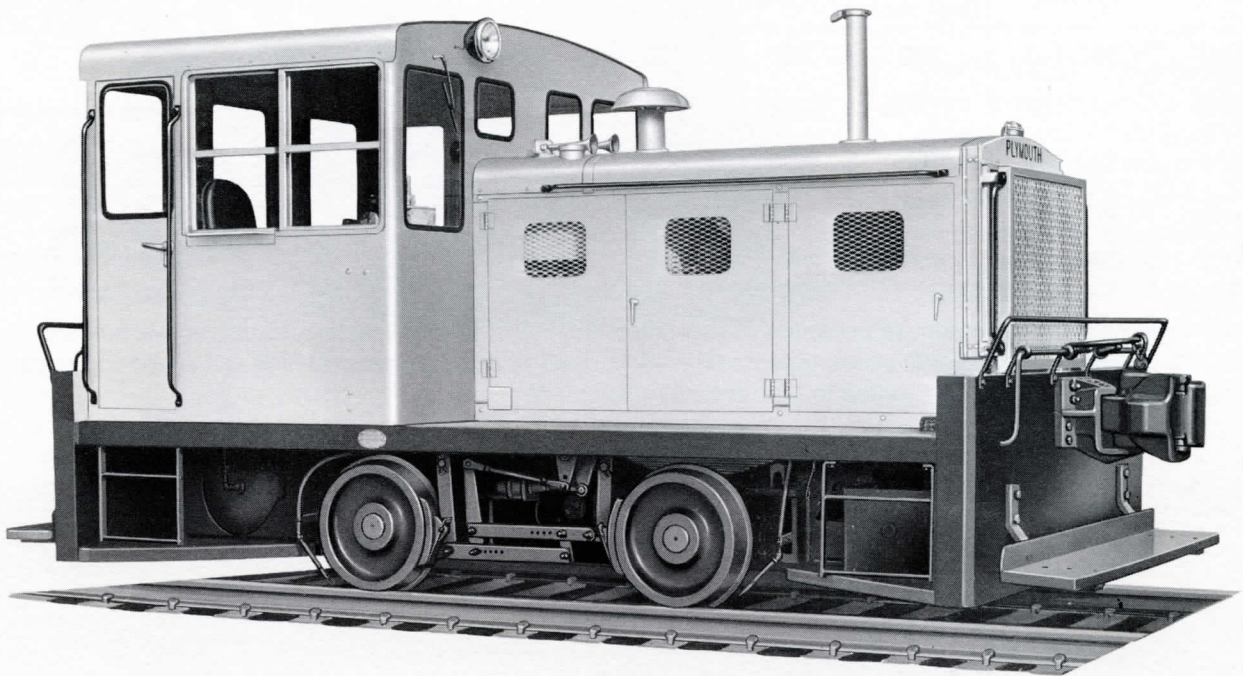


plymouth locomotives

J-series



14 to 25 tons

Diesel or gasoline engine

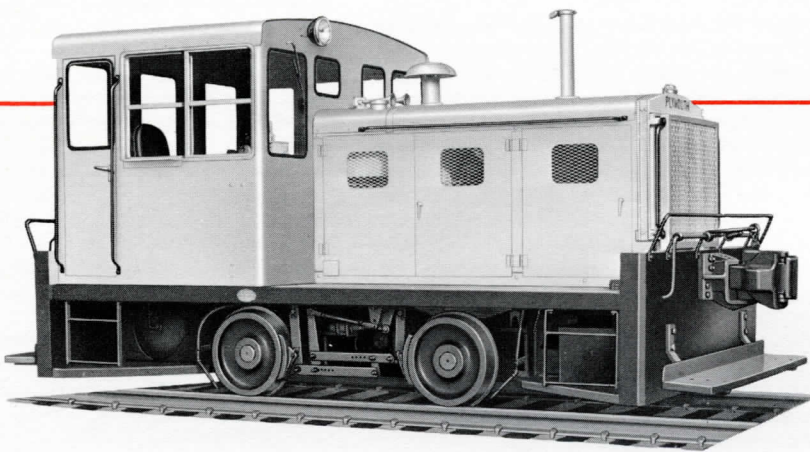
Hydraulic or mechanical drive

J-series (4 wheel) — JW-series (6 wheel)

