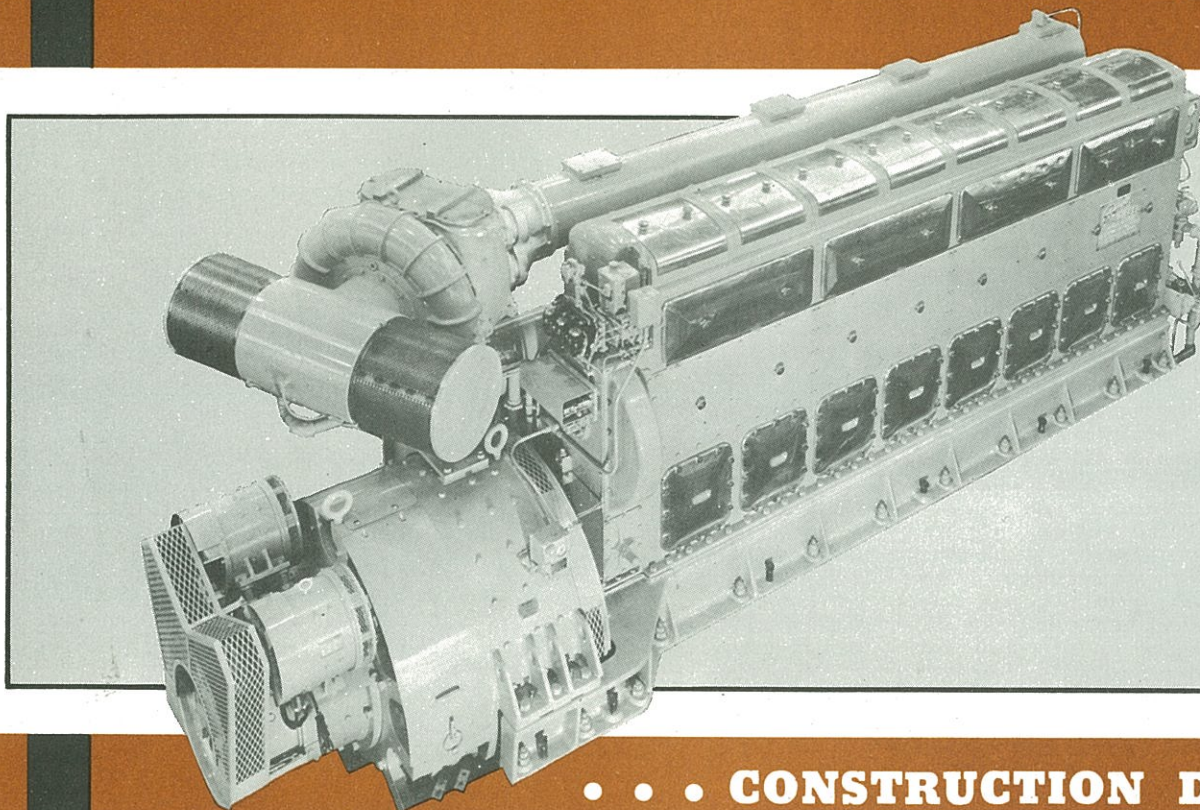


Superior

MODEL 65-LX

LOCOMOTIVE DIESEL



• • • CONSTRUCTION DETAILS

BEDPLATE is a steel welded design. It is provided with heavily ribbed and flanged transverse members which are line bored with their respective bearing caps to support the crankshaft in near perfect alignment. The bedplate is extended to carry the generator as a single, complete and rigid installation.

CYLINDER BLOCK is a weldment, and is of box type construction to give great strength and rigidity. Removable cover plates permit easy access to all parts of the crankcase.

CRANKSHAFT is forged from a single billet of high quality, heat treated steel and is machined all over. Counterweights are provided when necessary. The crankshaft is bedded in the sturdy, rigid transverse members of the bedplate, and is not suspended by bearing caps.

MAIN BEARINGS are of the split precision type requiring no shims or hand fitting. They are easily replaced without removing the crankshaft.

CONNECTING RODS are I-beam section forgings of high quality steel, carefully heat treated and machined, and drilled for pressure lubrication of the piston pin bearing. Crankpin bearings are of the same precision type as the main bearings.

CAMSHAFT of one piece, high quality steel is fitted with hardened and ground cams and supported by bronze bearings between each group of cams, with thrust bearings at the sprocket end. It is driven by multiple strand roller chain fitted with adjustable roller bearing idlers on the slack side.

