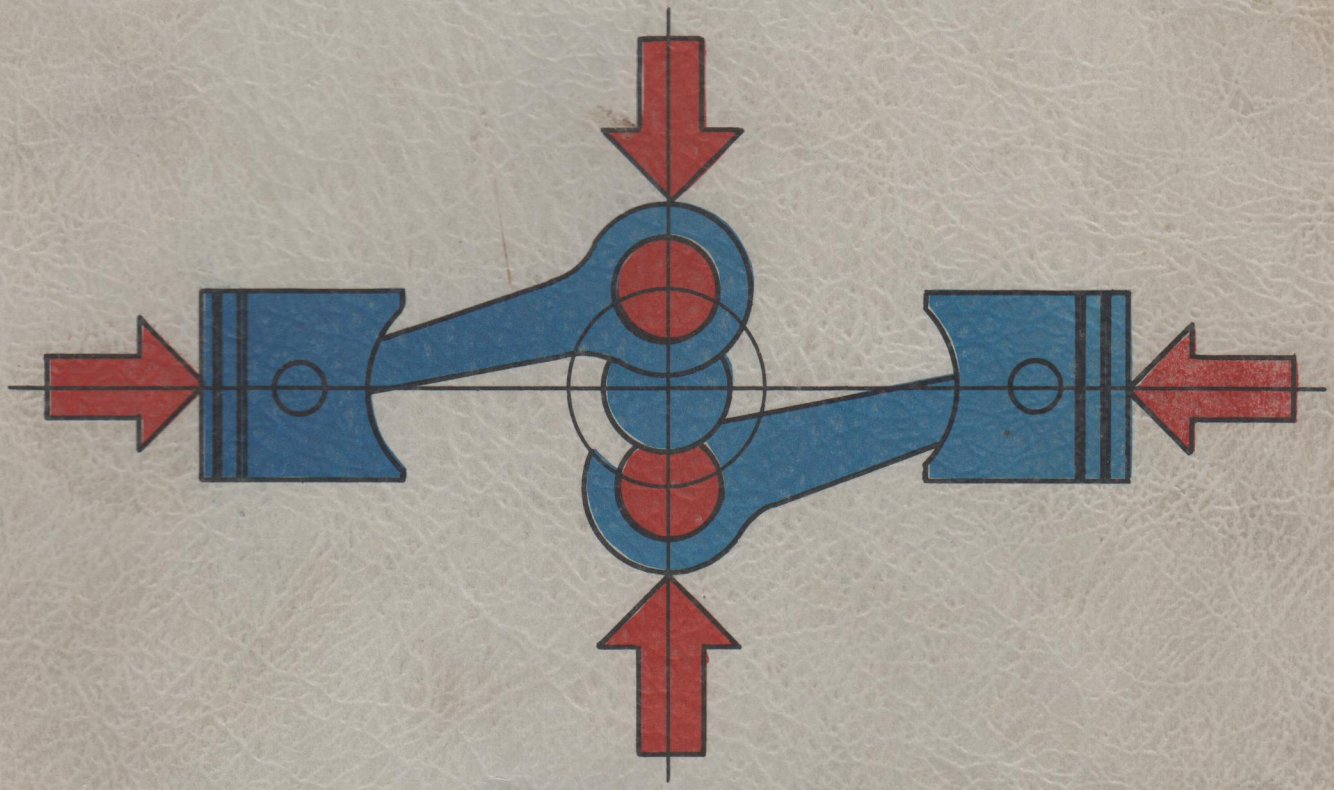
WITTE ENGINES

1870 · 1970
WITTE
PROUDLY
ANNOUNCES
THE BEGINNING
OF OUR SECOND
100 YEARS
IN OUR NEW PLANT
555 E. 56 HWY
OLATHE, KAS. 66061
913-764-3512

BALANCED



DESIGN

ENGINE GENERATOR SETS

DIESEL ● GAS ● PROPANE

Catalog #0-WE-70

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WITTE Engine Corporation

555 EAST 56 HIWAY
OLATHE, KANSAS 66061

Telephone 913-764-3512
Telex No. 42-6262

WITTE Diesel Power Units
Models 100 and 120

APPLICATIONS — Models 100 and 120 have many features making them desirable for application where other type engines are undesirable. Careful study of these will show why these engines will do a better job for you.

1. Absence of Vibration

Vibration is an important factor in the performance rating of any machine, particularly with internal combustion engines. The low-profile, horizontally opposed cylinder design of Models 100 and 120 reduces vibration to an absolute minimum by balancing the reciprocating forces.

Both models are capable of operation without hold down—and are factory-tested this way. This smooth, even power requires less costly foundations for installation.

2. Quiet Operation

The naturally aspirated pre-combustion system results in a very low noise-level. The absence of combustion 'knock' and high-frequency whine is particularly noticable in comparsion with other diesel engines in this classification.

3. Fuel Flexibility & Low-Load Operation

Extensive field and laboratory tests show these engines almost completely insensitive to the poorer grades of fuel. Even on 4D grade fuel, their performance rating is excellent.

Deposits on fuel injection equipment simply do not occur under normal operating conditions. Wherever applications require low-load operation over extended periods, Models 100 and 120 are ideally suited.

4. Low Cost Maintenance

Costly down time for service or repair is kept at a minimum. All work, including disassembly for rods, pistons, crankshafts, etc., can be done from the top—without removing the engine from its foundations or dropping the pan.

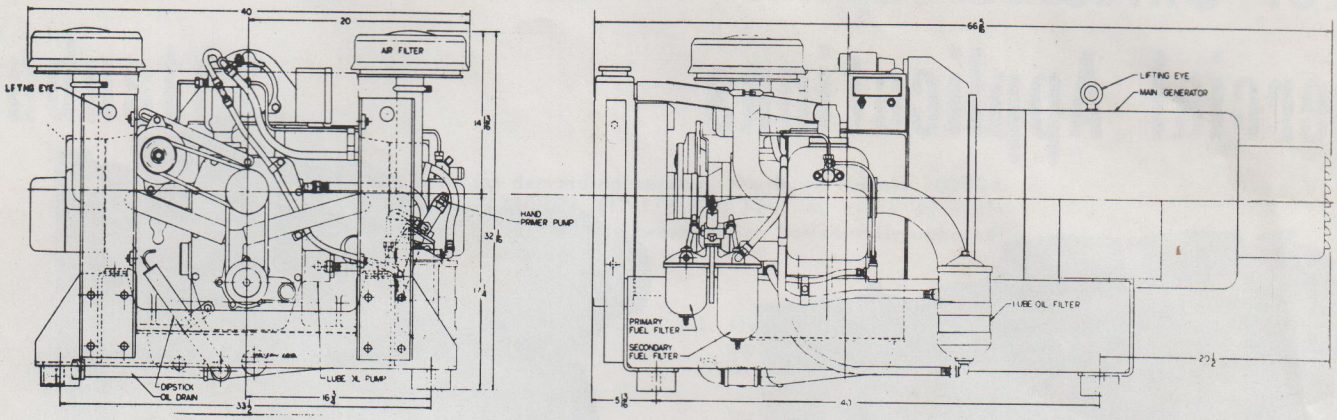
Component parts are simple, easily replaced, and require no special tools or techniques.

1870-1970

THESE UNITS ARE BUILT FOR CONTINUOUS 24-HOUR-A-DAY OPERATION. EACH UNIT IS ENGINEERED TO MEET THE REQUIREMENTS OF SPECIFIC APPLICATIONS. ONE CENTURY OF PROGRESS PROVIDES THE EXPERIENCE AND BACKGROUND NECESSARY TO ACHIEVE THE HIGHEST QUALITY IN DESIGN, ENGINEERING, MANUFACTURING AND PERFORMANCE.

WITTE Diesel Engine-Generator Unit Data

Models 100RDA and 120RDA



Installation diagram, applicable to both Models 100RDA and 120RDA. Dimensions are approximate. Certified installation prints are supplied on request. We reserve the right to change specifications at any time without incurring any obligation for equipment previously or subsequently sold.

Balanced by Design

STANDARD EQUIPMENT

ENGINE

Steel Base
Dry type air cleaners (2)
Fuel Filter - primary & secondary (replaceable cartridge).
Replaceable wet type cylinder liners
Flywheel housing, SAE No. 3
Pumps - cooling water & lubricating oil
Lube oil filter
Radiator cooling system
*Distributor type fuel injection pump including governor, fuel transfer pump and control solenoid
Lube oil level dipstick
12-volt electric start motor and start & stop controls
Valve seat inserts, stellite
Removable camshaft assembly
Precision sleeve type steel-backed aluminum main & connecting rod bearings
Lifting eyes

GENERATOR

Single bearing
Semi-flexible coupling
Integral cooling fan
Direct connected exciter
Drip proof enclosure
Steel frame

OPTIONAL ACCESSORIES

(May be added at extra cost to standard unit)

ENGINE

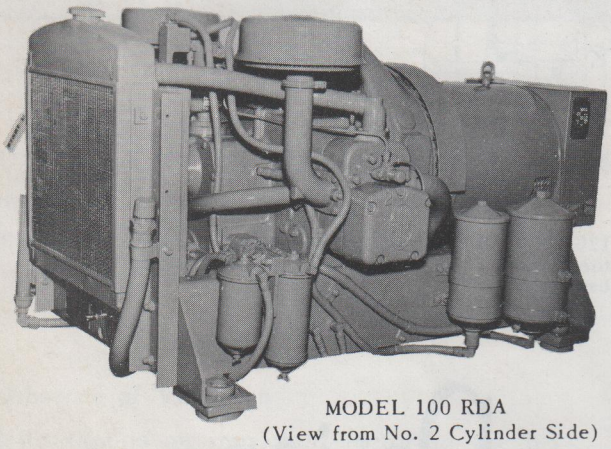
Combination manifold and horizontal muffler, mounted or loose.
Flexible exhaust connection (2" x 24")
Flexible fuel line (1/4" x 12")
Electric safety controls for low oil pressure & high water temperature shutdown
Overspeed shutdown device
Remote control station
Booster relay for remote control station
Ether cold-starting equipment
*Hand primer pump in fuel system
*Auxiliary fuel transfer pump and day tank
Starting battery, standard (12-volt)
Starting battery, heavy duty (12-volt)
Electric immersion heater for engine coolant
Oil pressure & water temperature gauges, engine mounted
Battery charging generator and voltage regulator

