CE compliant.

Service – InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

Easily upgradeable – PowerCommand controls are designed with common control interfaces.

Reliable design – The control system is designed for reliable operation in harsh environment.

Multi-language support

Operator panel features

Operator/display functions

- Displays paralleling breaker status
- Provides direct control of the paralleling breaker
- 320 x 240 pixels graphic LED backlight LCD
- Auto, manual, start, stop, fault reset and lamp test/panel lamp switches
- Alpha-numeric display with pushbuttons
- LED lamps indicating genset running, remote start, not in auto, common shutdown, common warning, manual run mode, auto mode and stop

Paralleling control functions

- First Start Sensor™ system selects first genset to close to bus
- Phase lock loop synchronizer with voltage matching
- Sync check relay
- Isochronous kW and kVar load sharing
- Load govern control for utility paralleling
- Extended paralleling (peak shave/base load)
- Digital power transfer control, for use with a breaker pair to provide open transition, closed transition, ramping closed transition, peaking and base load functions

Alternator data

- Line-to-Neutral and Line-to-Line AC volts
- 3-phase AC current
- Frequency
- kW, kVar, power factor kVA (three phase and total)

Engine data

- DC voltage
- Engine speed
- Lube oil pressure and temperature
- Coolant temperature
- Comprehensive FAE data (where applicable)

Other data

- Genset model data
- Start attempts, starts, running hours, kW hours
- Load profile (operating hours at % load in 5% increments)
- Fault history
- Data logging and fault simulation (requires InPower)

Standard control functions

Digital governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation

- Integrated digital electronic voltage regulator
- 3-phase, 4-wire Line-to-Line sensing
- Configurable torque matching

AmpSentry AC protection

- AmpSentry protective relay
- Over current and short circuit shutdown
- Over current warning
- Single and three phase fault regulation
- Over and under voltage shutdown
- Over and under frequency shutdown
- Overload warning with alarm contact
- Reverse power and reverse Var shutdown
- Field overload shutdown

Engine protection

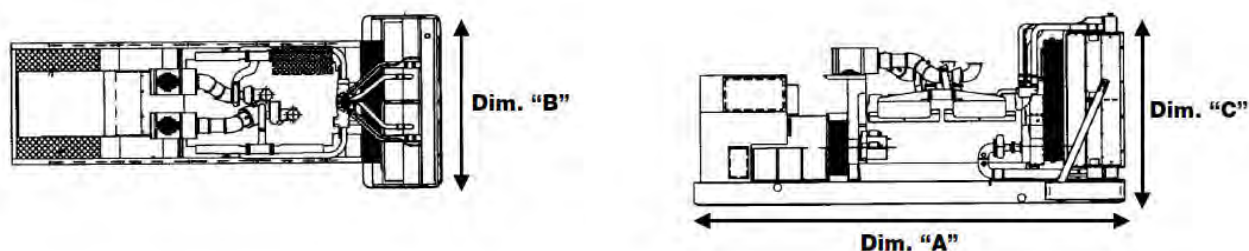
- Battery voltage monitoring, protection and testing
- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- Fail to start (over crank) shutdown
- Fail to crank shutdown
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown
- Fuel-in-rupture-basin warning or shutdown
- Full authority electronic engine protection

Control functions

- Time delay start and cool down
- Real time clock for fault and event time stamping
- Exerciser clock and time of day start/stop
- Data logging
- Cycle cranking
- Load shed
- Configurable inputs and outputs (4)
- Remote emergency stop

Options

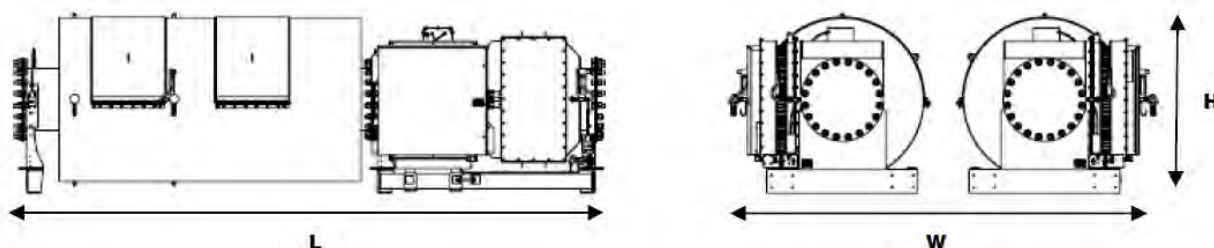
- Auxiliary output relays (2)



Generator set weights and dimensions

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set weight* dry kg (lbs)	Set weight* wet kg (lbs)
DQGAS	6381 (251)	2285 (90)	2468 (97)	12733 (28071)	13366 (29467)

* Weights represent a set with standard features. See outline drawings for weights of other configurations.



Aftertreatment weights and dimensions

Aftertreatment model number*	Genset model	L (Length) mm (in.)	W (minimum Width) mm (in.)	H (Height) mm (in.)	Weight of aftertreatment system (lbs)
CA452*	DQGAS	4651 (183)	3173 (125)	1260 (50)	8734

* Due to multiple configurations of the CA452 model, maximum weight of the model is shown.

Note: Dimension and weights are subject to change. See submittal data for exact details.

Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.		The generator set is available listed to UL 2200 for all 60 Hz low voltage models, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage. Circuit breaker assemblies are UL 489 Listed for 100% continuous operation and also UL 869A Listed Service Equipment.
	All low and medium voltage models are CSA certified to product class 4215-01.	U.S. EPA	Engine certified to US EPA Nonroad 40CFR1039 and Stationary (Emergency and Non-Emergency) US EPA NSPS, 60CFR Subpart IIII Tier4 Emissions Standards.
	The Aftertreatment System bears the ETL Listed Mark as proof of conformity to NFPA 79, UL 61010C-1, and CSA 22.2 No. 61010-1-12.		
	This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.	International Building Code	The genset package is certified for seismic application in accordance with the following International Building Code: IBC2015.

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™





Sound data

1500DQGAS 60 Hz

Sound pressure level @ 7 meters, dB(A)

See notes 1-6 listed below

Configuration		Measurement location number								8 Position average
		1	2	3	4	5	6	7	8	
Standard – unhooded high ambient cooling system	Infinite exhaust	94	94	94	95	95	94	95	94	94
Standard – unhooded enhanced high ambient cooling system	Infinite exhaust	91	93	94	96	98	97	95	94	95
Standard – unhooded remote cooled	Infinite exhaust	88	90	92	89	91	90	92	91	90

Sound power level, dB(A)

See notes 2-4, 7, 8 listed below

Configuration		Octave band center frequency (Hz)									Overall sound power level
		31.5	63	125	250	500	1000	2000	4000	8000	
Standard – unhooded high ambient cooling system	Infinite Exhaust	69	85	104	114	118	117	114	110	108	122
Standard – unhooded enhanced high ambient cooling system	Infinite Exhaust	71	90	109	115	121	120	116	112	109	125
Standard – unhooded remote cooled	Infinite Exhaust	66	83	100	107	113	113	112	107	107	119

Exhaust sound power level, dB(A)

See note 2,9 listed below

Open exhaust (no muffler rated load)	Octave band center frequency (Hz)								Overall sound power level
	31.5	63	125	250	500	1000	2000	4000	
	74	97	120	122	128	132	130	130	128

Exhaust aftertreatment system insertion loss (IL), dB(A)

Exhaust aftertreatment system - insertion loss (IL)	AT configuration	Octave Band Center Frequency (Hz)								Insertion loss
		31.5	63	125	250	500	1000	2000	4000	
	T4i, 2x45	7	8	8	12	21	24	40	43	40
	T4i w/ILB, 2x45	7	12	16	14	27	33	43	45	41
	T4fc, 2x45	11	14	26	16	34	46	47	46	41

Note:

1. Position 1 faces the generator front per ISO 8528-10. The positions proceed around the generator set in a counter-clockwise direction in 45° increments. All positions are at 7 m (23 ft) from the surface of the generator set and 1.2 m (48") from floor level.
2. Sound levels are subject to instrumentation, measurement, installation and manufacturing variability.
3. Data based on full rated load. Sound data with remote-cooled generator sets are based on rated loads without cooling fan noise.
4. Sound data for generator set with infinite exhaust do not include exhaust noise.
5. Sound pressure levels are measured per ANSI S1.13 and ANSI S12.18, as applicable.
6. Reference sound pressure is 20 µPa.
7. Sound power levels per ISO 3744 and ISO 8528-10, as applicable.
8. Reference power = 1 pw (10⁻¹² W).
9. Exhaust sound power levels are per ISO 6798, as applicable.