OIL COOLED PISTONS are made of special cast iron. They are machined and ground to close tolerances and fitted with the required number and kind of piston rings.

CYLINDER LINERS are of the removable, wet sleeve type. They are accurately bored, ground and machined all over. Honing to a mirror finish insures a uniformly accurate piston fit and results in a quieter running engine and longer life for piston and liner. Rubber packing rings prevent water from entering the base.

CYLINDER HEADS are steel castings, carefully proportioned to insure equal expansion and contraction throughout. Large unobstructed water jackets are provided with ample clean-out openings. Each head supports its own rocker arm shaft and contains the spray nozzle, inlet and exhaust valves and one indicator valve.

INLET AND EXHAUST VALVES are made of special heat-resisting material and are interchangeable. Valves seat directly in head.

GOVERNOR is of the hydraulic type for locomotive service and is recommended for most exacting regulation requirements.

FUEL SYSTEM is of the mechanical injection type with an individual pump and short length of tubing for each cylinder. Injection pumps are constant stroke, jerk type, mounted directly above, and actuated by, the camshaft. Spray nozzles are located in the top of the cylinder heads and are of the spring-loaded differential type requiring no adjustment. Pumps and nozzles are easily accessible.

(Contd.)

Superior

MODEL 65-LX

LOCOMOTIVE DIESEL

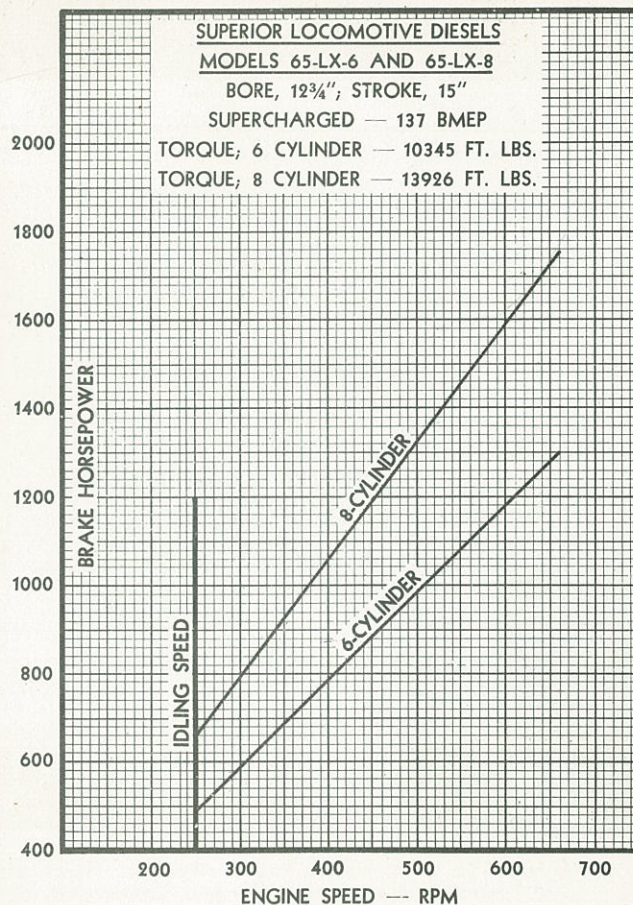
PERFORMANCE CHART

CONSTRUCTION DETAILS (Contd.)

LUBRICATION SYSTEM is of the wet sump type with the lubricating oil carried in the engine bed and circulated by a single section gear type pump driven from the crankshaft. The pump takes oil from the sump through a strainer and foot valve and discharges it through filters and cooler to the engine header. From the header the oil flows through the pressure lines to the main bearings; from here through drilled passages in the crankshaft to the crankpin bearings and then through the rifle drilled connecting rods to the piston pin bearings and cooling chambers in the pistons, finally returning by gravity to the sump.

THE BUCHI SUPERCHARGING SYSTEM is used on Models 65-LX. The supercharging unit is entirely self-contained, and is connected to the engine only through the exhaust and air intake manifolds. It consists of a gas turbine driven by the engine exhaust and driving a centrifugal blower which supplies, under pressure through the conventional air intake manifold, all the air required by the engine. Operation of the supercharger is fully automatic at all speeds and loads and no control devices are necessary. Supercharging results in a substantially greater power output from the same engine mechanism, hence the overall mechanical efficiency of the engine is increased with a corresponding decrease in the rate of fuel consumption. The fuel consumption curve per BHP per hour has a flatter shape resulting in considerable savings at partial loads. Experience indicates that the increased horsepower does not appreciably affect the life of the engine or increase the maintenance cost.

