



HIPOWER[®]
A YANMAR COMPANY

Heavy Duty Industrial DIESEL GENERATOR

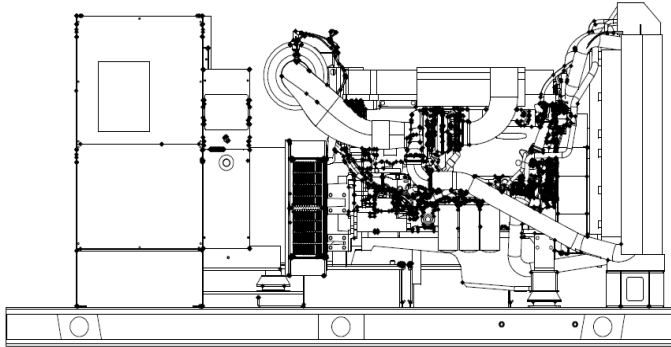
MODEL

HDI-515 T6U



60Hz STANDBY POWER RATINGS

515kW/60Hz//1800RPM



VOLTAGE VAC	120/240V	120/208V	139/240V	277/480V	347/600V**
RATING	Standby	Standby	Standby	Standby	Standby
PHASE	1	3	3	3	3
PF	1.0	0.8	0.8	0.8	0.8
HZ	60	60	60	60	60
KW	N/A	515	515	515	515
KVA	N/A	644	644	644	644
AMPS	N/A	1788	1549	775	620

Description

HIPOWER[®] Heavy Duty Industrial generators are an efficient, reliable and versatile source of back-up electrical power. Designed to operate in the most extreme working conditions. All HIPOWER[®] HD-Industrial generators combine an innovative design and the use of high quality materials that provide the user with the most dependable power that you can rely on for non-stop power with easy to operate controls.

Powered by a radiator-cooled, industrial VOLVO PENTA Diesel engine, which meets current Environmental Protection Agency (EPA) TIER 2 exhaust emission regulations, driving a single bearing, four-pole, three-phase alternator, with IP23 protection. The Emergency Power kVA rating for generator set is given with a 125 degree °C alternator winding temperature rise.

HIPOWER[®] Features and Benefits

VOLVO PENTA Diesel Engine: Long-life, heavy-duty, 4-cycle, direct injection engine for economy of operation and maximum reliability and durability. Capable of full rated load acceptance in one step.

Cooling: Radiator with belt driven pusher fan.

Air Filter: Heavy-duty replaceable element air-cleaner.

Alternator: Single bearing, rotating field, self-excited, self-ventilated, 12-wire re-connectable, 60Hz brushless alternator with permanent magnetic generator (EBS), with Class F insulation. Automatic voltage regulator (AVR) providing close voltage regulation and skVA starting capability for electric motor loads.

HIPOWER[®] Features and Benefits

Enclosure: Fully sound attenuated enclosure, fabricated using 7-gauge steel and thicker for the base, 12-gauge steel for the doors and 14-gauge for the enclosure, powder coated with finish that exceeds 1400-hr salt spray test. Ample layer of durable foam sound insulating material placed all around the inside of the container, doors and ducting with metal retaining frames. It can be cleaned with high-pressure water and is oil and fire resistant. Vertical air discharge for quiet operation. Wide steel lockable access doors with rubber seals, easy access for maintenance and service activities, lift off Die Cast Zinc hinges textured black powder coat, corrosion resistant hardware and fasteners.

Exhaust: Low noise, steel residential-type exhaust silencer with rain cap.

Fuel Filtration: Standard and secondary water separator with visible level on fuel filters

Controls: Digital control panel with manual and automatic start and stop features. Many programmable automatic functions for local and remote controls with LED lights, tamper proof engine hour recorder.

Certification: Generator set is UL 2200 Listed and CSA certified and meets ISO 8528-5.