2021 EPA Tier4 Certified Exhaust Emission Compliance Statement 1500DQGAS Stationary Non-Emergency 60 Hz Diesel generator set

Compliance Information:

The engine used in this generator set complies with Tier 4 emissions limit of U.S. EPA New Source Performance Standards for stationary non-emergency engines under the provisions of 40 CFR 60 Subpart IIII when tested per ISO8178 D2.

Engine Manufacturer:	Cummins Inc.
EPA Certificate Number:	MCEXL78.0AAA-036
Effective Date:	07/9/2020
Date Issued:	07/9/2020
EPA Engine Family (Cummins Emissions Family):	MCEXL78.0AAA

Engine information:

Model:	QSK50-G8	Bore:	6.25 in. (159 mm)
Engine Nameplate HP:	2220	Stroke:	6.25 in. (159 mm)
Type:	4 cycle, 60°V, 16 Cylinder Diesel	Displacement:	3067 cu. in. (50.3 liters)
Aspiration:	Turbocharged and Low Temperature Aftercooled (2P/2L)	Compression Ratio:	13.9:1
Emission control device:	SCR & DPF		

Diesel Fuel Emissions Limits

D2 Cycle Exhaust Emissions

	Grams per BHP-hr				Grams per kW _m -hr			
	<u>NO_x</u>	<u>NMHC</u>	<u>CO</u>	<u>PM</u>	<u>NO_x</u>	<u>NMHC</u>	<u>CO</u>	<u>PM</u>
Test results	0.40	0.01	1.0	0.00	0.54	0.02	1.4	0.00
EPA Emissions Limit	0.50	0.14	2.6	0.02	0.67	0.19	3.5	0.03

Test methods: EPA emissions recorded per 40 CFR Part 60, 89, 1039, 1065 and weighted at load points prescribed in the regulations for constant speed engines.

Diesel fuel specifications: Cetane number: 40-50. Reference: ASTM D975 No. 2-D, 7-15 ppm Sulfur.

Reference conditions: Air inlet temperature: 25°C (77°F), Fuel inlet temperature: 40°C (104°F). Barometric pressure: 100 kPa (29.53 in Hg), Humidity: 10.7 g/kg (75 grains H₂O/lb) of dry air; required for NO_x correction, Restrictions: Intake restriction set to a maximum allowable limit for clean filter; Exhaust back pressure set to a maximum allowable limit.

Tests conducted using alternate test methods, instrumentation, fuel or reference conditions can yield different results. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.



Exhaust emission data sheet

DQGAS

60 Hz Diesel generator set

EPA emission

Engine information:

Model:	Cummins Inc. QSK50-G8	Bore:	6.25 in. (159 mm)
Type:	4 Cycle, 60° V, 16 cylinder diesel	Stroke:	6.25 in. (159 mm)
Aspiration:	Turbocharged and low temperature after-cooled (2 P/2 L)	Displacement:	3067 cu. in. (50.3 liters)
Compression ratio:	15.0:1		
Emission control device:	SCR & DPF		
Emission level:	Stationary non-emergency, Tier4 final (with DPF)		

	<u>1/4</u>	<u>1/2</u>	<u>3/4</u>	<u>Full</u>	<u>Full</u>	<u>Full</u>
<u>Performance data</u>	<u>Standby</u>	<u>Standby</u>	<u>Standby</u>	<u>Standby</u>	<u>Prime</u>	<u>Continuous</u>
BHP @ 1800 RPM (60 Hz)	555	1110	1665	2220	1971	1774
Fuel consumption (Gal/Hr)	34.1	61.9	84.1	109.9	98	89
Exhaust gas flow (CFM)	5345	8675	10365	12105	11230	10297
Exhaust gas temperature (°F)	755	815	860	965	905	844

Exhaust emission data

HC (Total unburned hydrocarbons)	0.03	0.02	0.01	0.01	0.01	0.01
NOx (Oxides of nitrogen as NO2)	0.50	0.38	0.31	0.34	0.33	0.32
CO (Carbon monoxide)	1.86	0.98	0.66	1.05	0.87	0.74
PM (Particular matter)	0.00	0.00	0.00	0.00	0.00	0.00
SO2 (Sulfur dioxide)	0.01	0.01	0.01	0.01	0.01	0.01
Smoke (Bosch)	0.00	0.00	0.00	0.00	0.00	0.00

All values are Grams/HP-Hour, Smoke is Bosch #

Test conditions

Data is representative of steady-state engine speed (± 36 RPM) at designated genset loads. Pressures, temperatures, and emission rates were stabilized.

Fuel specification:	ASTM D975 No. 2-D diesel fuel with ULSD, and 40-48 cetane number.
Fuel temperature	99 $\pm$ 9 °F (at fuel pump inlet)
Intake air temperature:	77 $\pm$ 9 °F
Barometric pressure:	29.6 $\pm$ 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here are representative of test data taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