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



SPECIFICATIONS

	65-LX-6	65-LX-8
Number of Cylinders	6	8
Cycles	4	4
Cylinder bore, inches	12 $\frac{3}{4}$	12 $\frac{3}{4}$
Piston stroke, inches	15	15
Displacement, cubic inches	11,491	15,322
Minimum idling speed, RPM	250	250
Rated RPM	660	660
Rated BHP at 660 RPM	1300	1750
* Net weight, dry, with standard equipment, lbs.	36,000	45,000
* Domestic shipping weight, lbs.	40,000	50,000
** Length, overall, including generator, inches	231	272
** Width, overall, engine only, inches	48	48
** Width, overall, extended generator base, inches	70 $\frac{1}{4}$	70 $\frac{1}{4}$
** Height, above C/L crankshaft, inches	82	82
** Depth, below C/L crankshaft, inches	26 $\frac{1}{2}$	26 $\frac{1}{2}$

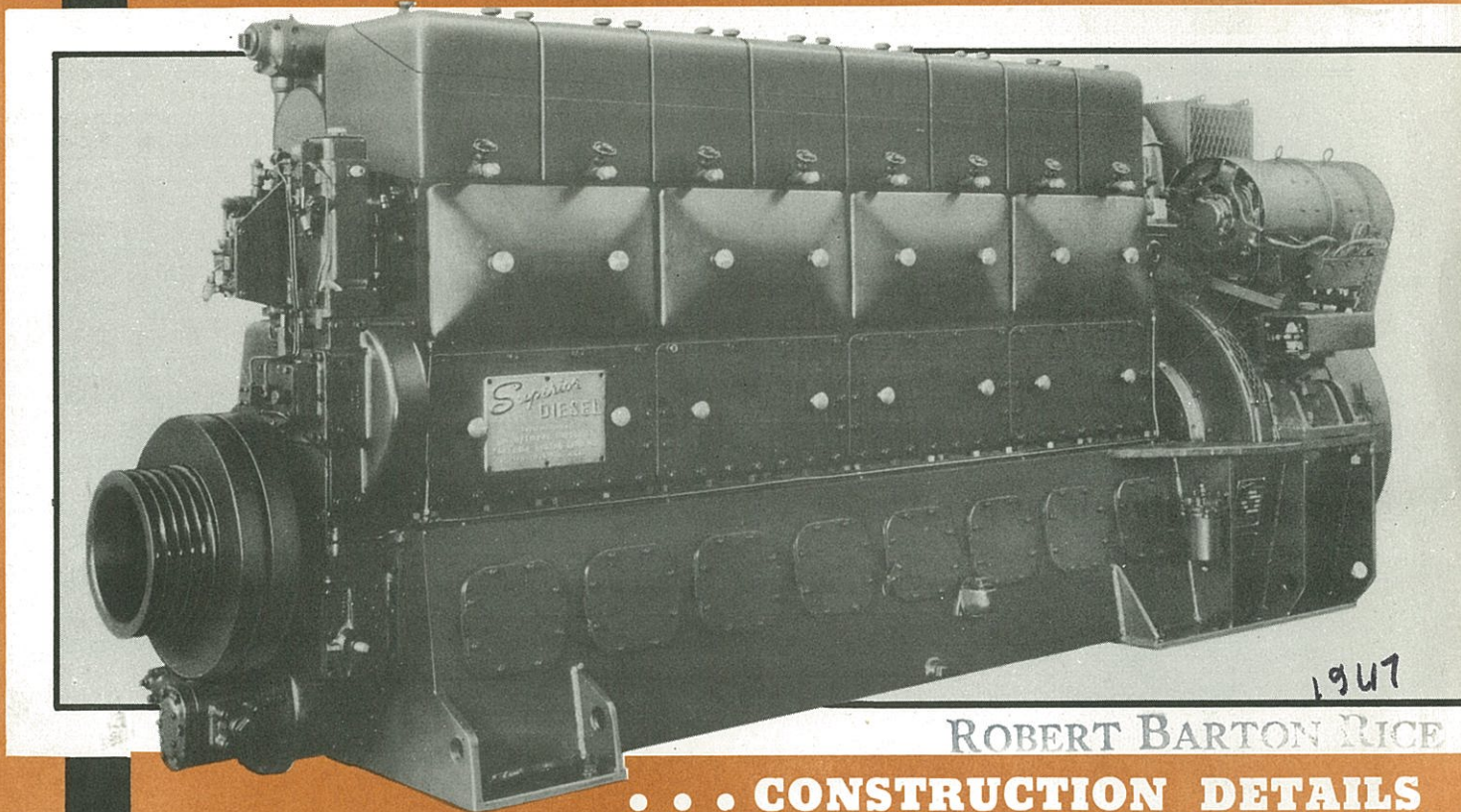
* Weights are approximate, and do not include generator. When required for special applications, weights may be modified by use of special light weight material.