GENERATOR

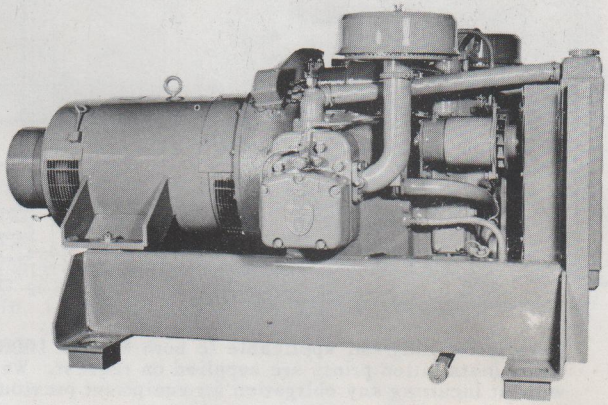
Voltage Regulator
Circuit breakers
Cross current compensators, for parallel operation of 2 or more units (one required for each generator)
Instrument panel, containing ammeters, voltmeter and circuit breakers
Automatic controls - Engine starting panel and either power failure or power demand panel

*NOTE: Order either (1) Hand Primer Pump or (2) Auxiliary Fuel Transfer Pump and Day Tank, to complete the fuel system. The latter is recommended for remote or automatic starting.

Models 100 and 120 Diesel Engine-Generator Units for other Industrial and Commercial Applications



MODEL 100 RDA
(View from No. 2 Cylinder Side)



MODEL 120 RDA
(View from No. 1 Cylinder Side)

The units pictured above are equipped with radiator cooling system, 12-volt electric-starting system (less battery), electrical safety controls, steel base, and direct-connected AC generator. The generators shown are externally regulated, .8 power factor units for especially close voltage regulation requirements.

RATINGS: Continuous Operation @ 1800 RPM		MODEL 100RDA	MODEL 120RDA
		12.5 KW	16.5 KW
CYCLE		4 STROKE	4 STROKE
BORE	Inches	4	4-3/8
STROKE	Inches	4	4
DISPLACEMENT	CU. IN	100	120

APPLICATIONS: These two-cylinder, horizontally opposed engines with direct-connected generators feature a low center of gravity, sturdy construction, and smooth operation.

Such features make these units well suited for all types of portable applications. Exceptional stability is exhibited when this equipment is transported on a two-wheel trailer at highway speeds of 70 m.p.h. and over rough terrain.

For stationary service, the quality and heavy-duty construction built into each product provides long life and low operating and maintenance costs. Continuous duty operation in the range of 20,000 hours between major overhauls is realized. Always dependable automatic or remote starting is an important feature for standby power applications.

ENGINE DESCRIPTION - These models are horizontally opposed, two-cylinder, valve-in-head, water cooled, full diesel units of modern, compact design. The heavy duty design and construction is intended for demanding service, such as 24-hours-a-day, continuous duty applications. Engine features include:

Fuel System: Distributor type fuel injection pump provides equal fuel delivery to both cylinders. Pintle type, single orifice fuel injection nozzle and precombustion chamber design contribute to higher efficiency and fuel savings.

Governor: Integral with fuel injection pump. Totally enclosed with no external linkage. Regulation within 2% full load to no load or no load to full load.

Starting: 12-volt electric, with starting motor and push-button start station as standard equipment.

Cooling: Thermostatically controlled water temperature. Pressurized radiator and large water cooling passages to permit full load operation in ambient temperature as high as 120°F. Centrifugal circulating pump.

Lubrication: Full pressure lubrication is provided to all main wearing points by a positive displacement oil pump.

GENERATOR DESCRIPTION - Standard models are furnished with either single or three phase, 60 cycle, alternating current, single bearing generators with drip-proof enclosures.

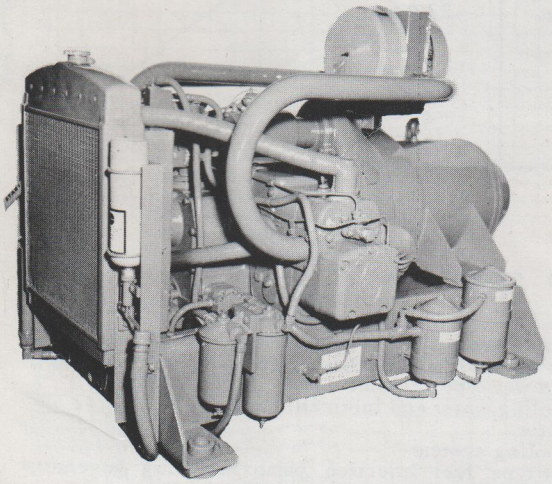
Model 100RDA - Revolving field, 0.8 power factor generator with 2% voltage regulation, 120-240 volt, single phase, 120/208 volt, 3 phase, with voltage regulator.

Model 120RDA - Revolving field, unity power factor and 0.8 power factor generator with 2% voltage regulation, 120-240 volt, single phase, 120-208 volt, 3 phase, with external voltage regulator.

For high inductive loads or to operate voltage sensitive equipment, special generating and control equipment to suit can be furnished on request. Voltage regulation requirements as close as 1% can be met. Generators of this type are illustrated in the above photographs.

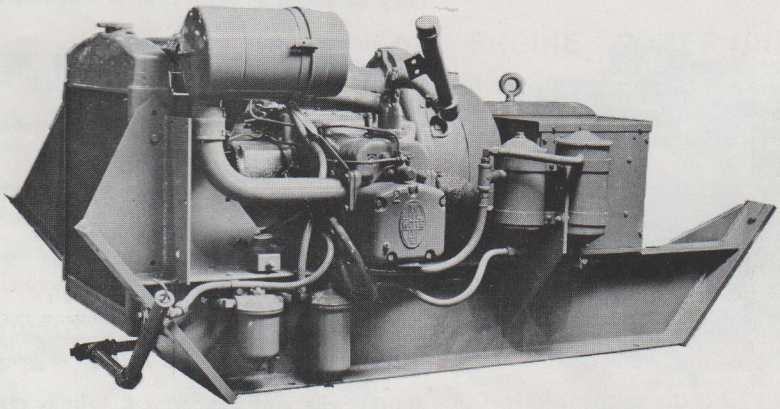
WITTE Models 100 and 120 for the railroad mechanical refrigeration industry

Specially built for demanding service, the Witte Models 100RDA (12-1/2 KW) and 120RDA (17-1/2 KW) have 60 cycle 40 cycle brushless generators and Witte two-cylinder, horizontally opposed, 4-cycle diesel engines.



1. Oversize radiator-operates at up to 150° F ambient.
2. Air-venting, static-head fuel chamber built into injection pump-eliminates shutdown from air leaks in fuel supply lines.
3. Dry type air cleaners-quickly and easily serviced.
4. Ether injection system-for cold weather starting.
5. Starting control.
6. Stop control.
7. Extra length, lube-oil dump hose-completely drains sump.
8. Extra-heavy, rigid, formed steel base with oversize shock mounts.
9. Two-speed engine control (1800 rpm-"pull-down" speed) for maximum fuel economy (1200 rpm-"holding" speed) Thermostat actuated.
10. Primary and secondary fuel filters.
11. Bypass, & Full Flow lube oil filters-1200 hr. change period.
12. Brushless generator - operates at 60 cycles ("pull-down") 40 cycles ("holding")
13. Mechanical, safety shutdown-built into injection pump.
14. Center-of-Mass of the Witte unit is less than 16 inches off the car floor-optimum installation to handle car humps, shocks and over-the-road vibration.

Accessibility of all parts makes the WITTE easy to operate . . . . easy to maintain



The horizontal design is also ideal for undercar installation, using the special "Cradle" base shown above. This is particularly important for ice car conversion, as well as for refrigerated container traffic on flat cars. You can get up to 15" rail clearance.

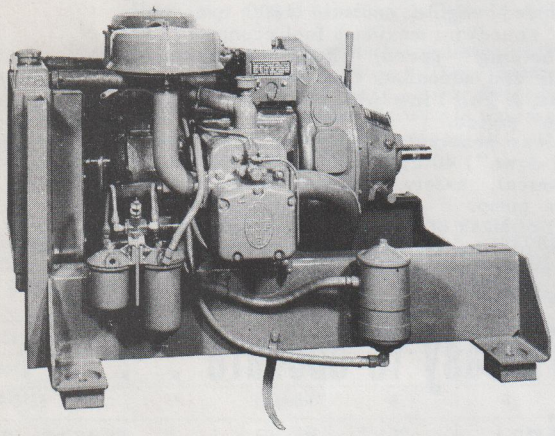
WITTE Diesel Power Units

Models 100 and 120

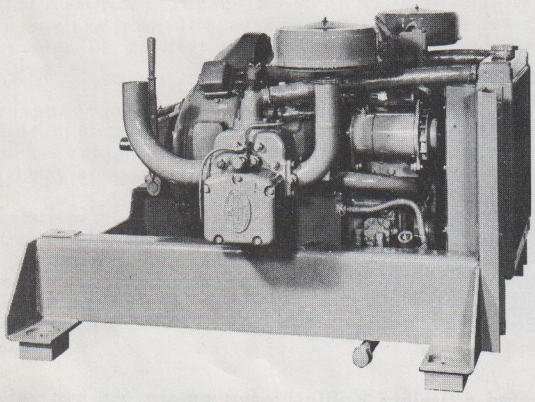
APPLICATIONS - Low center of gravity and rigid, box-like construction make these engines particularly suitable for all types of portable as well as stationary power applications. The compact, balanced design practically eliminates vibration, and the engines run smoothly even without hold-down provisions. This is a big advantage in installations where vibration is objectionable.