REL NO	REV	NO	REVISION	DWN	CKD	APVD	DATE
ECO-171947	B	1	PRODUCTION RELEASE	LDE	CJF	T.SCHIEBE	28AUG17

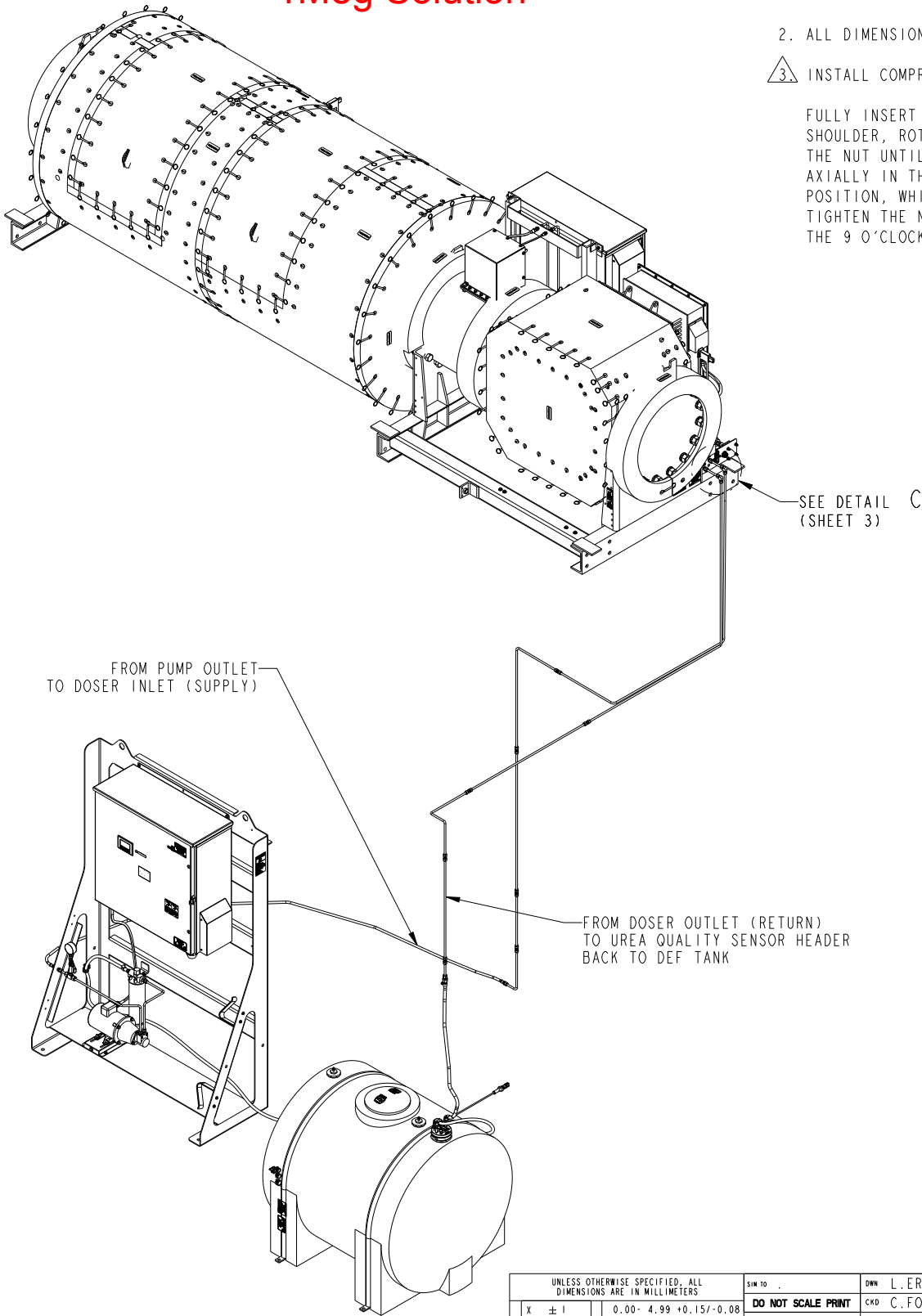
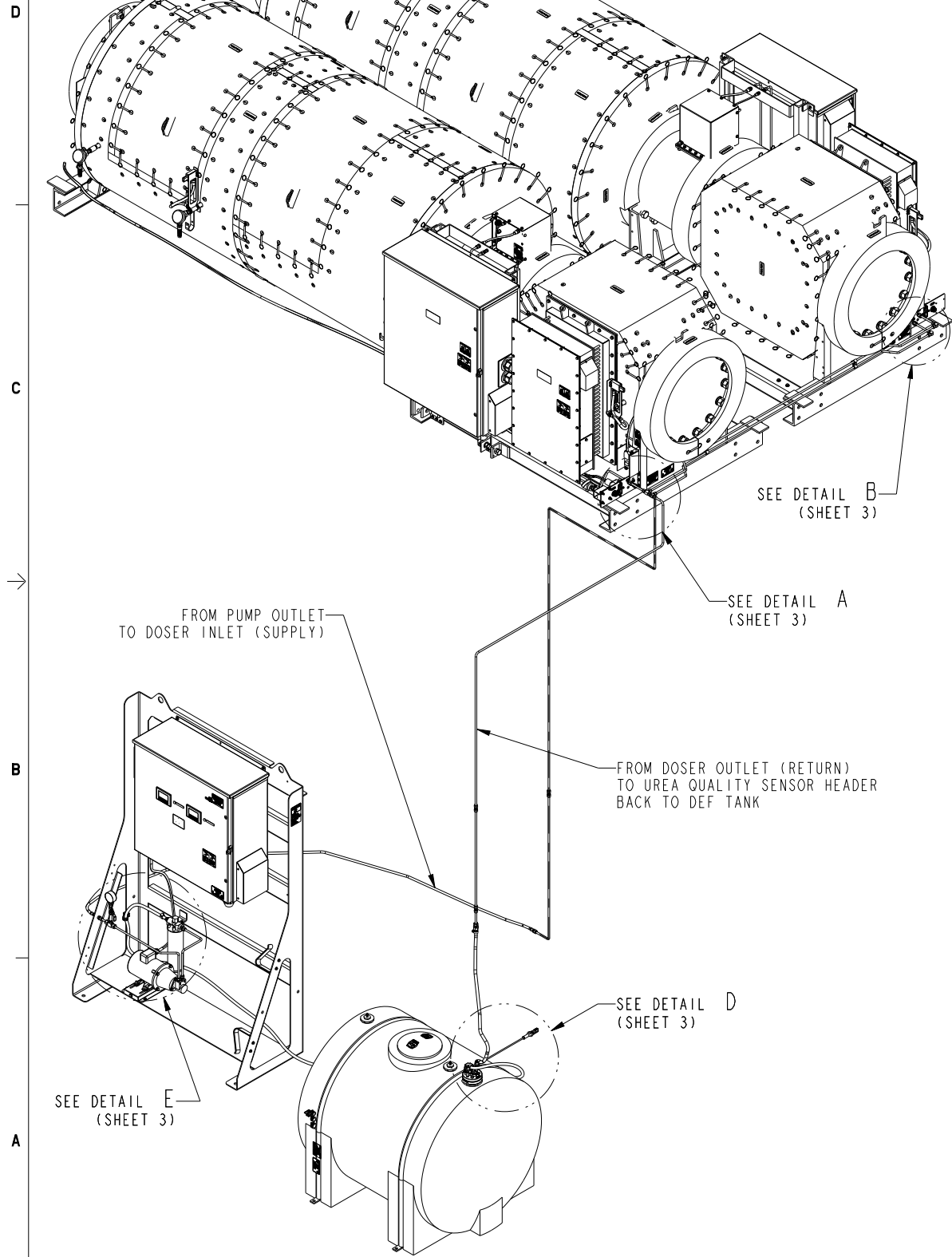
1.5Meg Solution

DEF LINE INSTALLATION
MODEL- CA451/CA452/CA542
FEATURE CODE- L181-2

1Meg Solution

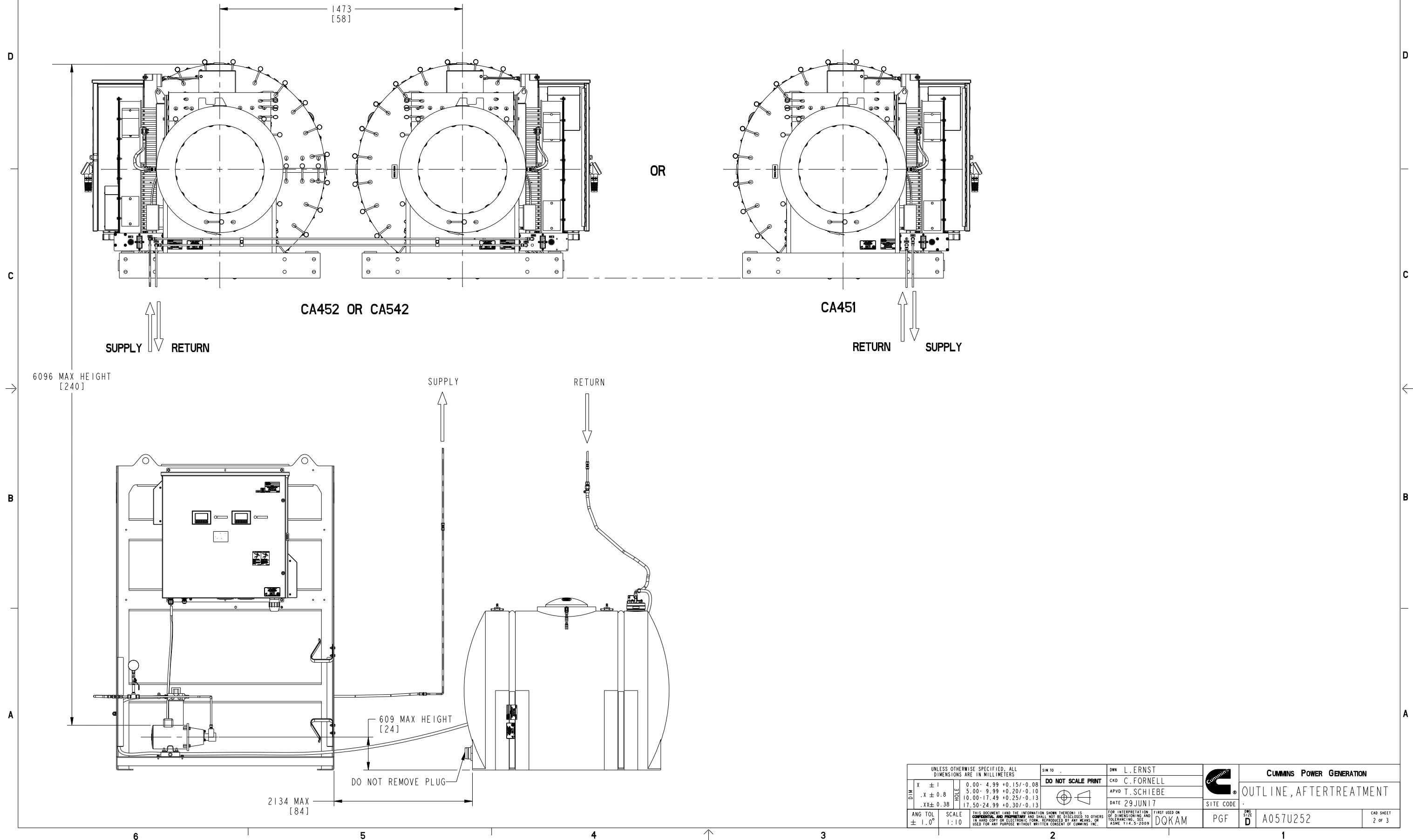
- NOTE:
- ALL DIMENSIONS ARE REFERENCE UNLESS SPECIFICALLY TOLERANCED.
 - ALL DIMENSIONS IN [] ARE INCHES.
 - INSTALL COMPRESSION FITTING AS PER INSTRUCTION BELOW:

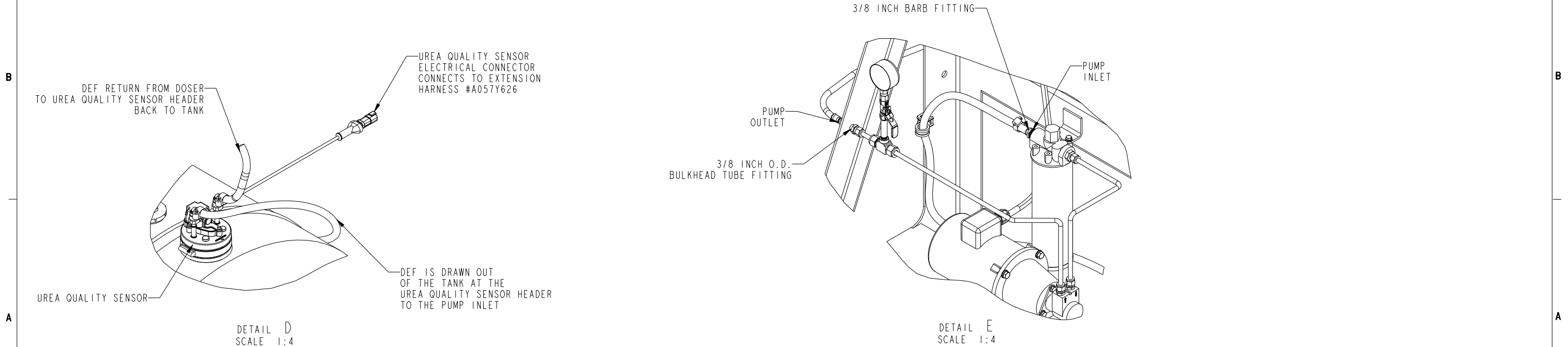
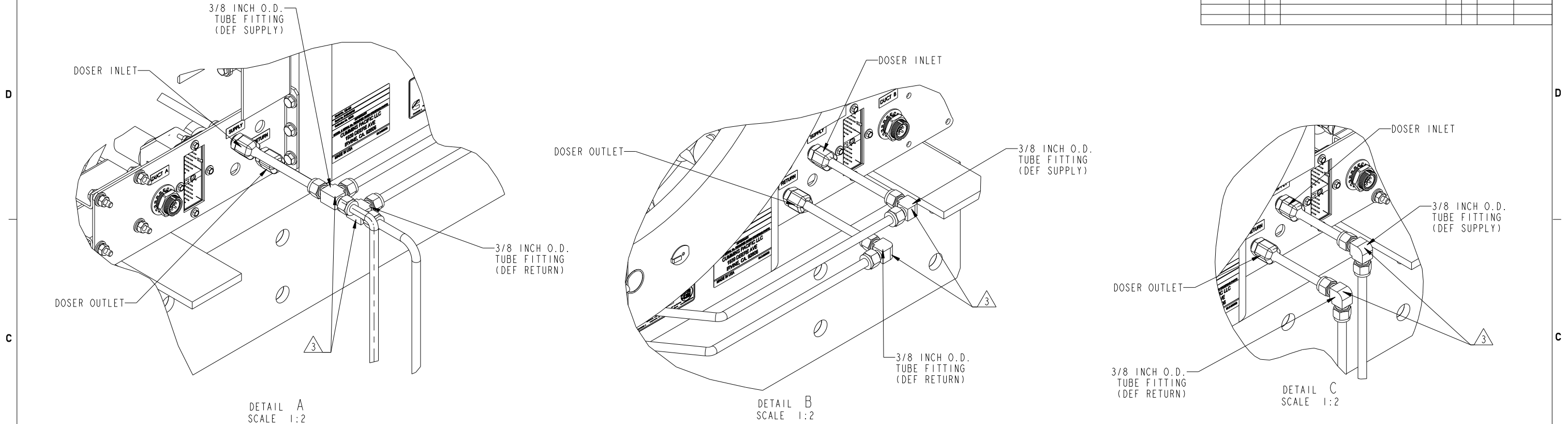
FULLY INSERT THE TUBE INTO THE FITTING AND AGAINST THE SHOULDER, ROTATE THE NUT FINGER-TIGHT. FURTHER TIGHTEN THE NUT UNTIL THE TUBE WILL NOT TURN BY HAND OR MOVE AXIALLY IN THE FITTING. MARK THE NUT AT THE 6 O'CLOCK POSITION, WHILE HOLDING THE FITTING BODY STEADY, TIGHTEN THE NUT ONE AND ONE-QUARTER TURNS TO THE 9 O'CLOCK POSITION. (SEE SHEET 3)



UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS			SIM TO	DWN L.ERNST		CUMMINS POWER GENERATION		
DIM	X ± 1 .X ± 0.8 .XX ± 0.38	0.00- 4.99 +0.15/-0.08 5.00- 9.99 +0.20/-0.10 10.00-17.49 +0.25/-0.13 17.50-24.99 +0.30/-0.13	DO NOT SCALE PRINT	CKD C.FORNELL APVD T.SCHIEBE DATE 29JUN17		SITE CODE	OUTLINE, AFTERTREATMENT	
ANG TOL	± 1.0°	SCALE 1:16	THIS DOCUMENT (AND THE INFORMATION SHOWN THEREON) IS CONFIDENTIAL AND PROPRIETARY AND SHALL NOT BE DISCLOSED TO OTHERS IN HARD COPY OR ELECTRONIC FORM, REPRODUCED BY ANY MEANS, OR USED FOR ANY PURPOSE WITHOUT WRITTEN CONSENT OF CUMMINS INC.				FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5-2009	CAD SHEET 1 OF 3
				FIRST USED ON DQKAM	PGF	D	A057U252	

REL NO	REV	NO	REVISION	DWN	CKD	APVD	DATE
ECO-171947	B	1	PRODUCTION RELEASE	LDE	CJF	T.SCHIEBE	28AUG17





UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS				SIM TO	DWN	L.ERNST		CUMMINS POWER GENERATION	
DIM	X ± 1	0.00 - 4.99 +0.15/-0.08	DO NOT SCALE PRINT		CKD	C.FORNELL		OUTLINE, AFTERTREATMENT	
	.X ± 0.8	5.00 - 9.99 +0.20/-0.10			APVD	T.SCHIEBE			
	.XX ± 0.38	10.00 - 17.49 +0.25/-0.13			DATE	29JUN17			
		17.50 - 24.99 +0.30/-0.13							
ANG TOL	SCALE	THIS DOCUMENT (AND THE INFORMATION SHOWN THEREON) IS CONFIDENTIAL AND PROPRIETARY AND SHALL NOT BE DISCLOSED TO OTHERS IN HARD COPY OR ELECTRONIC FORM, REPRODUCED BY ANY MEANS, OR USED FOR ANY PURPOSE WITHOUT WRITTEN CONSENT OF CUMMINS INC.			FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5-2009				
± 1.0°	1:16					DQKAM	PGF	A057U252	CAD SHEET 3 of 3

Part A057U252 B

Description	Legacy Name	External Regulations	Application Status	Release Phase Code	Security Classification	Alternates
OUTLINE,AFTERTREATMENT	A057U252	No External Regulations Apply	Production & Service	Production	Internal use Only	

Part Specifications :A057U252 B

Name	Description	Legacy Name
A030B356	SPECIFICATION,MATERIAL	CES10903
A057U253	DRAWING,ENGINEERING	A057U253