Codes and Standards Compliances used where applicable



APPLICATION DATA

ENGINE SPECIFICATION		FUEL SYSTEM	
Manufacturer	VOLVO PENTA	Recommended fuel	# 2 - ULSD
Model	TAD1641GE-B	Fuel supply line, min. ID mm(in.)	-
EPA certified	Tier 2	Fuel return line,min. ID, mm (in.)	-
Crankshaft speed	1,800 rpm	Max. lift, fuel pump, type, m (ft)	TBD
Type	Diesel, 4-stroke	Fuel filter	Secondary 5 Microns @ 98% Efficiency
Injection	Direct	LUBRICATION SYSTEM	
Aspiration	Turbocharged	Oil pan capacity - gal (L)	11.1 (42)
Number of Cylinders	6	Oil pan capacity with filter - gal (L)	12.7 (48)
Cylinder arrangement	In-line	Oil cooler	Liquid
Displacement CID (liters)	983.9 (16.12)	Recommended lubricating oil grade	SAE 10W-30 (refer to owners manual)
Bore and Stroke ins (mm)	5.67 x 6.50 (144 x 165)	Oil consumption at full load	< 0.1% of fuel consumption
Nominal power	768 hp	Oil pressure – psi (kPA)	94 (650)
Cooling	Liquid	ENGINE ELECTRICAL SYSTEM	
Governor	Electronic Volvo/EMS 2.4	Starting motor voltage	24 volt
Governor Regulation Class	ISO 8528 Part 1 Class G3	Cold Cranking Amps - minimum	280 Amp
Frequency Regulation	Isochronous	Battery charging Alternator	80 Amp
Starting motor & alternator	24 Volt	Battery capacity	1400CCA 1720CA 430RC GROUP SIZE 8D
Compression ratio	170:1		
Air cleaner type	Heavy duty - single cartridge		
ALTERNATOR SPECIFICATION			
Manufacturer	STAMFORD		
Model 120/208V Three phase	HCI534E		
Model 277/480V Three phase	HCI534D		
Model 347/600V Three phase	HCI534D		
Alternator Type	Four pole, rotating field		
Excitation System	Brushless. PMG-excited		
Power factor	0.8		
Number of leads	12 leads, reconnectable		
Stator Pitch	2/3		
Insulation	Class H		
Windings – Temperature Rise	Class F (125/40° C)		
Enclosure (IEC-34-S)	IP23		
Bearing	Single, sealed		
Coupling	Flexible disc		
Amortisseur windings	Full		
Voltage regulation – no load to full load with MX341 AVR	± 1%		
TIF	<50		
Radio Frequency Emissions compliance	Meets requirements of most industrial and commercial applications		
Line harmonics	5% maximum		

STANDARD FEATURES

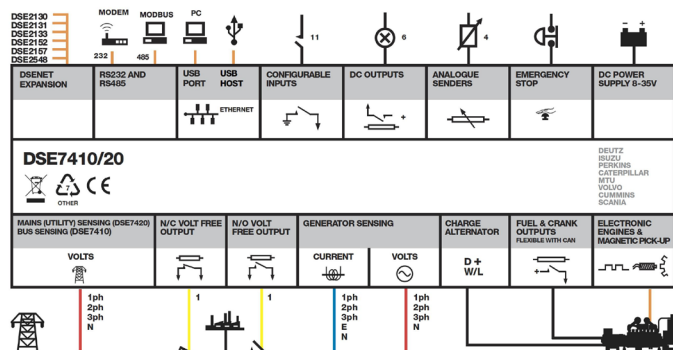
Enclosure (If selected)	Engine System	Fuel System
Rust-Proof Fastener with Nylon Washers Protect Finish	Oil Drain Extension	Primary Fuel Filter
High Performance Sound-Absorbing Material (L1)	Air Cleaner	Flexible fuel lines
Gasketed Doors	Fan Guard	Generator set
Air Discharge Hoods for Radiators-Upwards Pointing	Factory Filled Oil	80% Rated Main Line Circuit Breaker
Lift Off Door Hinges	Battery Charging Alternator	Separation of Circuits – Multiple Breakers (load center)
Stainless Steel Lockable Handles	Alternator Systems	Separation of Circuits – High / Low Voltage
Textured Polyester Powder Coat	12 Leads (3-Phase, Non 600V)	Internal Genset Vibration Isolation
Cooling System	Class H Insulation Material	Wrapped Exhaust Piping
Factory-Installed Radiator	Vented Rotor	Standard Factory Testing
Radiator Drain Extension	2/3 Pitch	2 Year/2000 hours Limited Warranty
50/50 Ethylene Glycol Antifreeze	Full Load Capacity Alternator	Silencer Mounted in the Discharged Hood (Enclosed Only)
Electrical Systems	Protective Thermal Switch	Emergency Stop
Battery Cables and Battery Tray	Permanent Magnet Excitation	
Batteries	Skewed Stator	
	PMG with MX341	

CONTROL SYSTEM



- Charge alternator failure alarm
- 4-Line back-lit LCD text display
- Front panel editing with PIN protection
- Customisable status screens
- Power save mode
- 11 configurable inputs
- 8 configurable outputs
- Flexible sensor inputs
- Configurable timers and alarms
- 3 configurable maintenance alarms
- Multiple date and time scheduler
- Configurable event log (250)

- “Protections disabled” feature
- kW protection
- Reverse power (kW) protection
- LED and LCD alarm indication
- Power monitoring (kWh, kVAr, kVAh, kVArh)
- Load switching (load shedding and dummy load outputs)
- Independent Earth Fault trip
- Fuel usage monitor and low fuel alarms
- Configurable display languages
- User selectable simultaneous RS232, RS485 & Ethernet communications
- MODBUS RTU & TCP support
- Configurable MODBUS pages
- Fully configurable via DSE Configuration Suite PC software
- Data logging to assist with fault finding
- PLC editor allows user configurable functions to meet specific application requirements
- License-free PC software
- Multiple date and time scheduler
- DSENet® expansion compatible