In those applications where space is at a premium, the low silhouette of the horizontal, opposed-cylinder design is an important feature. The heavy-duty construction built into each product provides long life and low operating and maintenance costs. Operation in the range of 20,000 hours between major overhauls is realized.

RATINGS		100RS-100RC	120RS-120RC
Continuous Operation at 1800 rpm		19 hp	25.7 hp
Intermittent Operation at 1800 rpm		21 hp	27.0 hp
Number of Cylinders		2	2
Cycle	stroke	4	4
Bore	inches	4	4-3/8
Stroke	inches	4	4
Displacement	cu. in.	100	120



Model 100 power unit with Clutch Power Take-off viewed from No. 2 cylinder side.



Model 120 power unit with Clutch Power Take-Off viewed from No. 1 cylinder side.

STANDARD EQUIPMENT

Steel Base
Dry-type air cleaners (2)
Fuel filters - primary and secondary (replaceable cartridge).
Replaceable wet-type cylinder liners
Pumps - cooling water and lubricating oil
Lube oil filter
Radiator cooling system
*Distributor-type fuel injection pump including governor, fuel transfer pump and control solenoid
Lube oil level dipstick
12-volt electric start motor (less battery & battery charging equipment with start & stop controls)
Valve seat inserts, stellite
Removable camshaft assembly
Precision sleeve-type steel-backed aluminum main & connecting rod bearings
Lifting eyes

OPTIONAL ACCESSORIES

(May be added at extra cost to standard unit)

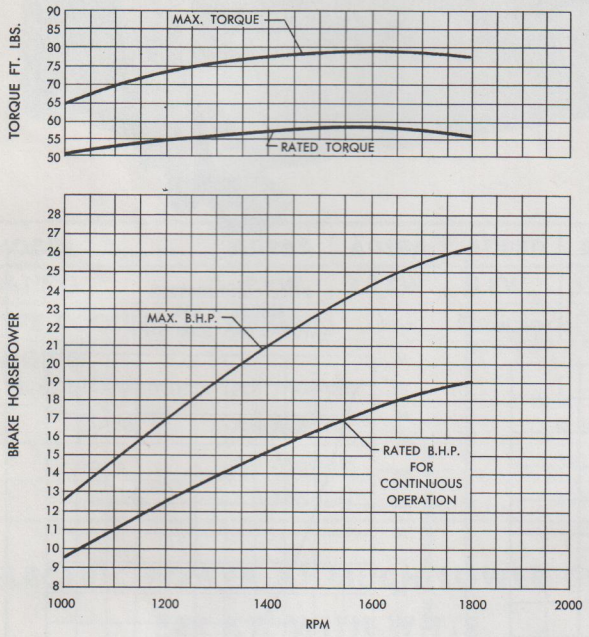
Exhaust manifold only, mounted
Muffler only, high degree silencing, shipped loose
Flexible exhaust connection (2" x 24")
Flexible fuel line (1/4" x 12")
Electric safety controls for low oil pressure and high water temperature shutdown
Overspeed shutdown device
Remote control station and booster relay
Ether cold-starting equipment
*Hand primer pump in fuel system
*Auxiliary fuel transfer pump & day tank
Starting battery, standard (12-volt)
Starting battery, heavy duty (12-volt)
Electric immersion heater for engine coolant
Oil pressure & water temperature gauges, engine mounted
30 gallon fuel drum, with fittings & gauge, 18½" Dia. x 29" high.
Battery charging generator & voltage regulator

*Note: Order either (1) Hand Primer Pump or (2) Auxiliary Fuel Transfer Pump & Day Tank, to complete the fuel system. The latter is recommended for remote starting.

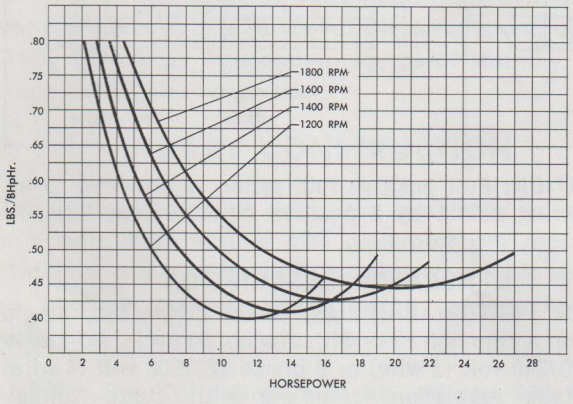
WITTE Diesel Power Units

PERFORMANCE CURVES

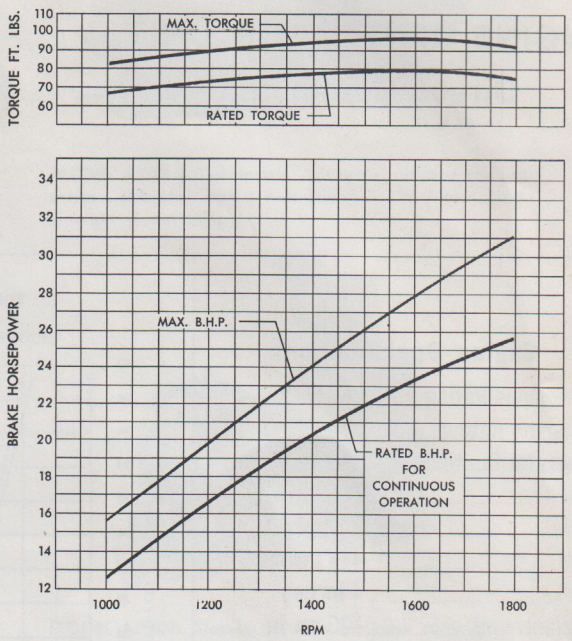
MODEL 100 **POWER UNIT RATING**



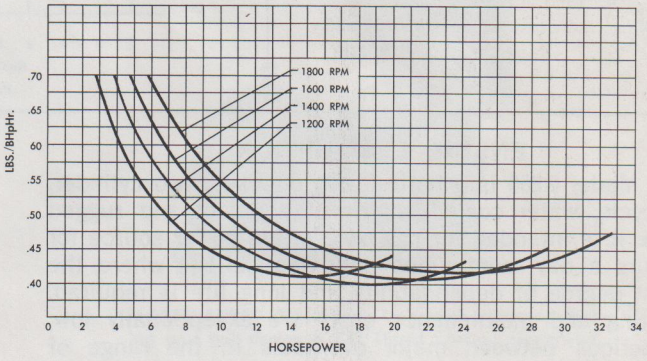
FUEL CONSUMPTION
MODEL 100 POWER UNIT
INCLUDING ALL ACCESSORIES



MODEL 120 **POWER UNIT RATING**



FUEL CONSUMPTION
MODEL 120 POWER UNIT
INCLUDING ALL ACCESSORIES



I.C.E.I. RATINGS - Power curves are corrected to standard conditions of 29.92" barometric pressure and 60° F, air temperature.

RATED HORSEPOWER: The rated horsepower output is that recommended on the basis of continuous 24-hour-a-day operation.

INTERMITTENT HORSEPOWER: for intermittent service the engine can be rated at 10% above the continuous rated horsepower.

MAXIMUM HORSEPOWER: The engine should not be applied to loads in excess of that shown in the maximum horsepower curve.

DEDUCTIONS OF RATINGS: The following deductions should be made for variations from the standard atmospheric conditions:

1% for each 10°F. above 60°F. atmospheric air temperature.
3.6% for each 1" of mercury below 29.92" of barometric pressure.
3% for each thousand feet of altitude above sea level.

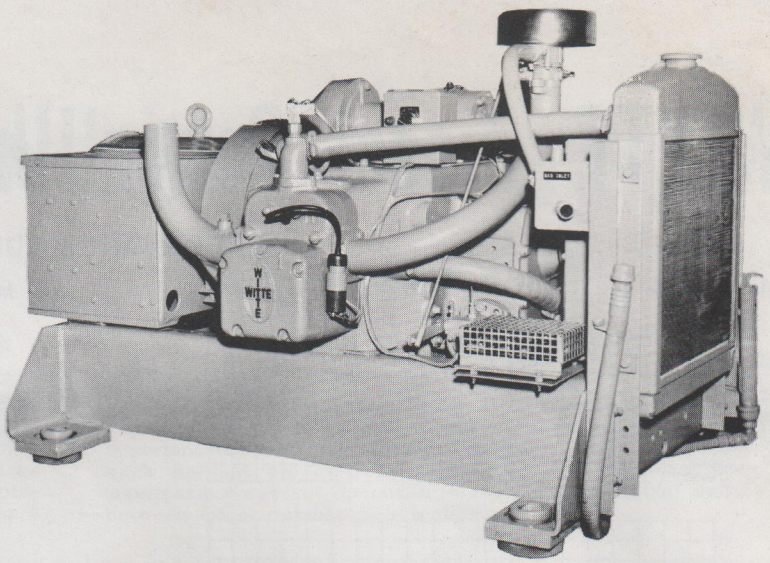
ENGINE - POWER UNIT SPECIFICATIONS

Oil Capacity		Quarts 16
Water Capacity		Quarts 20
Flywheel:		
Diameter		inches 16
Housing		SAE No. 3
Clutch Shaft Dim: $\frac{1.4375}{1.4365}$ dia. x 5-1/2" long		
Keyway 5/8" square x 2-1/2" long		
EXHAUST CONNECTION (each cylinder):		
U.S. Pipe Tap	inches	2
DIMENSIONS (over-all):		
Height	inches	32-1/16
Width	inches	40
Length	inches	48-13/16
WEIGHTS (approx) COMPLETE POWER UNIT:		
Model 100RS	pounds	1,050
Model 100RC	pounds	1,100
Model 120RS	pounds	1,070
Model 120RC	pounds	1,120