Part A041V017 D

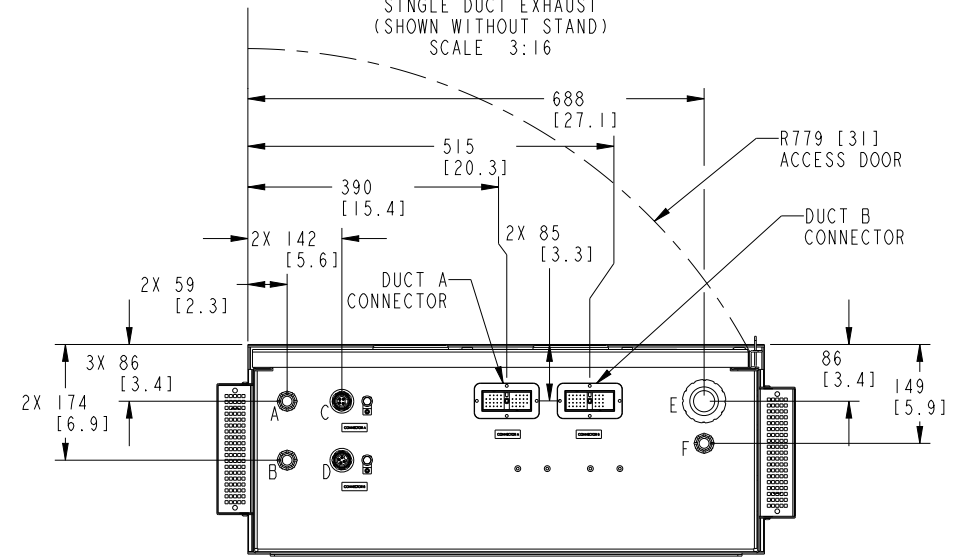
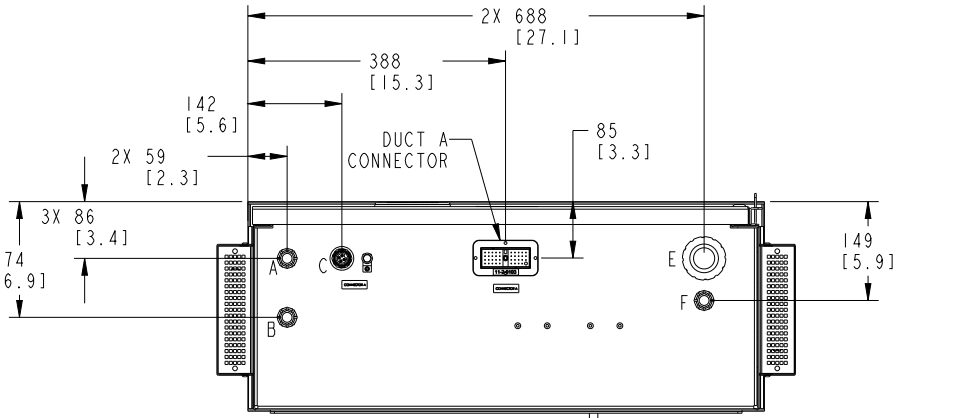
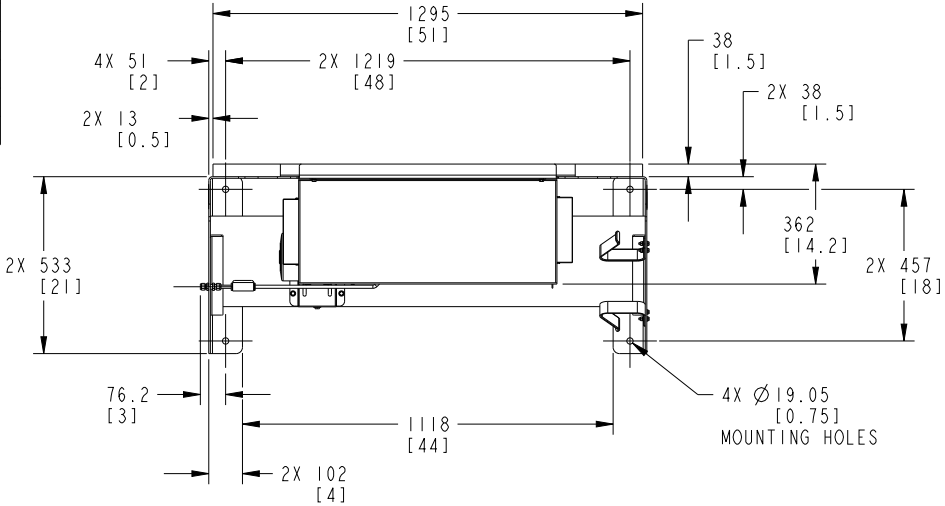
Description	Legacy Name	External Regulations	Application Status	Release Phase Code	Security Classification	Alternates
OUTLINE,AFTERTREATMENT	A041V017	None	Production Only	Production	Proprietary	

Part Specifications :A041V017 D

Name	Description	Legacy Name
A030B356	SPECIFICATION,MATERIAL	CES10903
A041V018	DRAWING,ENGINEERING	A041V018

REL NO	REV	NO	REVISION	DWN	CKD	APVD	DATE
ECO-171893	B	1	PRODUCTION RELEASE	LDE	CJF	T.SCHIEBE	28AUG17
		2	ZONE B3; 965 [38] WAS 940 [37]	LDE	CJF	T.SCHIEBE	28AUG17
		3	ZONE A3; DIM "E" WAS 630 [24.8] AND ADD DIM "E" CHART	LDE	CJF	T.SCHIEBE	28AUG17
		4	NOTE 3 WAS "WEIGHT FOR ASSEMBLY OPTION 1: 172 KG [379 LBS]"	LDE	CJF	T.SCHIEBE	28AUG17
		5	NOTE 4 WAS "WEIGHT FOR ASSEMBLY OPTION 2: 190 KG [420 LBS] (SEE SHEET 2)"	LDE	CJF	T.SCHIEBE	28AUG17
		6	SEE SHEET 2	LDE	CJF	T.SCHIEBE	28AUG17

- NOTES:
- ALL DIMENSIONS ARE REFERENCE UNLESS SPECIFICALLY TOLERANCED.
 - ALL DIMENSIONS IN [] ARE INCHES.
 - WEIGHT FOR ASSEMBLY OPTION 1:
DUAL DUCT EXHAUST WITHOUT COLD WEATHER HEATER 172 KG [380 LBS]
SINGLE DUCT EXHAUST WITHOUT COLD WEATHER HEATER 171 KG [378 LBS]
 - WEIGHT FOR ASSEMBLY OPTION 2 (SEE SHEET 2):
DUAL DUCT EXHAUST WITH COLD WEATHER HEATER 191 KG [421 LBS]
SINGLE DUCT EXHAUST WITH COLD WEATHER HEATER 190 KG [419 LBS]



OPTION 1: WITHOUT COLD WEATHER HEATER		DIM "E"
DUAL DUCT EXHAUST		635 [25]
SINGLE DUCT EXHAUST		630 [24.8]

OPTION 1: CONTROL PANEL WITHOUT COLD WEATHER HEATER
DUAL DUCT EXHAUST CONTROL PANEL SHOWN
SEE FIGURE 1 FOR SINGLE DUCT EXHAUST CONTROL PANEL

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS				SIN TO		DWN L.ERNST		CUMMINS POWER GENERATION	
DO NOT SCALE PRINT				C/KD C.FORNELL		CUMMINS		OUTLINE, CONTROL PANEL	
DATE 23JUN17				APVD T.SCHIEBE		SITE CODE		(SPEC C)	
FIRST USED ON				DATE 23JUN17		PGF		A057U250	
FOR INTERPRETATION OF DIMENSIONS AND TOLERANCING, SEE ASME Y14.5-2009				DQKAM		D		1 OF 2	

CUSTOMER CABLE INLET			
DESIGNATION	SIZE	CORD RANGE	DESCRIPTION
A	0.5 IN	0.310-0.560 IN	120 VAC INTO PANEL
B	0.5 IN	0.310-0.560 IN	230 VAC OUT TO PUMP
C	0.5 IN	0.310-0.560 IN	STEPPER MOTOR A
D	0.5 IN	0.310-0.560 IN	STEPPER MOTOR B
E	1.25 IN	1.270-1.470 IN	INPUT FOR CUSTOMER CONNECTIONS
F	0.5 IN	0.310-0.560 IN	TESTING INPUT FOR COLD WEATHER OPTION