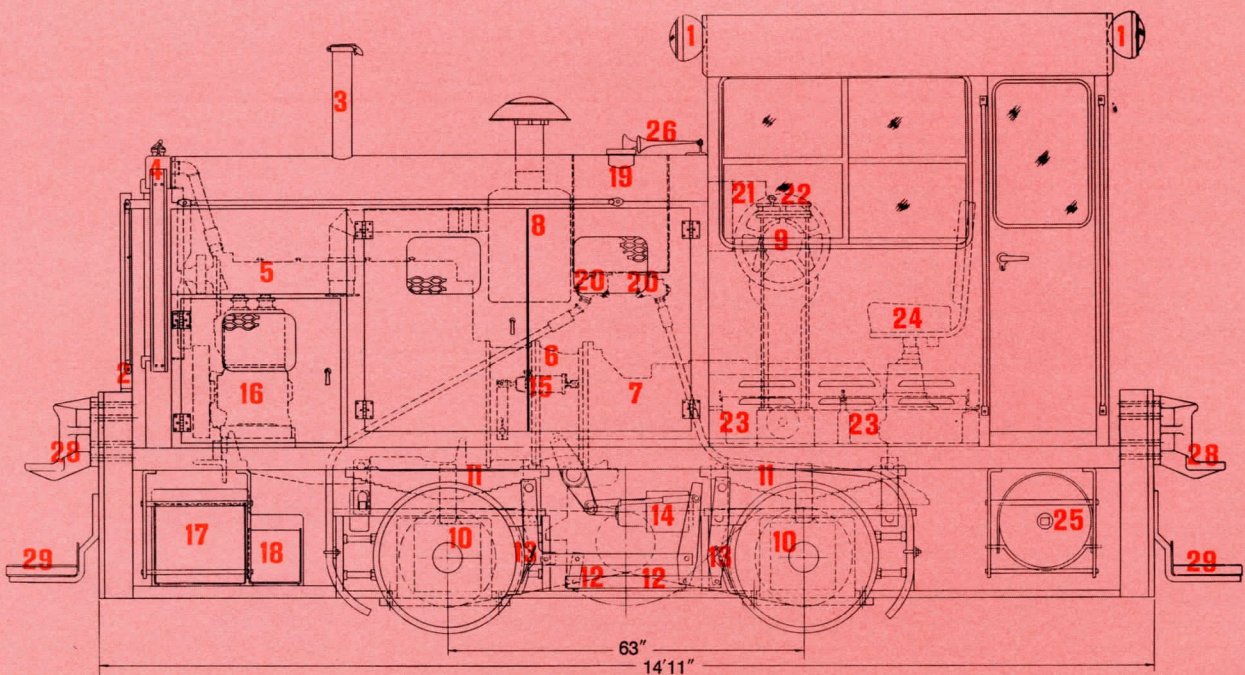
plymouth...will do it!

plymouth locomotive

J
SERIES



The PLYMOUTH J-series locomotives are available in four wheel or six wheel drive in weights from 14 to 25 tons. Equipped with either diesel or gasoline engine, with hydraulic or mechanical drive. Adaptable for portable track and where heavier locomotives cannot be used. Weight, speed and power to match your exact haulage requirements.