WITTE

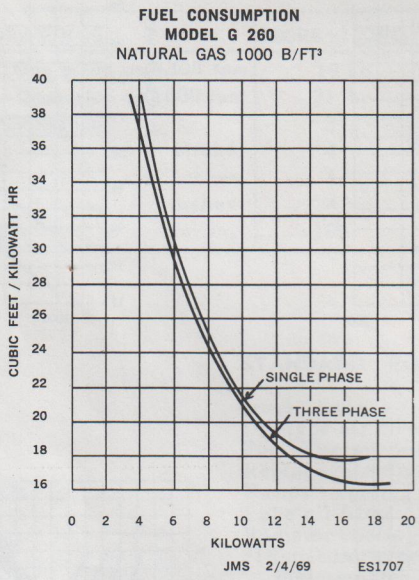
MODEL G260

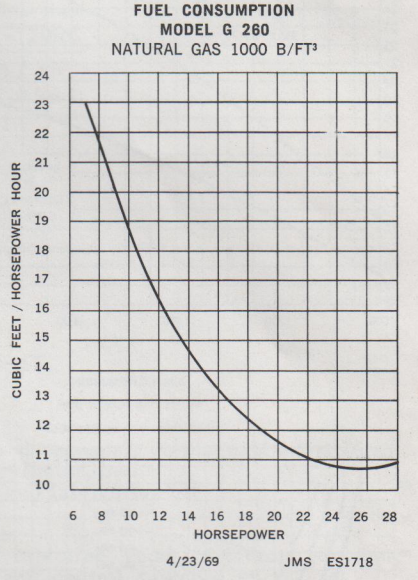
NATURAL GAS
ENGINE-GENERATOR UNIT
Direct Connected



Engine Specifications

Continuous Rating	26 HP
Maximum Rating	33 HP
Generator Continuous	15 KW
Speed	1800 RPM
Cycle	4 Stroke
Bore	4⅜ inches
Stroke	4 inches
Displacement	120 cu. in.
Cylinders	2
Configuration	Horizontally Opposed
Cooling System	Water Cooled
Fuel	Natural Gas or Propane





ENGINE DESCRIPTION

The Model G260 is a horizontally opposed, two cylinder, four cycle, water cooled engine of compact and rugged design. It is intended for use as a prime power source for 24 hours a day, continuous duty applications where the highest degree of dependability and long life is required. Operating and maintenance costs are exceptionally low, and periods between major overhauls in the range of 20,000 hours may be realized.

BASIC EQUIPMENT

CARBURETOR: Impco model 125 and IT-11 pressure reducing valve are supplied as standard equipment.

IGNITION SYSTEM: Bendix solid state capacitor discharge breakerless system — no wearing parts. Operates either from a battery or separate alternator power supply.

GOVERNOR: Hoof GD270 mechanical governor provides frequency regulation of 3½% no load to full load.

STARTING SYSTEM: 12 volt electric starting motor and turn key start station.

COOLING: Thermostatically controlled water temperature. Pressurized system and radiator capable of continuous full load operation at 120° F ambient temperature.

LUBRICATION: Full positive lubrication is provided to all main wearing points by a positive displacement lube oil pump.

GENERATOR DESCRIPTION

.8 POWER FACTOR: Brushless, direct connected, single bearing, on a common base with engine. 60 cycle, AC single phase 120/240 volt (3 wire) or 3 phase 120/208 volt (4 wire) ± 2 voltage regulation, complete with static voltage regulator.

UNITY POWER FACTOR: Brushless, direct connected, single bearing, on a common base with engine, 60 cycle, AC single phase 120/240 volt (3 wire) or 3 phase 120/208 volt (4 wire), inherently regulated.

OPTIONAL ACCESSORIES

LINE PRESSURE REGULATOR: Reduces line gas pressure to 5-12 ounces which is the required inlet pressure of the IT-11 pressure reducing valve.

BATTERY CHARGING ALTERNATOR: Brushless rectified A.C. type with no wearing parts.

PROPANE CONVERTOR: Impco Model EP.

SCRUBBER TANK: Two gallon tank for wet gas installations.

WITTE

Series AD

DIESELECTRIC UNITS

BELT DRIVEN

MODEL	ADRBA	ADTBA	ADRBD	ADTBD
RATING	3 KW	3.2 KW	3 KW	3.2 KW
TYPE COOLING	Radiator	Tank	Radiator	Tank
ENGINE: No. of Cylinders	All Models	1		
Cycle	All Models	4 stroke		
Bore	All Models	3¼ inches		
Stroke	All Models	4½ inches		

ELECTRIC POWER AT MUCH LOWER COST PER KW WITH WITTE

This unit is powered by the time proven Series AD Witte diesel engine operating at 1500 RPM. Now available at a lower cost per KW, this Series AD Dieselectric unit operating at 1500 RPM is an outstanding source of standby, as well as continuous, electric power.

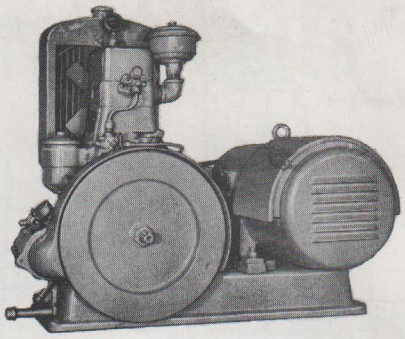
STURDY CONSTRUCTION

The Series AD engine drives the generator by means of two V-Belts. Both engine and generator are mounted on an integral cast-iron base. This Unit is available with radiator cooling system, tank-cooling, or marine pump circulation.

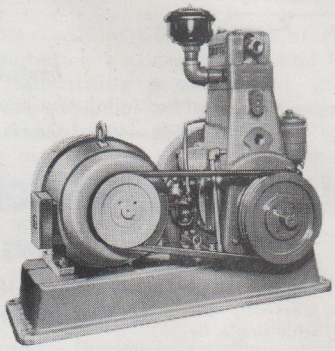
RATING — The KW rating must be reduced 3% for each 1000 feet elevation above sea level.

THE ALTERNATING CURRENT GENERATOR—The generators have a built-in voltage regulating circuit which has no moving parts, and are designed for a temperature rise not to exceed 90°F (50°C) when operated continuously at rated load.

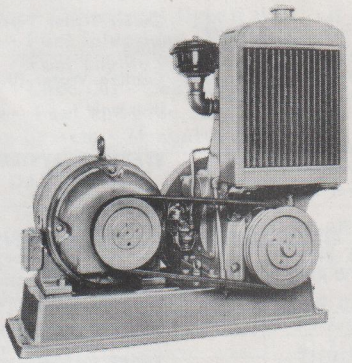
THE DIRECT CURRENT GENERATOR — Either shunt wound generators for battery charging or compound wound generator for general service can be supplied. A switchboard with suitable voltmeter, ammeter, rheostat and circuit breakers is supplied as standard equipment. The generator is designed for a temperature rise not to exceed 90°F (50°C).



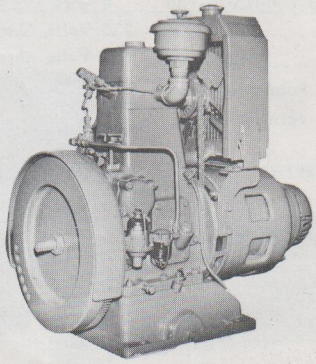
MODEL ADRBA Dieselectric Unit with radiator cooling system. This Unit has a belt-driven 3 KW Alternating Current Generator.



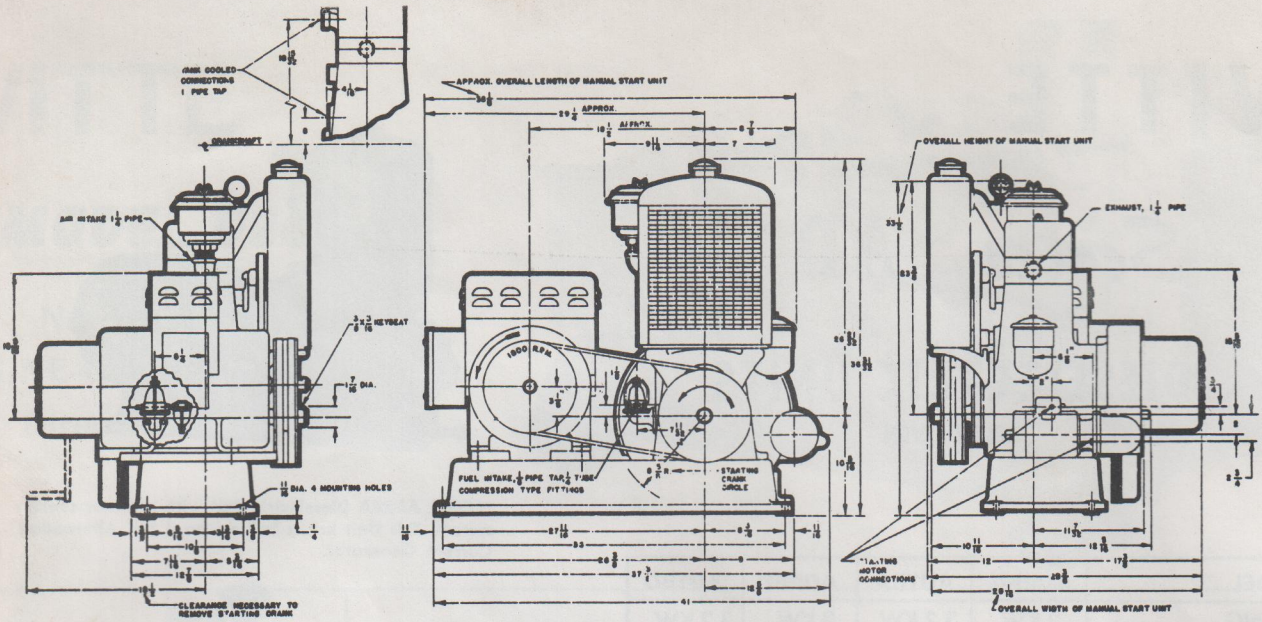
MODEL ADTBA Dieselectric Unit for tank cooling system. This Unit has a belt-driven 3.2 KW Alternating Current Generator.