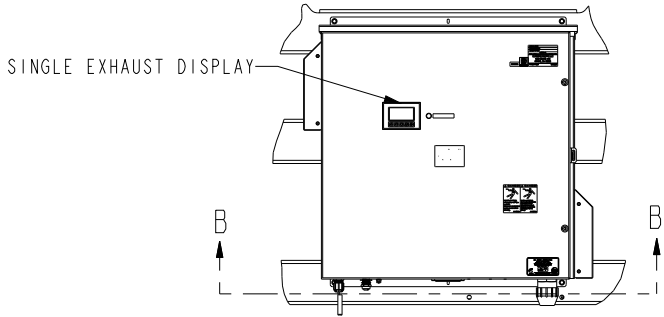
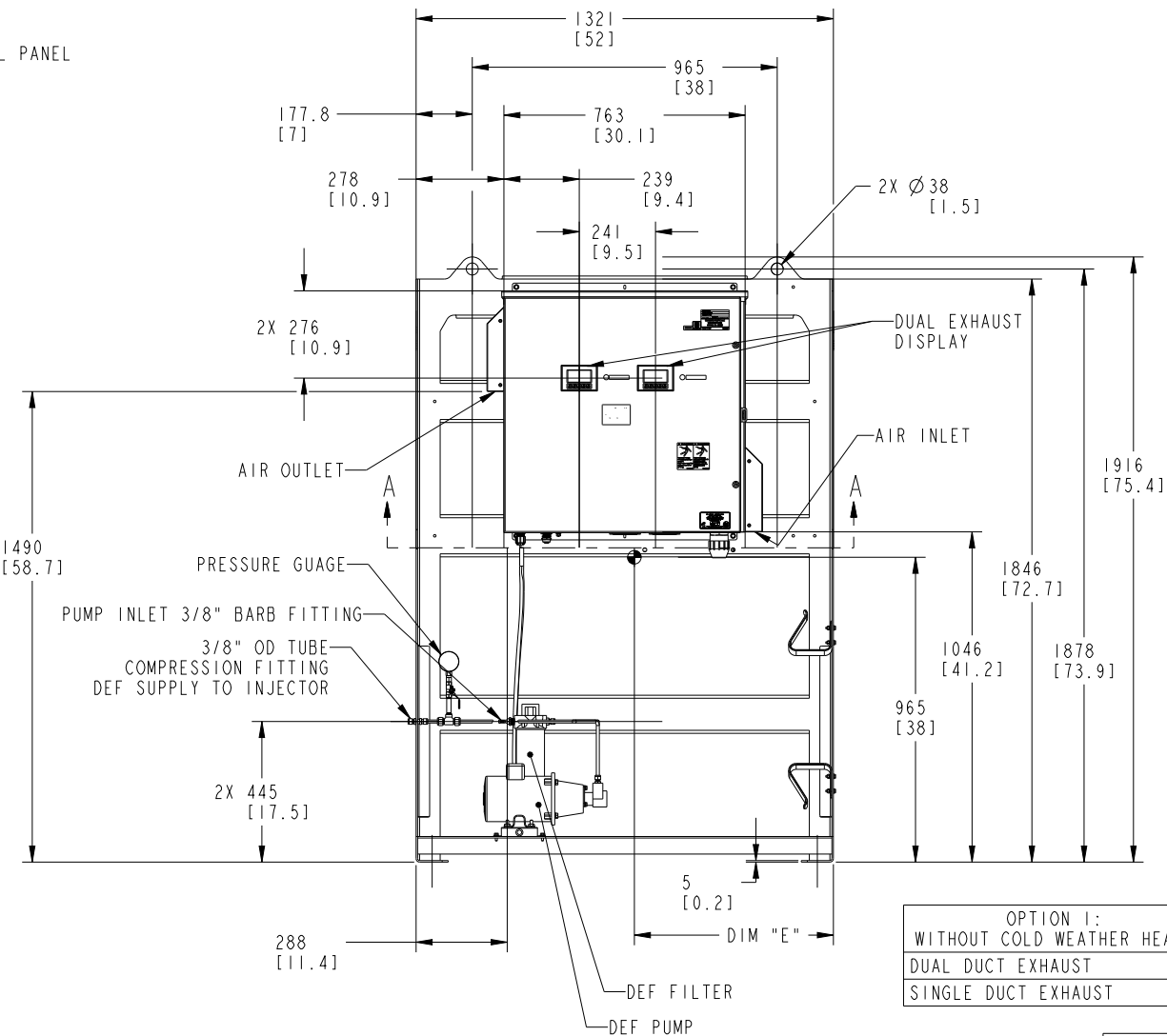
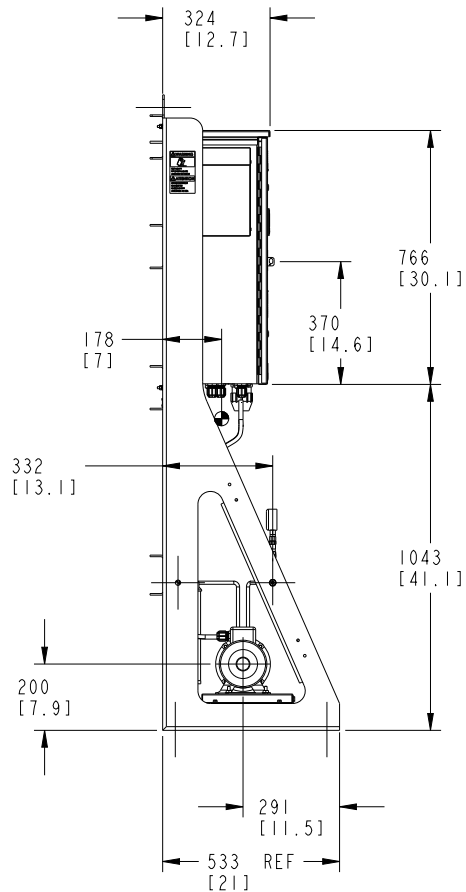


FIGURE 1
SINGLE DUCT EXHAUST CONTROL PANEL SHOWN
ALL DIMENSIONS SAME AS DUAL DUCT EXHAUST CONTROL PANEL
SCALE 3:32



REL NO	REV	NO	REVISION	DWN	CKD	APVD	DATE
ECO-171893	B	1	PRODUCTION RELEASE	LDE	CJF	T.SCHIEBE	28AUG17
		6	ZONE A3/A4; DIM "F" WAS 693 [27.3] AND ADD DIM "F" CHART	LDE	CJF	T.SCHIEBE	28AUG17

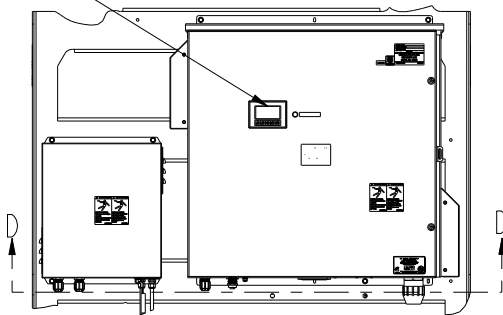
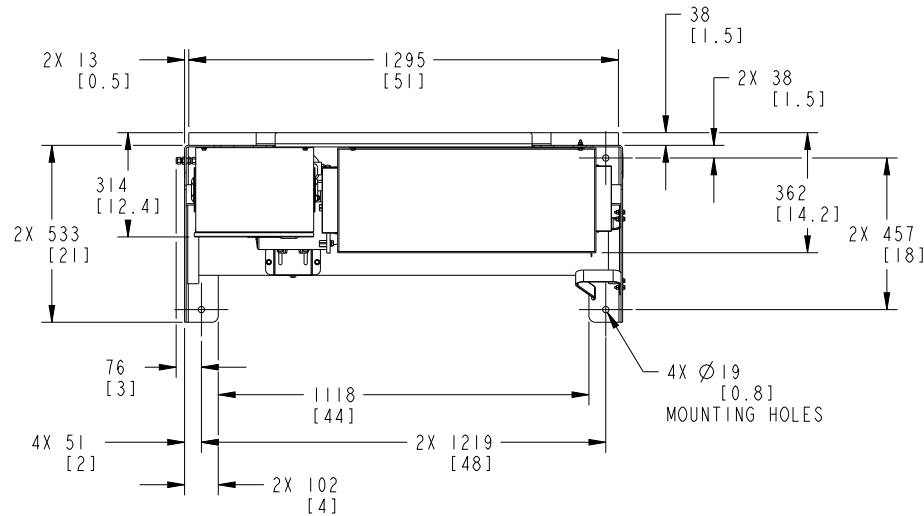
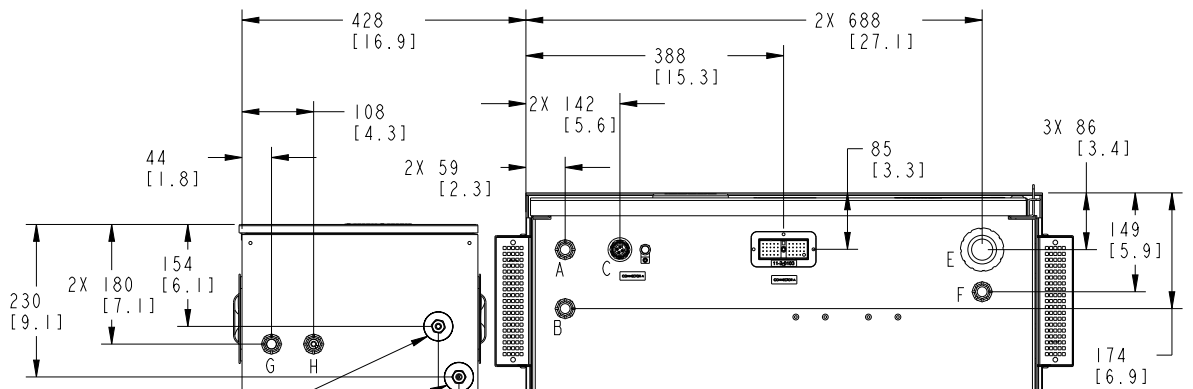
SINGLE EXHAUST
DISPLAY