General outline drawing J-series (4 wheel) (Dimension may be altered within limitations)

TONS A PLYMOUTH J-SERIES LOCOMOTIVE WILL START

Based on 30% co-efficient of adhesion and 10# per ton resistance

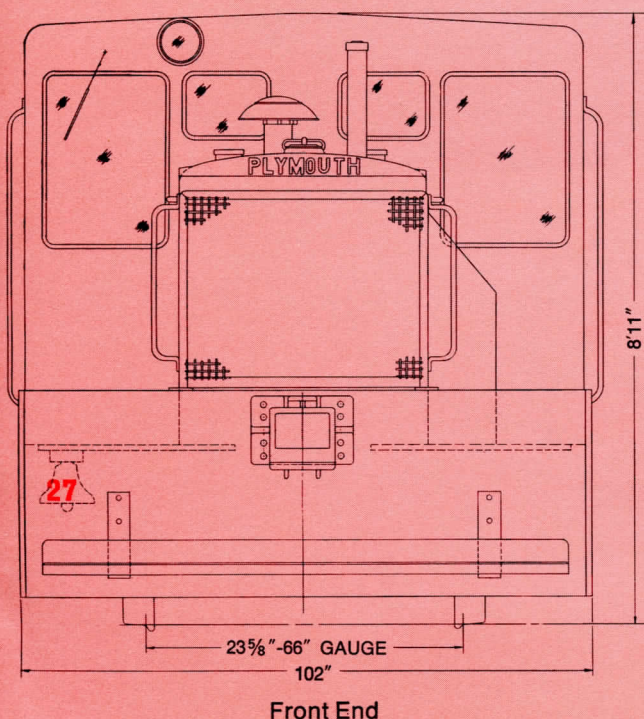
LOCOMOTIVE WEIGHT	STARTING DRAWBAR PULL	
	ON STRAIGHT AND LEVEL TRACK	ON 2% GRADE
15 TONS	900 TONS	165 TONS
18 TONS	1080 TONS	198 TONS
20 TONS	1200 TONS	220 TONS
22 TONS	1320 TONS	242 TONS
25 TONS	1500 TONS	275 TONS

TONS A PLYMOUTH J-SERIES LOCOMOTIVE WILL HAUL

Based on 30% co-efficient of adhesion and 10# frictional resistance per ton *

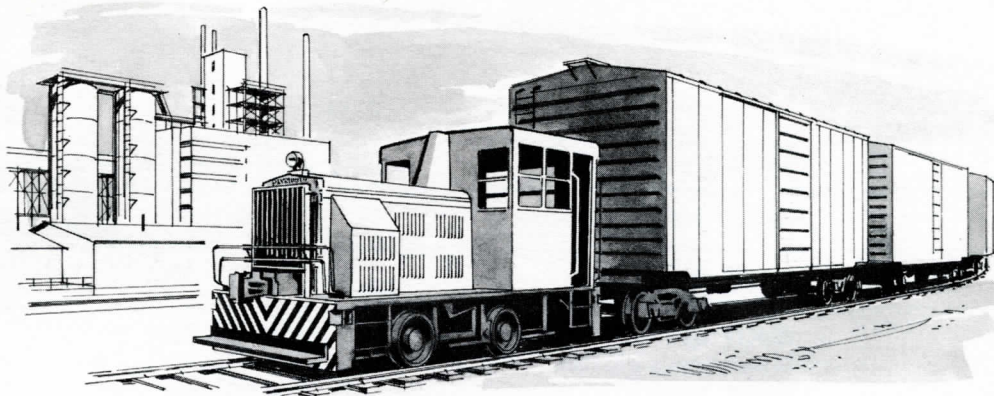
LOCOMOTIVE WEIGHT	HORSE-POWER	5 MPH		10 MPH		15 MPH		20 MPH	
		STRAIGHT & LEVEL TRACK	1% GRADE	STRAIGHT & LEVEL TRACK	1% GRADE	STRAIGHT & LEVEL TRACK	1% GRADE	STRAIGHT & LEVEL TRACK	1% GRADE
15 TONS	100-140	500	167	250	86	187	64	125	43
18 TONS	140-160	TONS	TONS	TONS	TONS	TONS	TONS	TONS	TONS
20 TONS	160-200	PER	PER	PER	PER	PER	PER	PER	PER
22 TONS	200-240	100	100	100	100	100	100	100	100
25 TONS	240-275	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.