MODEL ADRBD Dieselectric Unit with radiator cooling and belt-driven 3 KW Direct Current Generator.



MODEL ADRDA Dieselectric Unit for Radiator cooled system. This Unit has a direct connected 2.4 KW Alternator.



Installation Diagram of Model ADRBA

Dimensions are approximate. Certified installation prints for the different Models supplied on request. We reserve the right to change specifications at any time without incurring any obligation for equipment previously or subsequently sold.

DIESELECTRIC PLANT DATA—MODEL ADRBA

ENGINE SPECIFICATIONS

ENGINE — Single cylinder, 3¼" x 4½", water-cooled, vertical, four stroke cycle diesel, with single flywheel.

BASE—Box type, cast iron (includes 3-gallon lubricating oil reservoir).

FILTERS—Air intake, fuel and lubricating oil.

GAUGES—Lubricating oil pressure.
Lubricating oil level.
Water temperature.

GOVERNOR—Centrifugal flyball type.

PUMPS — Fuel injection.
Fuel supply—automotive type.
Lubricating oil—gear type.

COOLING SYSTEM — Radiator and fan (includes belt-driven fan) (wall-mounted radiator with motor-driven fan available as extra equipment).
Inlet Water Pipe dia. (U. S. Pipe Thd.) .....1"
Outlet Water Pipe dia. (U. S. Pipe Thd.) .....1"
Cooling Water (U. S. Gallon) Radiator only 2

STARTING SYSTEM—Manual hand-crank).

GENERATOR SPECIFICATIONS

RATINGS — At 1500 RPM:

RADIATOR-COOLED MODELS — 3 KW

TANK-COOLED MODELS — 3.2 KW

BEARING .....Ball Bearing

COOLING .....Integral Fan

DRIVE .....Belt Driven

ENCLOSURE .....Drip Proof

FRAME .....Fabricated Steel

WINDING — Coils — varnish impregnated and baked.

ALTERNATING CURRENT

TYPE .....Revolving Field

SINGLE PHASE —
120/240 Volt—3 wire.....60 cycle
115/230 Volt—3 wire.....50 cycle

THREE PHASE —
120 Volts, Single phase and
208 Volts, three phase
4 wire .....50 or 60 cycle
230 Volts, Single phase and
400 Volts, three phase
4 wire .....50 cycle
240 Volts or
480 Volts, three phase
3 wire .....60 cycle
230 Volts, three phase
3 wire .....50 cycle

UNITS WITH DIRECT CURRENT GENERATOR

VOLTAGE —
(General Purpose) 110-125
(Battery charging) 110-160

WEIGHTS

Model ADRBA Dieselectric Unit.....Approximately 790 lbs.
Crate .....Approximately 110 lbs.
Export box .....Approximately 200 lbs.

OPTIONAL ACCESSORIES

May be added at extra cost to Standard Dieselectric Unit

MOUNTING
Foundation Bolts

COOLING SYSTEM
Pipe and Fittings for Cooling Tank (set)
Marine Water Pump
Radiator, wall-mounted type

EXHAUST SYSTEM
Muffler — Automotive type (Medium Silencing).
Muffler—Residential type (High Degree Silencing)
Spark Arrester Type (for Safety High Degree Silencing)
Flexible Exhaust Connections (1¼" x 24")

FUEL SYSTEM
Fuel Tank — 5-gallon, with connections.
Underground Fuel Tank (22½" x 31"—50 gallons)
Underground Tank Fittings
Flexible Fuel Line Connections
Fuel Line Filter

CONTROLS
MECHANICAL OR ELECTRICAL
Automatic Shut Down (Low Oil Pressure, High Water Temperature)

ELECTRIC AUTOMATIC CONTROLS
Power Failure or Power Demand Panels—(Available only on units equipped with electrical starting systems.)

STARTING SYSTEM

Electric, 12 volt (includes Motor, Battery and Battery Charging Device)
Remote Pushbutton Control.

ENGINE DETAILS

3¼" Bore x 4½" Stroke
Displacement, cu. in.....37.3
Rated Horsepower at 1500 RPM.....5.3
Valve Dia. Intake.....1⅜"
Exhaust.....1⅛"
Crank Pin Bearing dia. x length .....1⅞" x 1⅞"
Dia. of Crankshaft at Main Bearings .....1⅞"
Piston Pin Bearing dia. x length .....1¼" x 1⅜"
Compression Rings 4
Oil Regulating Ring.....1
Exhaust Pipe dia. (U. S. Pipe Thread) .....1¼"
Inlet Water Pipe dia. (U. S. Pipe Thread) .....1"
Outlet Water Pipe dia. (U. S. Pipe Thread).....1"
Lubricating Oil—U. S. Gallons 3
Cooling Water—U. S. Gallons
Radiator only 2
Cooling Tank only.....¾

NOTE: Valve-in-head construction, intake and exhaust. Renewable valve seat inserts.

WITTE Diesel Engine-Generator Units

Models BD and CD

MODEL	BD-9RBA	CD-14RBA
RATING - KW	5.4	9.0
ENGINE RPM	1,040	800
RATED HP (Continuous)	9	14
BORE and STROKE	4-1/4 x 6	5 x 8
CYCLE	All Models 4 Stroke	
NO. of CYLINDERS	All Models 1	
TYPE COOLING	Radiator or Tank	

These horizontal, single cylinder diesel engine generator units are heavy-duty, slow speed sets, designed and built for exceptionally long life, with low operating and maintenance costs.

Continuous duty operation in excess of 30,000 hours between major overhauls is the rule, not the exception. All parts subject to wear are replaceable, so that these units never "wear out."

Whether your application calls for primary or stand-by electrical power, the unequaled reliability and simplicity of operation and maintenance will provide you with complete satisfaction and security.

DESCRIPTION - All models consist of the engine and generator mounted on a common base and connected with V-belts for transmitting power to the generator. The condenser cooling systems will permit continuous operation without addition of coolant for periods up to 90 days. A lubricating oil reservoir and float valve arrangement is available as an accessory item to permit unattended operation for 90 day periods. Other optional accessories are available for all models and are listed on the reverse side of this page.

ENGINE SPECIFICATIONS

MODEL	BD-9RBA	CD-14RBA
Displacement, cu. in.	85	157
Valve dia. Intake	1-9/16"	2-1/8"
Exhaust	2-9/16"	1-7/8"
Crank Pin Bearing dia. xlg.	2-1/4" x 2-3/8"	2-7/8" x 3"
Dia. of Crankshaft at Main Bearings	2-1/8"	2-1/2"
Piston Pin Bearing dia. xlg.	1-3/4" x 1-3/4"	1-13/16" x 2-1/2"
Compression Rings	4	4
Oil Regulating Rings	1	2
Exhaust Pipe dia. (U.S. Pipe Thread)	1-1/2"	2"
Inlet Water Pipe dia. (U.S. Pipe Thread)	1/2"	1/2"
Outlet Water Pipe dia. (U.S. Pipe Thread)	1-1/4"	1-1/4"
Lubricating Oil-U.S. Gal.	1-3/4"	2-1/2
Cooling Water (U.S. Gal.) Radiator Cooled	2-1/4	3-1/4
Tank Cooled	192	240

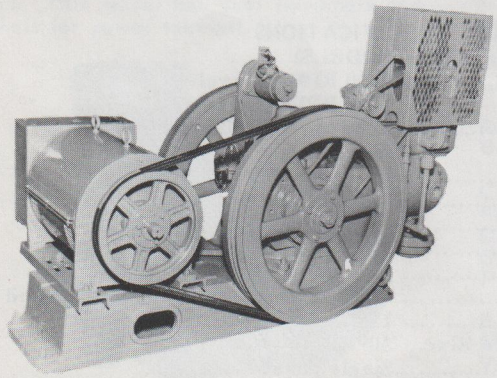
NOTE: Valve-in-head construction, intake and exhaust. Removable valve guides and valve seat inserts.