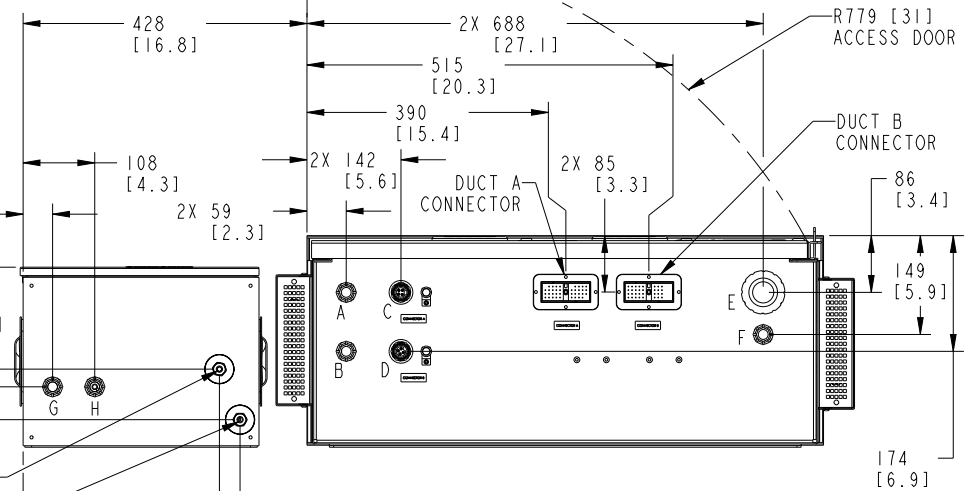
FIGURE 2
SINGLE DUCT EXHAUST CONTROL PANEL
WITH COLD WEATHER HEATER SHOWN
ALL DIMENSIONS SAME AS
DUAL DUCT EXHAUST CONTROL PANEL WITH COLD WEATHER HEATER
SCALE 3:32



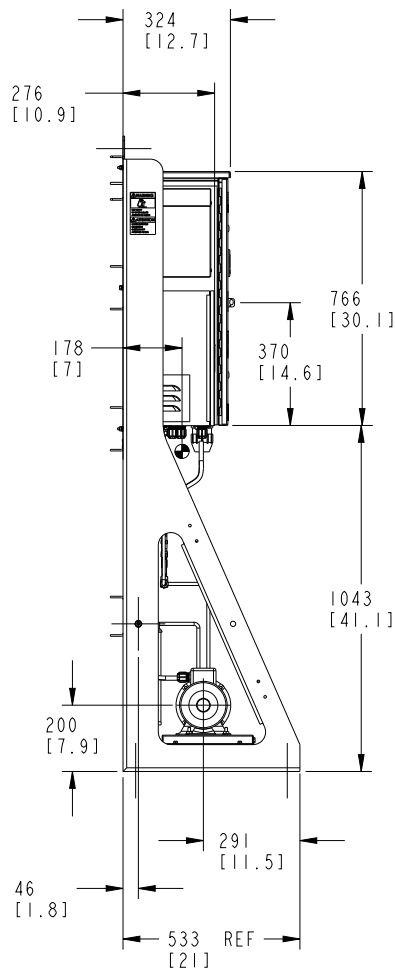
CUSTOMER CABLE INLET			
DESIGNATION	SIZE	CORD RANGE	DESCRIPTION
A	0.5 IN	0.310-0.560 IN	120 VAC INTO PANEL
B	0.5 IN	0.310-0.560 IN	230 VAC OUT TO PUMP
C	0.5 IN	0.310-0.560 IN	STEPPER MOTOR A
D	0.5 IN	0.310-0.560 IN	STEPPER MOTOR B
E	1.25 IN	1.270-1.470 IN	INPUT FOR CUSTOMER CONNECTIONS
F	0.5 IN	0.310-0.560 IN	TESTING INPUT FOR COLD WEATHER OPTION
G	0.5 IN	0.310-0.560 IN	120 VAC IN
H	0.5 IN	0.310-0.560 IN	SIGNAL WIRES FROM PORT C



SECTION D-D
SINGLE DUCT EXHAUST WITH COLD WEATHER HEATER
(SHOWN WITHOUT STAND)
SCALE 3:16

INLET FROM PUMP
OUTLET FROM HEATERINLET FROM PUMP
OUTLET FROM HEATER

SECTION C-C
DUAL DUCT EXHAUST WITH COLD WEATHER HEATER
(SHOWN WITHOUT STAND)
SCALE 3:16



AIR OUTLET

AIR INLET

PUMP INLET 3/8" BARB FITTING
3/8" OD TUBE
COMPRESSION FITTING
DEF SUPPLY TO INJECTOR

DEF FILTER
DEF PUMP

OPTION 2: WITH COLD WEATHER HEATER		DIM "F"
DUAL DUCT EXHAUST	686 [27]	
SINGLE DUCT EXHAUST	693 [27.3]	

OPTION II: CONTROL PANEL WITH COLD WEATHER HEATER
DUAL DUCT EXHAUST CONTROL PANEL WITH COLD WEATHER HEATER SHOWN
SEE FIGURE 2 FOR SINGLE DUCT EXHAUST CONTROL PANEL WITH COLD WEATHER HEATER

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS				CUMMINS POWER GENERATION	
DIM		TOLERANCE		OUTLINE, CONTROL PANEL (SPEC C)	
X ± 1		0.00 - 4.99 +0.15/-0.08		A057U250	
.X ± 0.8		5.00 - 9.99 +0.20/-0.10		2 of 2	
.XX ± 0.38		10.00 - 17.49 +0.25/-0.13			
ANG TOL ± 1.0°		SCALE 3:32			
		THIS DOCUMENT (AND THE INFORMATION SHOWN THEREON) IS CONFIDENTIAL AND PROPRIETARY AND SHALL NOT BE DISCLOSED TO OTHERS IN HARD COPY OR ELECTRONIC FORM, REPRODUCED BY ANY MEANS, OR USED FOR ANY PURPOSE WITHOUT WRITTEN CONSENT OF CUMMINS INC.			
		DO NOT SCALE PRINT			
		DATE 23JUN17			
		DQKAM			
		PGF			
		D			
		A057U250			
		2 of 2			

Part A057U250 B

Description	Legacy Name	External Regulations	Application Status	Release Phase Code	Security Classification	Alternates
OUTLINE,CONTROL PANEL	A057U250	No External Regulations Apply	Production & Service	Production	Internal use Only	

Part Specifications :A057U250 B

Name	Description	Legacy Name
A030B356	SPECIFICATION,MATERIAL	CES10903
A057U251	DRAWING,ENGINEERING	A057U251