*These haulage tables are estimates, as the locomotives can be built with various engines, torque converters and gear reductions, all of which affect speed, power and tractive effort. Your Plymouth representative will assist you in determining which combinations are best suited to your specific application.



1. LIGHT
2. GRILLE
3. EXHAUST OUTLET
4. RADIATOR
5. ENGINE
6. TORQUE CONVERTER
7. TRANSMISSION
8. AIR CLEANER
9. HAND BRAKE
10. AXLE, AXLE BOXINGS & SLIDES
11. SPRINGS
12. CHAINS
13. BRAKE SHOES
14. AIR BRAKE CYLINDER
15. AIR CLUTCH CYLINDER
16. AIR COMPRESSOR
17. FUEL TANK
18. HYDRAULIC TANK
19. SAND BOX
20. SANDER TRAPS
21. INSTRUMENT PANEL
22. CONTROL STAND
23. BATTERIES
24. SEAT
25. AIR RESERVOIR
26. HORN
27. BELL
28. COUPLER POCKET
29. FOOT BOARDS

general specifications and characteristics for the J-series



GAUGE.....23 $\frac{3}{8}$ " to 66"
DRIVEN WHEELS.....4(J)...6(JW)
WHEEL DIAMETER.....24"
WEIGHT.....14 to 25 tons
LENGTH OVER BUMPERS ..14'11"(J).....16'0"(JW)
WIDTH OVERALL.....102"
HEIGHT.....8'11"
WHEELBASE.....63"(J)...87 $\frac{1}{2}$ "(JW)

Hydraulic Torque Converter — The hydraulic torque converter is matched to performance and horsepower of the engine. It is mounted directly to the engine flywheel housing and connected to the locomotive transmission by a flexible coupling. Coupled to a transmission of one or more speeds, the torque converter automatically produces the exact reduction ratio needed to power various loads. Smooth, sustained acceleration with the engine working in its most effective range is provided. A torque converter has few wearing parts, overload is eliminated and protective cushioning against sudden shocks and strains guarantees longer machine and engine life.

Transmission — Plymouth transmissions have been developed especially for locomotive service and incorporate the following features: equal power and speed in either direction; all shafts carried on roller or ball bearings enclosed and running in oil; all gears of liberal dimensions in selected steels properly machined and heat treated; fool proof reverse through a wide faced sliding pinion which engages internal teeth in the bevel reversing gears; drive sprockets are in approximately the same horizontal plane as the driven sprockets; controls conveniently located in the operating compartment.

Final Drive — Heavy 2 $\frac{1}{2}$ " pitch roller chain drive direct from the transmission to each axle. Driven sprockets on the axles are split for easy replacement if required.

Electric Starting Motor — A heavy duty automotive type electric starting motor is mounted on the engine. Air or hydraulic starting is available as an optional extra.

Charging Generator — A heavy duty belt driven automotive type generator with regulator and ammeter supplies current to the storage battery.

Storage Battery — A heavy duty lead acid type battery supplies power for the electric starter, light circuits, etc.

Frame — The end and side frame members are torch cut from heavy steel plate. All parts including gussets, crossties and supporting brackets are then welded into a one-piece frame that is practically indestructible.

Axle Bearings — Timken heavy duty tapered roller bearings mounted in Plymouth oil tight, dirtproof axle boxings.

Springs — Semi-elliptic, oil tempered springs are furnished, one over each axle boxing. Spring suspension has cross-equalization (3-point suspension) to eliminate excessive strain in the frame structure, to assure smooth riding under all conditions and to reduce the possibility of locomotive derailment when operating over rough and uneven track.

Wheels — 24" diameter rolled steel wheels are standard. 4 $\frac{1}{2}$ " wide industrial flange and tread wheels are normally used on all narrow gauge locomotives; 5 $\frac{1}{2}$ " wide AAR tread on standard and broad gauge locomotives. Centers and tires are optional extra. The 6-wheel locomotive has plain tread wheels on the center axle, 6" wide.