STANDARD EQUIPMENT

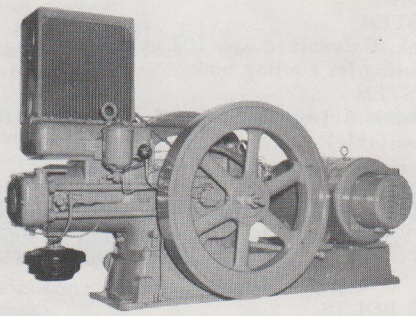
Air Cleaner - Oil bath, type, all models
Base-Box type, cast iron, with lube oil reservoir
Gages - Lube oil pressure) all models
Lube oil level)
Governor - Centrifugal flyball type, all models
Pumps - Fuel injection - rack type)
Fuel supply - auto. type) all models
Lube Oil - Gear Type)
Filters - Fuel and lube oil - all models
Starting System - Manual (hand crank)

PHYSICAL DATA

MODEL	BD-9RBA	CD-14RBA
Length (inches)	73-3/4	78-5/8
Clearance Required to Remove Cylinder Head & Piston (inches)	9	13-1/2
Width (inches)	28-7/8	34-3/8
Height (inches)	41-3/4	47-1/4
Net Weight (lbs.)	1450	2420
Gross Weight (lbs) (crated)	1700	2750
Gross Weight (lbs.) (boxed)	1925	2970
Cubic Displacement (cu.ft.)	76.0	106.1

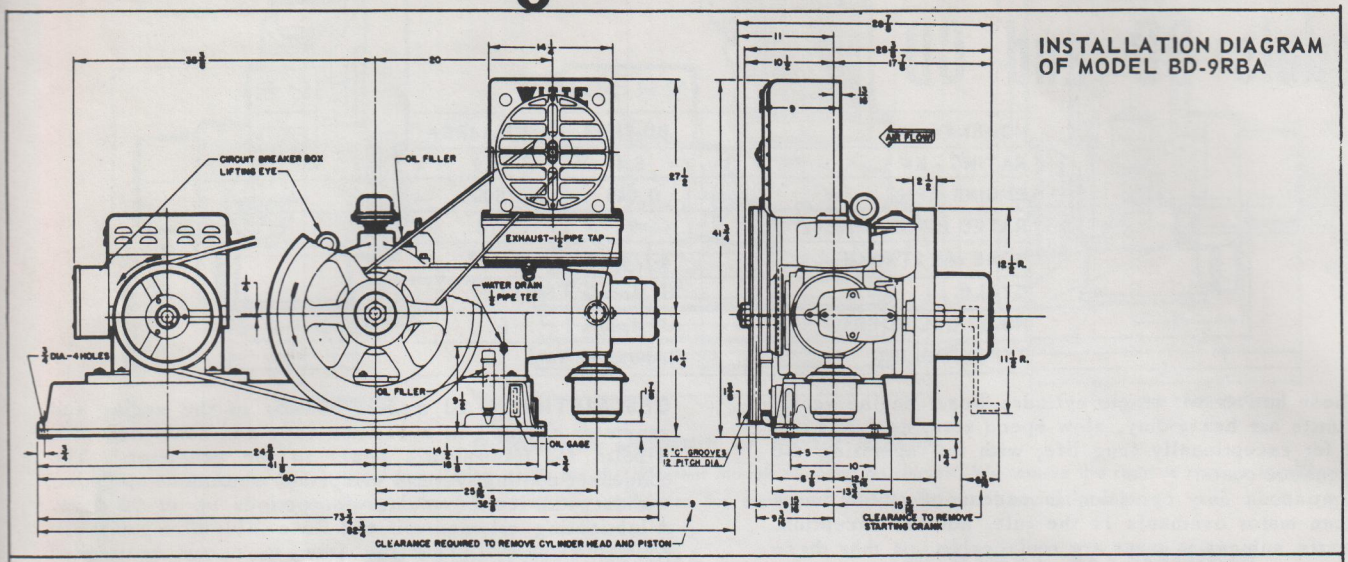


MODEL BD-9RBA Dieselectric Unit with engine-mounted condenser-type radiator cooling. The unit has an AC 60 cycle generator.

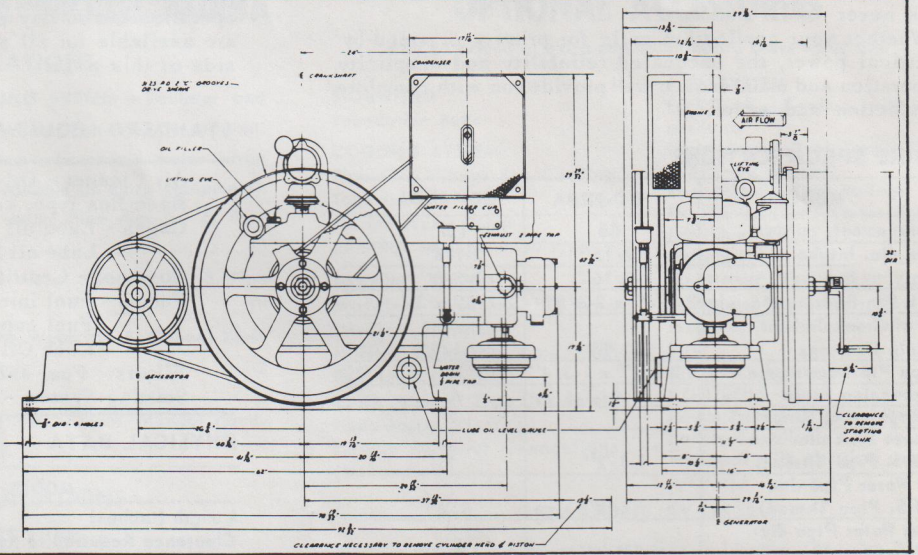


MODEL CD-14RBA Dieselectric Unit with engine-mounted condenser-type radiator cooling. This unit has an AC 60 cycle generator.

WITTE Diesel Engine-Generator Unit Data



INSTALLATION DIAGRAM OF MODEL BD-9RBA



INSTALLATION DIAGRAM OF MODEL CD-14RBA

Dimensions are approximate. Certified installation prints for the different Models supplied on request. We reserve the right to change specifications at any time without incurring any obligation for equipment previously or subsequently sold.

OPTIONAL ACCESSORIES

STARTING SYSTEM, Electric, 12 Volt
FUEL SYSTEMS
- Fuel Tank..... 55 gallons, 22-1/2" x 31"
- Underground tank fittings
- Flexible fuel line connections
- Fuel line filter

COOLING SYSTEM
- Cooling tank, Galvanized..... 192 gallons
- Pipe and fitting for cooling tank

EXHAUST SYSTEM
- Muffler - Standard (Automotive and residential types available)
- Flexible exhaust connection.....24" length

SAFETY CONTROLS
- Mechanical type (low oil pressure, high water temp.)
- Electrical type (available only when unit is equipped with electric start and battery charging generator)

FOUNDATION BOLTS
REMOTE CONTROL STATION
BOOSTER RELAY
CROSS CURRENT COMPENSATOR
AUTOMATIC PANELS..Power demand or power failure panels (available only on units equipped with electrical starting systems).
OIL LEVEL REGULATOR, HOSE AND FITTINGS
TANK AND STAND - For auxiliary lube oil supply

GENERATOR SPECIFICATIONS

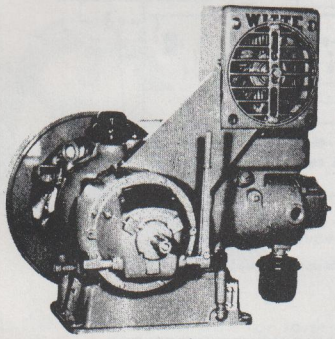
(ALL MODELS)

Speed	1800 RPM (60 cycle) 1500 RPM (50 cycle)
Rating	Same for both 50 and 60 cycle (See Page 7)
Bearings	Ball bearing
Cooling	Integral fan
Drive	V-Belt
Enclosure	Drip proof
Frame	Fabricated steel
Windings	Coils varnish impregnated and baked
Overload	125% rated KVA
Temperature Rise	50° C.
Voltage	Single phase 120/240 V, 3 wire, 50 or 60 cycle Three phase 120/208 V, 4 wire, 50 or 60 cycle

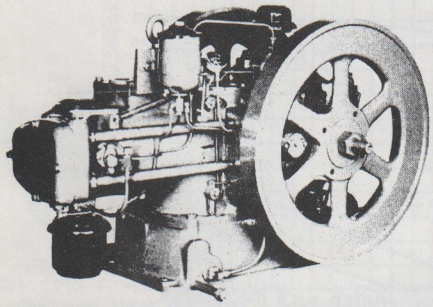
WITTE Diesel Power Units
Model BD

MODEL		BD-9RC	BD-9TS	BD-9TC	BD-9RS	BDRC	BDTS	BDTC	BDRS
Continuous	HP	9	9	9	9	7.8	8	8	7.8
Operation	RPM	1040	1040	1040	1040	900	900	900	900
Maximum	HP	11	11	11	11	10	10.25	10.25	10

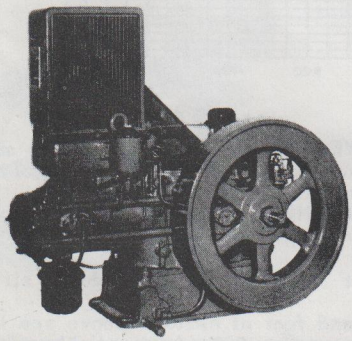
NO. OF CYLINDERS	ALL MODELS	1
CYCLE	ALL MODELS	4 stroke
BORE	ALL MODELS	4-1/4 inch
STROKE	ALL MODELS	6 inch



MODEL BD-9RC Power Unit with condenser cooling system and with clutch power take-off.



MODEL BD-9TS Power Unit for tank cooling system. This Model has dual flywheels and stubshaft for power take-off.



MODEL BD-9RS Power Unit with condenser cooling system, dual flywheels and stubshaft for power take-off.

OPTIONAL ACCESSORIES

STARTING SYSTEM - Electric, 12-volt.

FUEL SYSTEMS - 22-1/2" x 31", 55-gal. fuel tank; 36" x 60", 250-gal. fuel tank; 48" x 72", 560-gal. fuel tank; Underground tank fittings; Flexible fuel line connections; Fuel line filter.

COOLING SYSTEM - Cooling tank, galvanized, Pipe and fitting for cooling tank; Float valve for tank.

EXHAUST SYSTEM - Muffler, standard (limited silencing); Muffler, auto. type (medium silencing); Muffler, residential type (maximum silencing); Flexible exhaust connection, 24" length.

SAFETY CONTROLS - Mechanical type, low oil pressure, high water temperature; Electrical type, low oil pressure, high water temperature (available only when unit is equipped with electric start and battery charging generator).