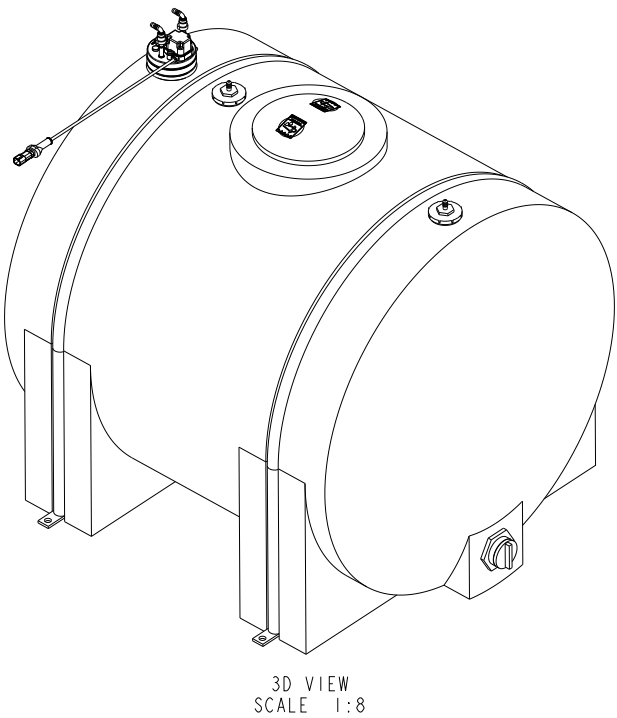
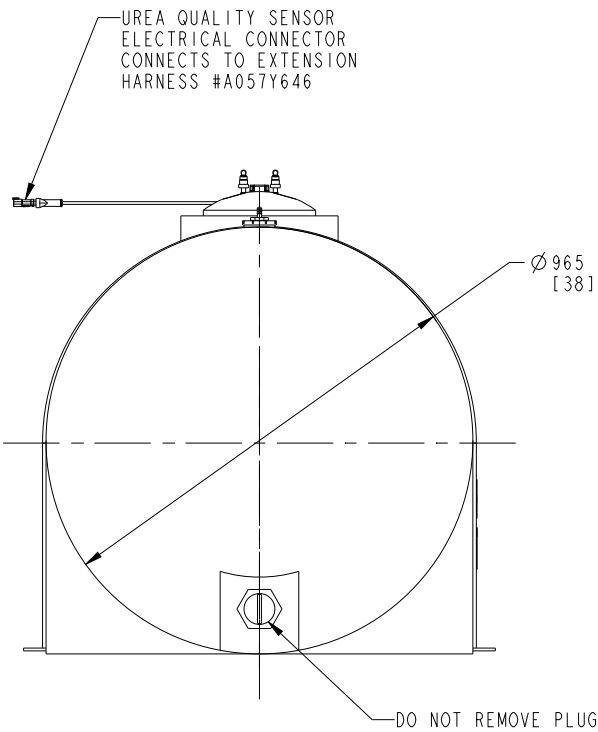
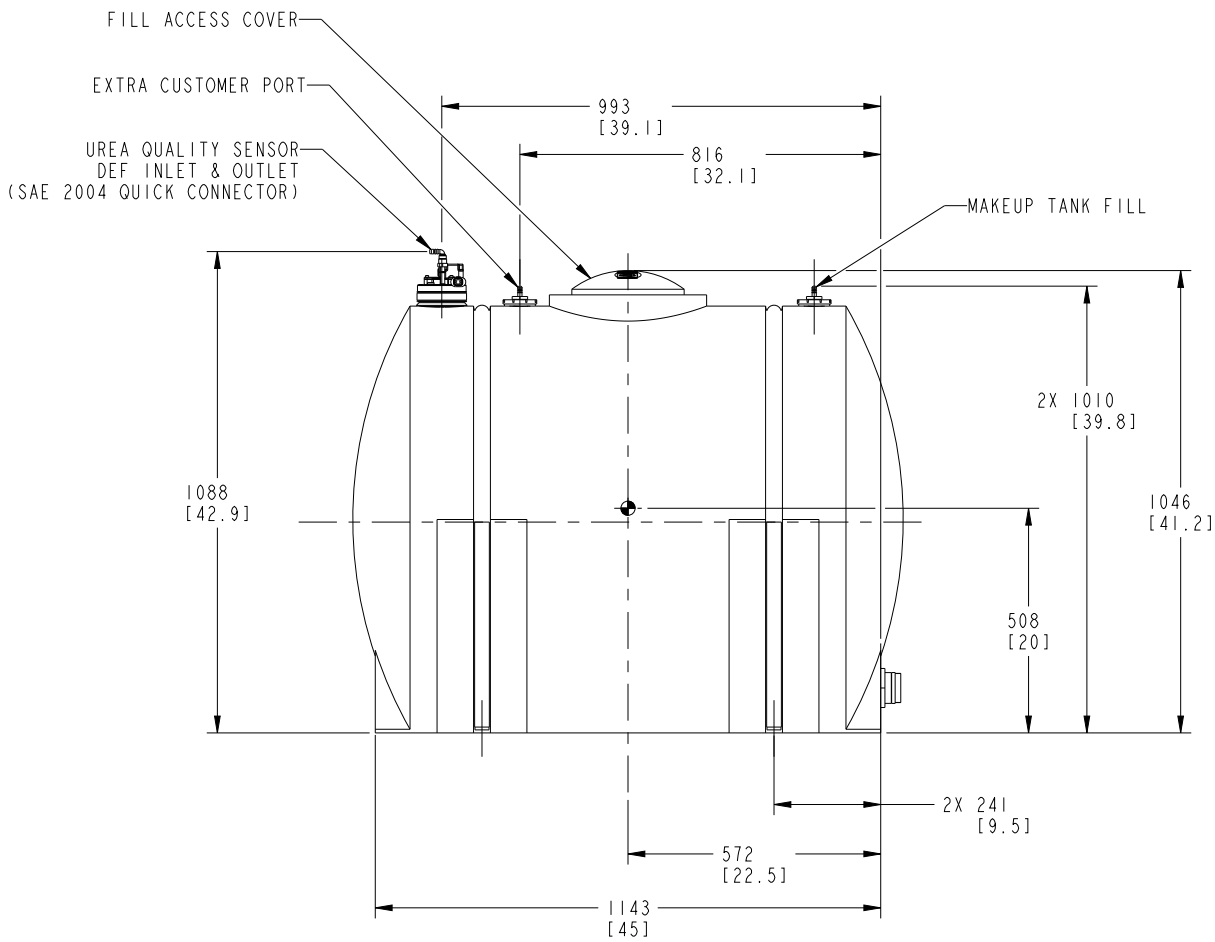
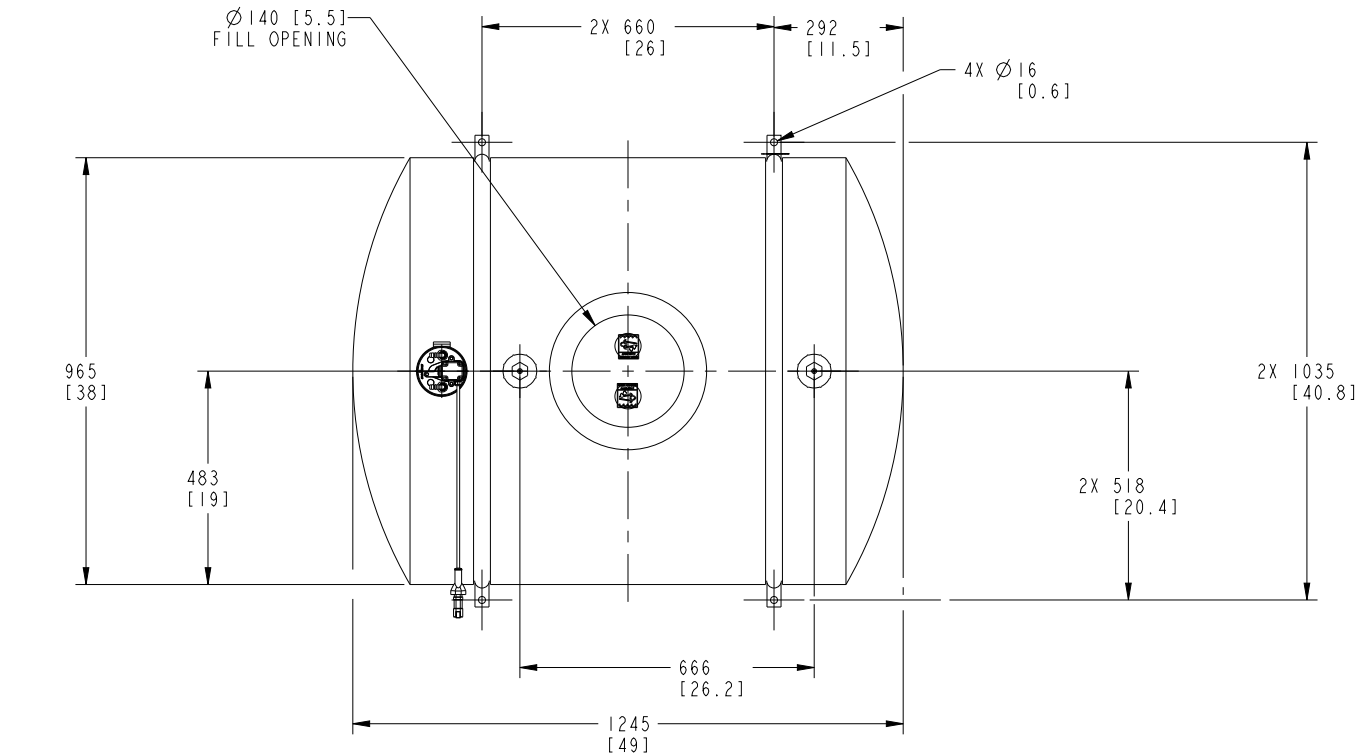
DEF TANK

REL NO	REV	NO	REVISION	DWN	CKD	APVD	DATE
ECO-171731	B	1	PRODUCTION RELEASE	LDE	CJF	T.SCHIEBE	23AUG17
		2	REVISE WEIGHT IN TABULATION: DRY WAS 36.3 [80] WET WAS 997.9 [2200]	LDE	CJF	T.SCHIEBE	23AUG17
		3	MODEL FIRST USED ON; WAS DQKAK-M	LDE	CJF	T.SCHIEBE	23AUG17

NOTES:

1. ALL DIMENSIONS ARE REFERENCE UNLESS SPECIFICALLY TOLERANCED.
2. ALL DIMENSIONS IN [] ARE INCHES.
3. TANK CAPACITY: 225 GALLONS.

DESCRIPTION	WEIGHT KG [LBS]	
	DRY	WET
TANK WEIGHT	37.6 [83]	999.3 [2203]



UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS				SIM TO	DWN	CKD	APVD	CUMMINS POWER GENERATION	
DO NOT SCALE PRINT					L.ERNST	C.FORNELL	T.SCHIEBE	OUTLINE, TANK	
DATE 19JUN17								SITE CODE	
FIRST USED ON DQKAM								PGF	
D								A057U248	
CAD SHEET 1 of 1									

Part A057U248 B

Description	Legacy Name	External Regulations	Application Status	Release Phase Code	Security Classification	Alternates
OUTLINE,TANK	A057U248	No External Regulations Apply	Production & Service	Production	Internal use Only	

Part Specifications :A057U248 B

Name	Description	Legacy Name
A030B356	SPECIFICATION,MATERIAL	CES10903
A057U249	DRAWING,ENGINEERING	A057U249