** Dimensions are approximate only. Not to be used for construction purposes.

THE NATIONAL SUPPLY COMPANY

SUPERIOR ENGINE DIVISION

Plant and General Sales Office: Springfield, Ohio

*Superior***MODEL 40
LOCOMOTIVE DIESEL**

ROBERT BARTON RICE

... CONSTRUCTION DETAILS

BEDPLATE is a steel welded design. It is provided with ribbed and flanged transverse members which are line bored with bearing caps to support the crankshaft in close alignment. The bedplate is extended to carry the generator as a single, rigid installation.

CYLINDER BLOCK is an accurately machined casting of semi-steel mixture, of box type construction to give strength and rigidity. Removable plates permit easy access to all parts of the crankcase.

CRANKSHAFT is forged from a single billet and is heat treated and machined all over. Counterweights are provided when necessary. Crankshaft is bedded in the rigid transverse members of the bedplate, and is not suspended by bearing caps.

MAIN BEARINGS are of the split precision type requiring no shims or hand fitting. They are easily replaced without removing the crankshaft.

CONNECTING RODS are I-beam section forgings of high quality steel, carefully heat treated and machined, and drilled for pressure lubrication of the piston pin bearing. Crankpin bearings are of the same precision type as the main bearings.

CAMSHAFT of one piece, high quality steel is fitted with hardened and ground cams and supported by bronze bearings between each group of cams, with thrust bearings at the sprocket end. It is driven by multiple strand roller chain fitted with adjustable roller bearing idlers on the slack side.

OIL COOLED PISTONS are made of special cast iron. They are machined and ground to close tolerances and fitted with compression and oil control rings.

CYLINDER LINERS are of the removable, wet sleeve type. They are accurately bored, ground and machined

all over. Honing to a fine finish insures a uniformly accurate piston fit. Rubber packing rings prevent water from entering the base.

CYLINDER HEADS are carefully proportioned to insure equal expansion and contraction. Large water jackets are provided with ample clean-out openings. Each head supports its own rocker arm shaft and contains the spray nozzle, inlet and exhaust valves and one indicator valve.

INLET AND EXHAUST VALVES are made of heat-resisting material and are interchangeable. Valves seat directly in head.

GOVERNOR is of the hydraulic type for locomotive service.

FUEL SYSTEM is of the mechanical injection type with an individual pump and short length of tubing for each cylinder. Injection pumps are constant stroke, jerk type, mounted directly above, and actuated by, the camshaft. Spray nozzles are located in the top of the cylinder heads. Pumps and nozzles are easily accessible.

LUBRICATION SYSTEM is of the wet sump type with the lubricating oil carried in the engine bed and circulated by a gear pump driven from the crankshaft. Lubrication is provided under pressure to bearings and all principal points.

THE BUCHI SUPERCHARGING SYSTEM is used on Models 40-LX and 40A-LX. The supercharging unit is entirely self-contained, and is connected to the engine only through the exhaust and air intake manifolds. It consists of a gas turbine driven by the engine exhaust and driving a centrifugal blower which supplies air under pressure through the conventional air intake manifold. Operation of the supercharger is fully automatic at all speeds and loads and no control devices are necessary.