CONFIGURABLE OPTIONS

ENCLOSURE	ENGINE SYSTEM	ELECTRICAL SYSTEM
Open Skid	Oil heater	Battery Warmer
Weather Enclosure	120V-1ph Water Jacket Heater (with Isolation Valves)	10A Battery Charger
Level 1 Sound attenuated	208V-3ph Water Jacket Heater (with Isolation Valves)	5A Battery Charger
Level 2 Sound attenuated	CIRCUIT BREAKER OPTIONS	10 Positions Load Center (100Amps)
ALTERNATOR SYSTEM	LSI Electronic trip 80% and 100% rated	Remote ESTOP with N3R break glass
Tropical coating	LSIG Electronic trip 80% and 100% rated	120V GFCI receptacle
Anti-condensation heater	Second Main Line Circuit Breaker	10A Relay common alarm
Alternator upsizing	Mechanical Lugs	10A Run Relay
Rheostat	Shunt trip	8 LED Remote Annunciator on Surface mounted Box
MX321 AVR	Auxiliary Contacts for Main and Secondary Breaker	16 LED Remote Annunciator on Surface mounted Box
		24 LED Remote Annunciator on Surface mounted Box
		Parallel controller with motorized breaker
		GENERATOR SET
		Extended Factory Load Testing
		Extended Warranty
		Seismic Mounts

ENGINEERED OPTIONS

ENCLOSURE	ENGINE SYSTEM	ELECTRICAL SYSTEM
Snow Hood (only with L2)	Fluid Containment Pan	AC/DC Enclosure Lighting Kit with Timer
Air Outlet Gravity dampers		Enclosure Heater
Air Inlet motorized dampers (only with L2)		240V Twist lock receptacle
CIRCUIT BREAKER OPTIONS	CONTROL SYSTEM	GENERATOR SET
3rd Breaker system	Spare inputs (x4) / output (x4)	Special Testing
Shunt Trip on 3rd Breaker	DSE8610 - Parallel controller with motorized CB	
Auxiliary contact on 3rd Breaker	DSE2130 - DSENet Input Expansion Module	
FUEL TANK	DSE2157 - DSENet Output Expansion Module	
Custom Size – 72hr and 96hr	DSE855 - DSENet USB to Ethernet ModBus TCP/IP Communication Module	
Custom type to meet State spec.	DSE892 - DSENet USB to Ethernet ModBus TCP/IP - SNMP Comm. Module	
Vent Extensions	DSE2520 - Remote Display Module	
Overfill Protection Valve		

OPERATING DATA

FUEL SYSTEM	
Recommended fuel	# 2 - ULSD
Fuel supply line, min. ID mm (in.)	-
Fuel return line, min. ID, mm (in.)	-
Max. lift, fuel pump, type, m (ft)	TBD
Fuel filter	Secondary 5 Microns @ 98% Efficiency

FUEL CONSUMPTION		(Standby Power Rating)
100% load	US gal/hr (L/hr)	35.8 (135.5)
75% load	US gal/hr (L/hr)	26.8 (101.4)
50% load	US gal/hr (L/hr)	17 (64.3)
25% load	US gal/hr (L/hr)	8.5 (32.1)

COOLING SYSTEM		
Engine cooling air flow	cfm (m ³ /min)	23,095 (654)
Alternator cooling flow	cfm (m ³ /min)	2,780 (78.7)
Combustion air flow	cfm (m ³ /min)	1,617 (45.8)
Total cooling air flow (engine+alternator+combustion)	cfm (m ³ /min)	27,492 (778.5)
Total cooling capacity	US gallons (liters)	15.85 (60)
Max. Operating Temperature	°F (°C)	122 (50)

EXHAUST		
Exhaust gas flow	cfm (m ³ /min)	3899 (110.4)
Max. Exhaust temp at full load degrees	°F (°C)	876 (469)
Max. permissible back pressure	in H ₂ O (kPA)	40.1 (10)

Starting Capabilities (sKVA)

	480V					208/240V					600V				
	10%	15%	20%	25%	30%	10%	15%	20%	25%	30%	10%	15%	20%	25%	30%
Standard	450	725	1025	1370	1750	400	650	930	1250	1600	400	620	880	1180	1520
Upsized	550	850	1200	1620	2070	450	730	1050	1370	1760	440	680	960	1300	1680