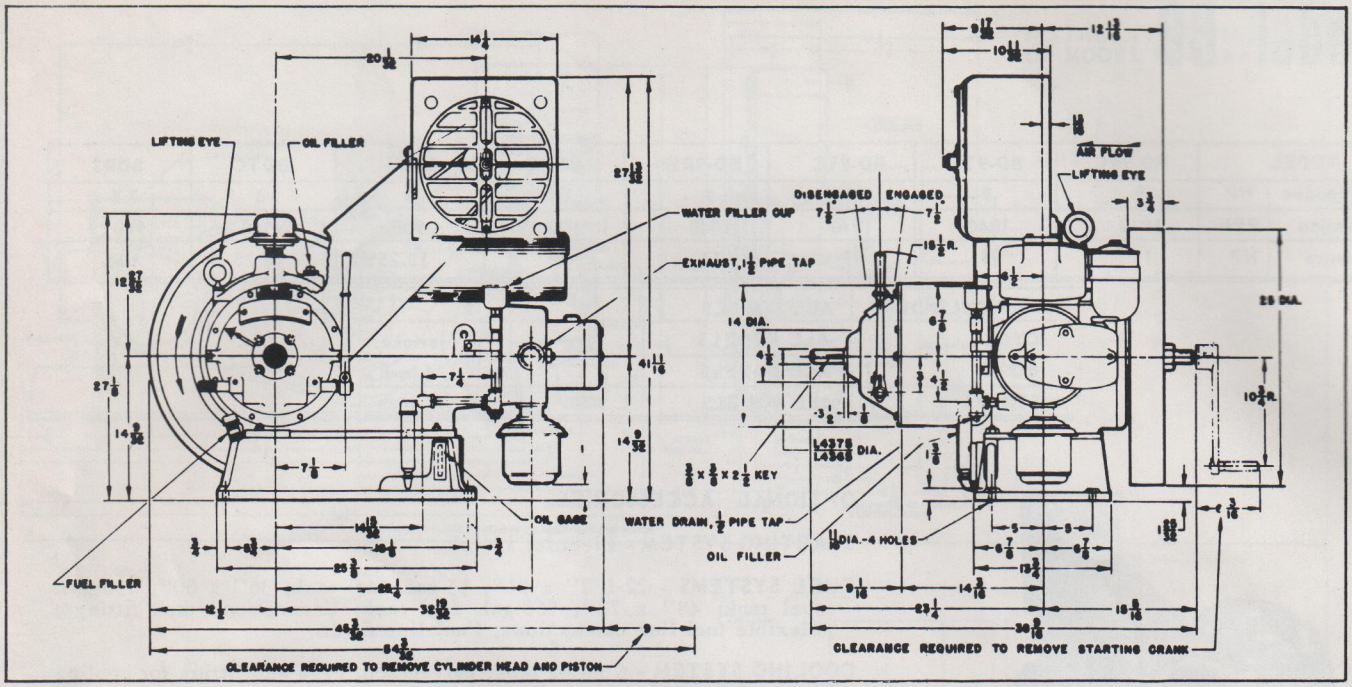
FOUNDATION BOLTS. REMOTE CONTROL STATION. BOOSTER RELAY. OIL LEVEL REGULATOR, HOSE and **FITTINGS. TANK** and **STAND,** for auxiliary lube oil supply (used with regulator).

ENGINE - POWER UNIT SPECIFICATIONS

MODEL BDRC - BD-9RC POWER UNIT

ENGINE: Water-cooled, 85 cu. in. displ., diesel with single heavy flywheel
Crank Pin Bearing dia. x length - 2-1/4" x 2-3/8"
Dia. of Crankshaft at Main Bearings - 2-1/8"
Piston Pin Bearing dia. x length - 1-3/4" x 1-3/4"
Compression Rings (No.) - 4
Exhaust Pipe dia. (U.S. Pipe Thread) - 1-1/2"
Inlet Water Pipe Dia. (U.S. Pipe Thread) - 1/2"
Lubricating Oil (U. S. Gallons) - 1-3/4"
Outlet Water Pipe dia. (U.S. Pipe Thread) - 1-1/4"
Cooling Water (U. S. Gallons) - Tank System - 194
Condenser System - 2-1/2
AIR CLEANER: Oil Bath Type
BASE: Box type, cast iron (includes 7 qt. lubricating oil reservoir and 4-1/4 gal. fuel oil reservoir)
CLUTCH: Friction type power take-off clutch.
FILTERS: Fuel and lubricating oil
GAUGES: Lubricating oil pressure and lubricating oil level.
GOVERNOR: Centrifugal, flyball type.
PUMPS: Fuel injection, fuel supply (automotive type), lubricating oil (gear type)
RADIATOR: Condenser type cooling - includes belt-driven fan
STARTING: Manual (handcrank)
VALVES: Valves-in-head - intake port 1-9/16" dia.; exhaust port 1-9/16" dia. - removable valve seat inserts.
WEIGHTS: Approx 1150 pounds
Domestic Crate - approx. 170 pounds
Export Box - approx. 370 pounds

WITTE Diesel Power Units

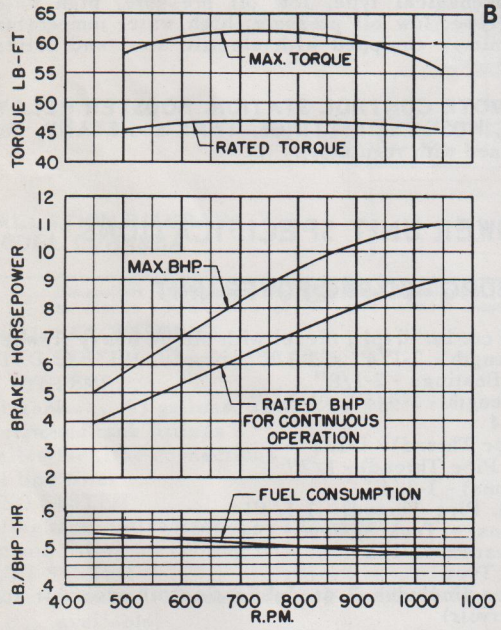


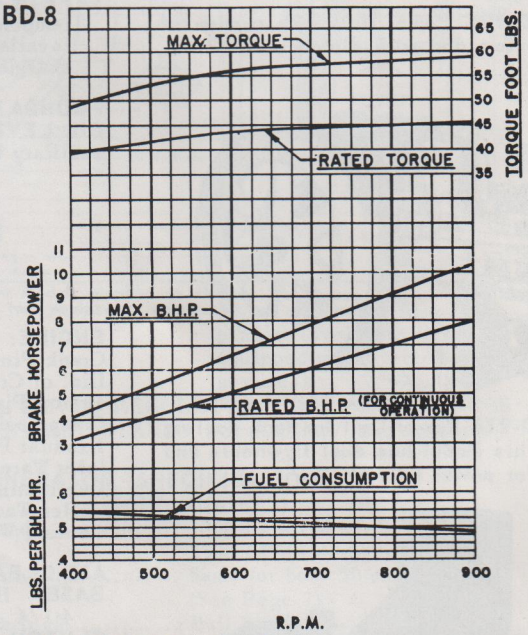
INSTALLATION DIAGRAM OF MODEL BDRC (or BD-9RC)

Dimensions are approximate. Certified installation prints for the different models supplied on request.

We reserve the right to change specifications at any time without incurring any obligation for equipment previously or subsequently sold.

PERFORMANCE CURVES FOR BARE ENGINE





PERFORMANCE CURVES: Power curves are corrected to standard conditions of 29.92" barometric pressure and 60°F air temperature, and the fuel consumption curves shown apply to the rated horsepower for continuous operation, using a No. 2 Diesel Fuel with 38° A.P.I. gravity, 18,400 b.t.u./lb., L.H.V., and a 45 minimum cetane number.

RATED HORSEPOWER: The rated horsepower output is that recommended on the basis of continuous 24-hour-a-day operation.

INTERMITTENT HORSEPOWER: For intermittent service the engine can be rated 10% above the continuous rated horsepower.

MAXIMUM HORSEPOWER: Under no circumstances should the engine be applied to loads and speeds in excess of those shown on the maximum B.H.P. curve.

DEDUCTIONS ON RATINGS: The following deductions should be made for variations from the standard atmospheric conditions:

1% for each 10° F above 60° F atmospheric air temperature.

3% for each thousand feet of altitude above sea level.

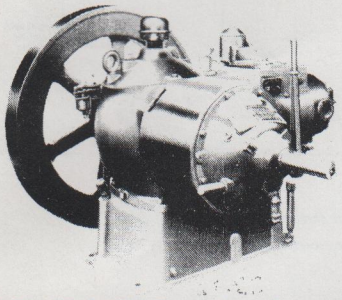
For a belt driven generator 80% of the rated horsepower to be used to compensate for belt losses and generator efficiencies.

WITTE Diesel Power Units

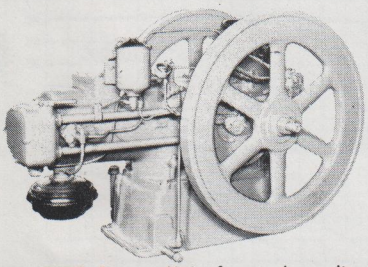
Model CD

MODEL		CD-14RC	CD-14TS	CD-14TC	CD-14RS	CDRC	CDTS	CDTC	CDRS
Continuous	HP	14	14	14	14	12.5	12.5	12.5	12.5
Operation	RPM	800	800	800	800	750	750	750	750
Maximum	HP	16.5	16.5	16.5	16.5	15.5	15.5	15.5	15.5

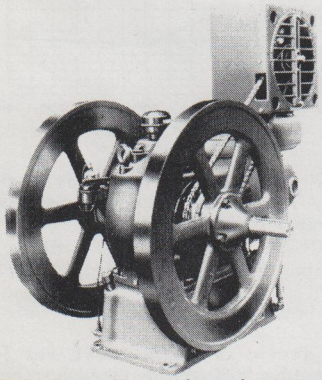
NO. OF CYLINDERS	ALL MODELS	1
CYCLE	ALL MODELS	4 stroke
BORE	ALL MODELS	5 inch
STROKE	ALL MODELS	8 inch



MODEL CD-14TC Power Unit for tank cooling system and with clutch power take-off. Eliminates need for condenser and fan but requires tank with supply of clean, fresh water.