Superior

MODEL 40 LOCOMOTIVE DIESEL

SPECIFICATIONS

	NON-SUPERCHARGED		SUPERCHARGED			
	40-L-6	40-L-8	40-LX-6	40-LX-8	40A-LX-6	40A-LX-8
Number of cylinders	6	8	6	8	6	8
Cycles	4	4	4	4	4	4
Cylinder bore, inches	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2
Piston stroke, inches	10 1/2	10 1/2	10 1/2	10 1/2	10 1/2	10 1/2
Displacement, cubic inches	3576	4768	3576	4768	3576	4768
Minimum idling speed, RPM	350	350	350	350	350	350
Rated RPM	1100	1100	1100	1100	1100	1100
Rated BHP at 1100 RPM	375	500	500	675	675	900
*Net weight, dry, w/standard equipment, lbs.	13,500	16,500	14,250	18,000	14,250	18,250
* Domestic shipping weight, lbs.	15,000	18,000	15,750	19,250	15,750	19,500
** Length, overall, inches	103	129	122	148	122	148
** Width, overall, inches	55 7/8	55 7/8	55 7/8	55 7/8	55 7/8	55 7/8
** Height above C/L crankshaft, inches	51 1/2	51 1/2	51 1/2	51 1/2	51 1/2	51 1/2
** Depth below C/L crankshaft, inches	22 3/4	22 3/4	22 3/4	22 3/4	22 3/4	22 3/4

*Weights are approximate.

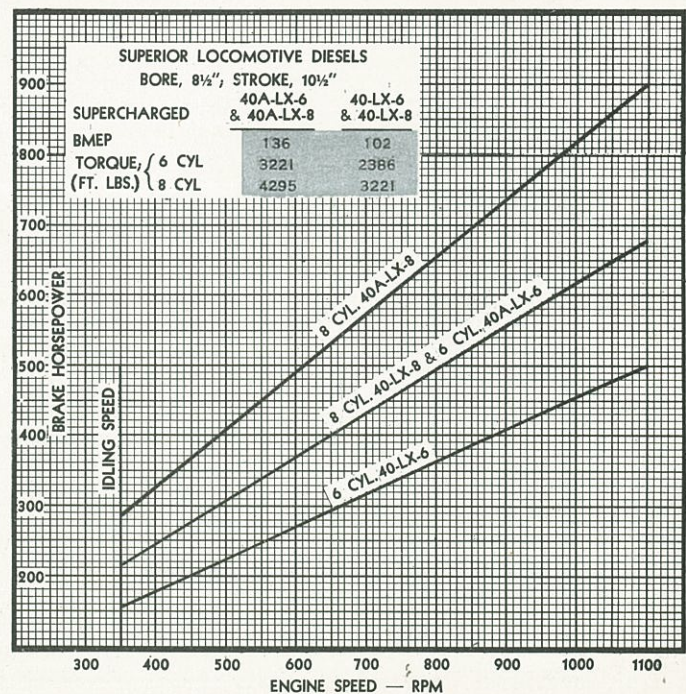
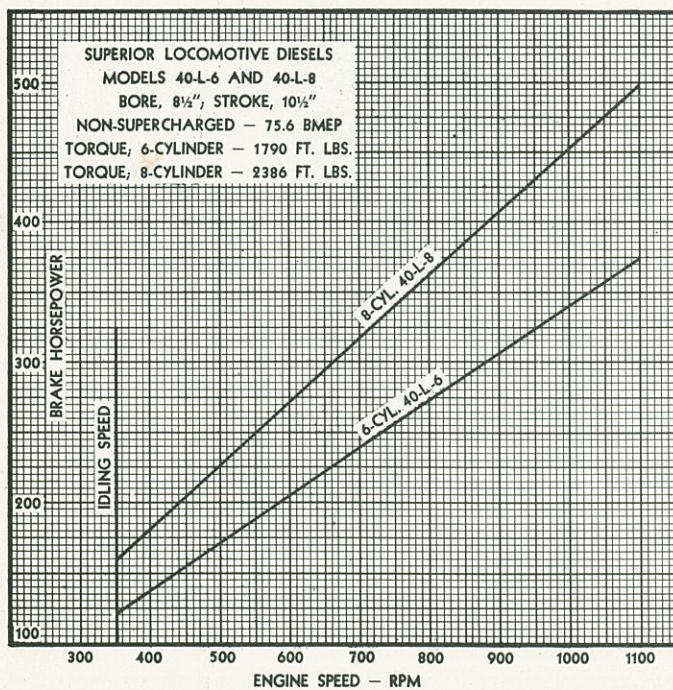
When required for special applications, weights may be modified by use of special light weight material.

**Dimensions are approximate only. Not to be used for construction purposes.

Weights and dimensions do not include generator.

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

PERFORMANCE CHARTS



THE NATIONAL SUPPLY COMPANY
SUPERIOR ENGINE DIVISION

Plant and General Sales Office: Springfield, Ohio