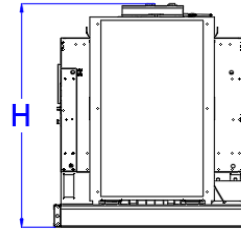
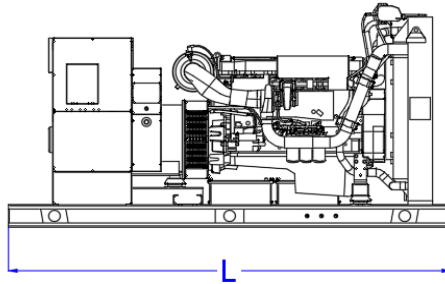
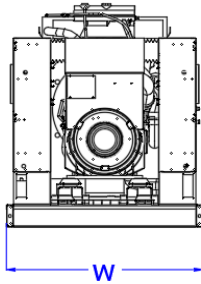
Circuit Breaker

	277/480V	120/208V	120/240V	347/600V
Make and model	ABB T6N800TW	ABB T8VBCFC0000000X	ABB T8VBCFC0000000X	ABB T6N800TW
Amps	800A	2000 A	1600 A	800 A

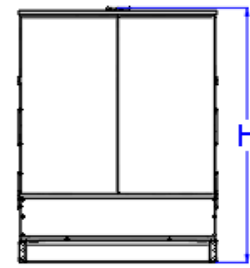
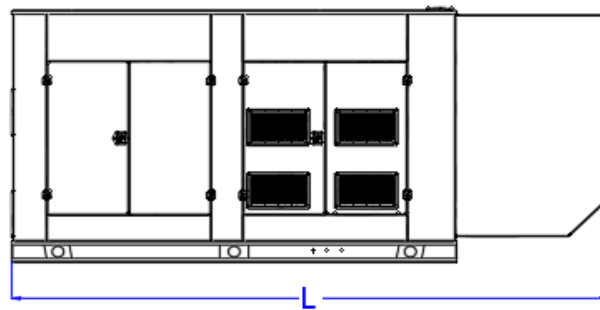
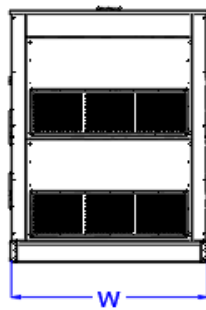
HDI515 T6U - 515Kw

Heavy Duty Industrial

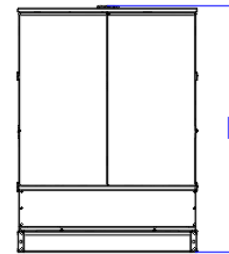
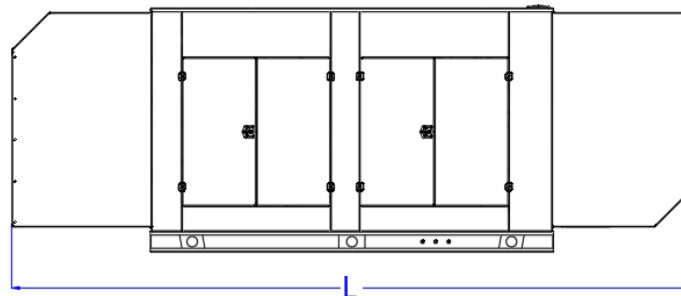
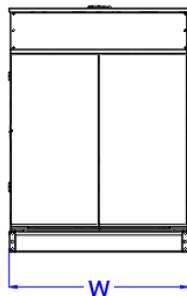
DIMENSIONS, WEIGHTS & SOUND LEVELS



CONFIGURATION	RUN TIME (HOURS)	USABLE CAPACITY (Gal.)	L = Length	W = Width	H = Height	Weight lbs	dBA
OPEN SET	No Tank	-	154"	68.5"	81.2"	8,000	N/A
	24	860	231"	68.5"	20"	4,000	
	48	1,720	242"	68.5"	36"	5,600	



CONFIGURATION	RUN TIME (HOURS)	USABLE CAPACITY (Gal.)	L = Length	W = Width	H = Height	Weight lbs	dBA
WEATHER ENCLOSURE	No Tank	-	207"	68.5"	93.1"	9,300	83
	24	860	231"	68.5"	20"	4,000	
	48	1,720	242"	68.5"	36"	5,600	
LEVEL 1 ENCLOSURE	No Tank	-	207"	68.5"	93.1"	9,300	78
	24	860	231"	68.5"	20"	4,000	
	48	1,720	242"	68.5"	36"	5,600	



CONFIGURATION	RUN TIME (HOURS)	USABLE CAPACITY (Gal.)	L = Length	W = Width	H = Height	Weight lbs	dBA
LEVEL 2 ENCLOSURE	No Tank	-	260"	68.5"	93.1"	9,700	76
	24	860	284"	68.5"	20"	4,000	
	48	1,720	284"	68.5"	36"	5,600	

* All measurements are approximate and for estimation purposes only. Weights are without fuel tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.



Intertek

Conforms to UL STD 2200
 Certified to CSA STD C22.2#100
 Certified to CSA STD C22.2#14