Axles — The axles are of large diameter, selected steel properly machined and heat treated.

Couplers — Link and pin couplers are standard equipment. Height of the pocket is established to customer's specific requirements prior to completion of the locomotive. If requirements are known at the time the proposal is submitted coupler arrangement will appear on the proposal sheet. Plymouth has equipped hundreds of locomotives with special coupler arrangements as well as standard automatic couplers in various sizes. Bumpers (end sills) can be prepared for adaptation of special coupler arrangements.

Foundation Brake — The foundation brake rigging is lever type acting on all wheels. Long life brake shoes contact the flange and face of the wheel.

Hand Brake — Peacock hand brake is provided for holding locomotive at rest.

Air Brakes — The air brake schedule is Westinghouse straight air type with SA-2 self-lapping brake valve. Brake cylinders are mounted on the side frames and all air brake equipment is installed in accordance with standard practice and the latest instructions of the Westinghouse Air Brake Company.

Air Compressor — A Quincy air-cooled, single stage, 2-cylinder air compressor or equal is V-belt driven from the front end of the engine. The compressor is suitable for operation against a reservoir pressure of 100# and has a displacement of 32 C.F.M. at 1000 RPM. If the locomotive is equipped with straight and automatic air or air dump, which may require additional air supply, equipment will include a larger compressor and air tanks of sufficient capacity to perform the intended service.

Sanders — Large sand boxes hold ample supply of sand. Sand is properly directed to all wheels in forward or reverse position.

Engine Hood — The engine hood top is heavy steel sheet bolted in place for easy removal. Vertical hinged service doors contain louvers and are placed for easy access to the engine compartment from either side of the locomotive.

Instrument Panel — An illuminated instrument panel located for the convenience of the operator is equipped with necessary starting and light switches. Standard equipment includes water temperature gauge, torque converter temperature and pressure gauges, lub. oil pressure gauge, ammeter and air brake pressure gauge.

Cooling System — The cooling system consists of a radiator of ample size and other components of latest design to assure adequate cooling.

Cab — The standard cab is fabricated from heavy steel shapes and plates welded together and bolted to the frame for easy removal. The design incorpo-

rates steel floor plate, large shatterproof windows mounted in rubber molding, sliding steel sash windows are installed on either side. Steel doors are conveniently located on either side. Cab is fully insulated with the latest type soundproofing and heat resistant material.

Engine Exhaust System — The exhaust from the engine is exhausted above the top of the cab unless otherwise specified.

Fuel Supply — A 50 gallon tank is standard. A fuel level gauge is installed on the tank.

Painting — High grade, high gloss enamel is applied over a primer coat to the frame and running gear at assembly. After assembly the locomotive is thoroughly cleaned, primed and painted with high grade lacquer or enamel in a color scheme selected by the user. Letters and numbers are then applied in accordance with the customer's specifications.

Testing — The locomotive is carefully adjusted and tested before shipment.

MATERIALS AND WORKMANSHIP

Materials are in accordance with A.S.T.M. specifications and those which modern practice accepts as best suited for the purpose intended. The construction and finish are of the highest quality and workmanship consistent with modern practice.

SUMMARY

Should there be any questions related to the proposed locomotive(s) or points which may need clarification, do not hesitate to bring them to the attention of your Plymouth representative or the Plymouth Locomotive Works, Plymouth, Ohio. Many features which may be considered extras by some builders are considered standard equipment on the "J" Series locomotives. These include air operated bell, air operated sanders, air horn, a complete set of lights including a headlight both front and rear, instrument panel lights, arm rest for the operator, adjustable upholstered seat for the operator.

Our aim is to build your Plymouth locomotive(s) into the best locomotive(s) possible to handle your specific rail haulage requirement.

plymouth locomotive works

plymouth, ohio

DIVISION OF
THE FATE-ROOT-HEATH COMPANY