MODEL CDTS Power Unit for tank cooling system and with dual flywheels and stub-shaft. Does not have clutch.



MODEL CDRS Power Unit with condenser cooling system, dual flywheels and stub-shaft. Does not have clutch.

OPTIONAL ACCESSORIES

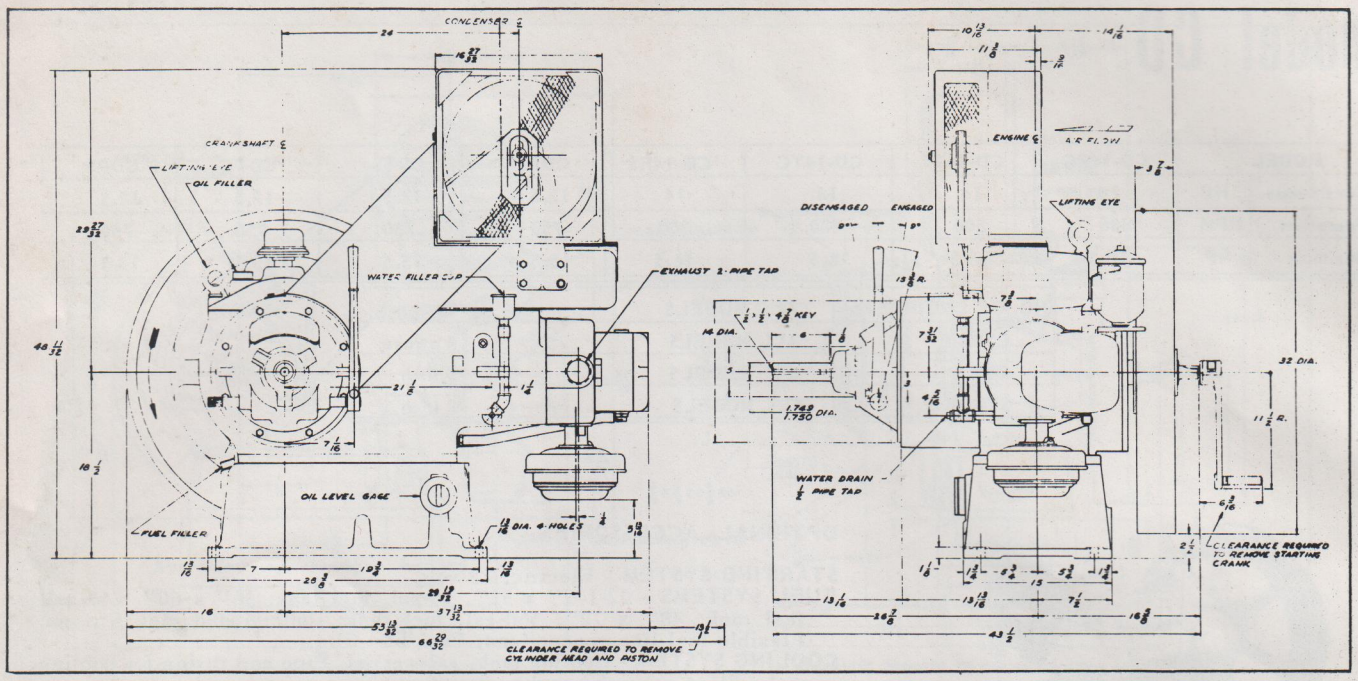
STARTING SYSTEM - Electric, 12-volt.
FUEL SYSTEMS - 22-1/2" x 31", 55-gal. fuel tank; 36" x 60", 250-gal. fuel tank; 48" x 72", 560-gal. fuel tank; Underground tank fittings; Flexible fuel line connections; Fuel line filter.
COOLING SYSTEM - Cooling tank, galvanized, Pipe and fitting for cooling tank; Float valve for tank.
EXHAUST SYSTEM - Muffler, standard (limited silencing); Muffler, auto. type (medium silencing): Muffler, residential type (maximum silencing); Flexible exhaust connections, 24" length.
SAFETY CONTROLS - Mechanical type, low oil pressure, high water temperature; Electrical type, low oil pressure, high water temperature (available only when unit is equipped with electric start and battery charging generator).
FOUNDATION BOLTS. REMOTE CONTROL STATION. BOOSTER RELAY. OIL LEVEL REGULATOR, HOSE and **FITTINGS. TANK** and **STAND,** for auxiliary lube oil supply (used with regulator).

ENGINE - POWER UNIT SPECIFICATIONS

MODEL CDRC - CD-14RC POWER UNIT

ENGINE: Water-cooled, 157 cu. in. displ., diesel with single heavy flywheel.
Crank Pin Bearing dia. x length - 2-7/8" x 3"
Dia. of Crankshaft at Main Bearings - 2-1 2"
Piston Pin Bearing dia. x length - 1-13/16" x 2-1 2"
Compression Rings (No.) - 4
Exhaust Pipe dia. (U. S. Pipe Thread) - 2"
Inlet Water Pipe dia. (U. S. Thread) - 1/2"
Outlet Water Pipe dia. (U. S. Pipe Thread) - 1-1/4"
Lubricating Oil (U. S. Gallons) - 2-1/2
Cooling Water (U. S. Gallons) - Tank System - 260
Condenser System - 3-1/4
AIR CLEANER: Oil Bath Type
BASE: Box type, cast iron (includes 2-1/2 gal. lubricating oil reservoir and 8 gal. fuel oil reservoir).
CLUTCH: Friction type power take-off clutch
FILTERS: Fuel and lubricating oil
GAUGES: Lubricating oil pressure, lubricating oil level
GOVERNOR: Centrifugal, flyball type
PUMPS: Fuel injection, fuel supply (automotive type), lubricating oil (gear type)
RADIATOR: Condenser type cooling - Includes belt-driven fan.
STARTING: Manual (handcrank)
VALVES: Valves-in-head - intake port 1-9/16" dia.; exhaust port 1-9/16" dia. removable valve seat inserts.
WEIGHT: approximately 1630 lbs.
Domestic Crate - approximately 245 lbs.
Export Box - approximately 410 lbs.

WITTE Diesel Power Units



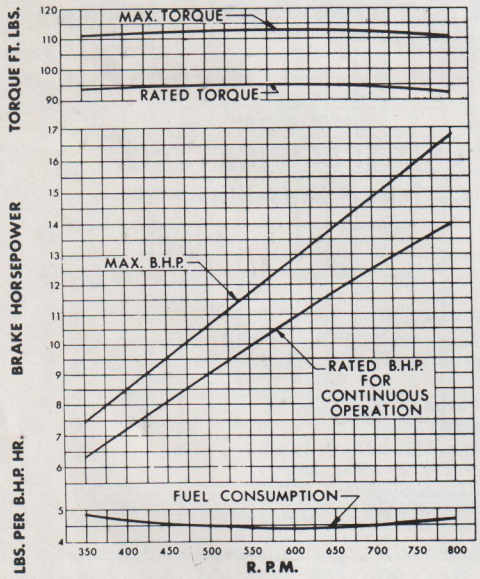
INSTALLATION DIAGRAM OF MODEL CDRC (or CD-14RC)

Dimensions are approximate. Certified installation prints for the different models supplied on request.

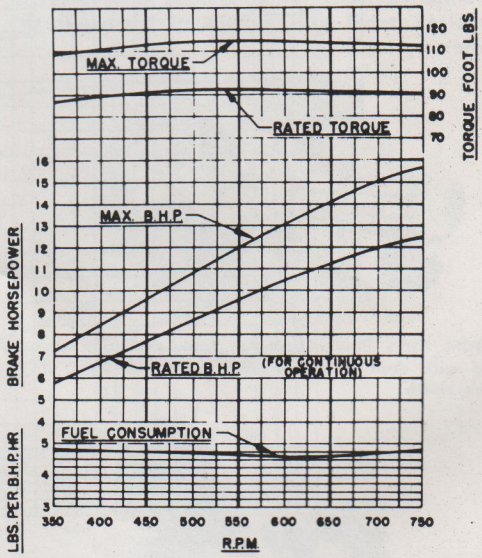
We reserve the right to change specifications at any time without incurring any obligation for equipment previously or subsequently sold.

PERFORMANCE CURVES FOR BARE ENGINE

CD-14



CD-12



PERFORMANCE CURVES: Power curves are corrected to standard conditions of 29.92" barometric pressure and 60°F air temperature, and the fuel consumption curves shown apply to the rated horsepower for continuous operation, using a No. 2 Diesel Fuel with 38° A.P.I. gravity, 18,400 b.t.u./lb., L.H.V., and a 45 minimum cetane number.

RATED HORSEPOWER: The rated horsepower output is that recommended on the basis of continuous 24-hour-a-day operation.

INTERMITTENT HORSEPOWER: For intermittent service the engine can be rated at 10% above the continuous rated horsepower.

MAXIMUM HORSEPOWER: Under no circumstances should the engine be applied to loads and speeds in excess of those shown on the maximum B.H.P. curve.

DEDUCTIONS ON RATINGS: The following deductions should be made for variations from the standard atmospheric conditions:

1% for each 10° F above 60°F atmospheric air temperature.

3% for each thousand feet of altitude above sea level.

For a belt driven generator 80% of the rated horsepower to be used to compensate for belt losses and generator efficiencies.

WITTE Engine Corporation

555 EAST 56 HIWAY
OLATHE, KANSAS 66061