

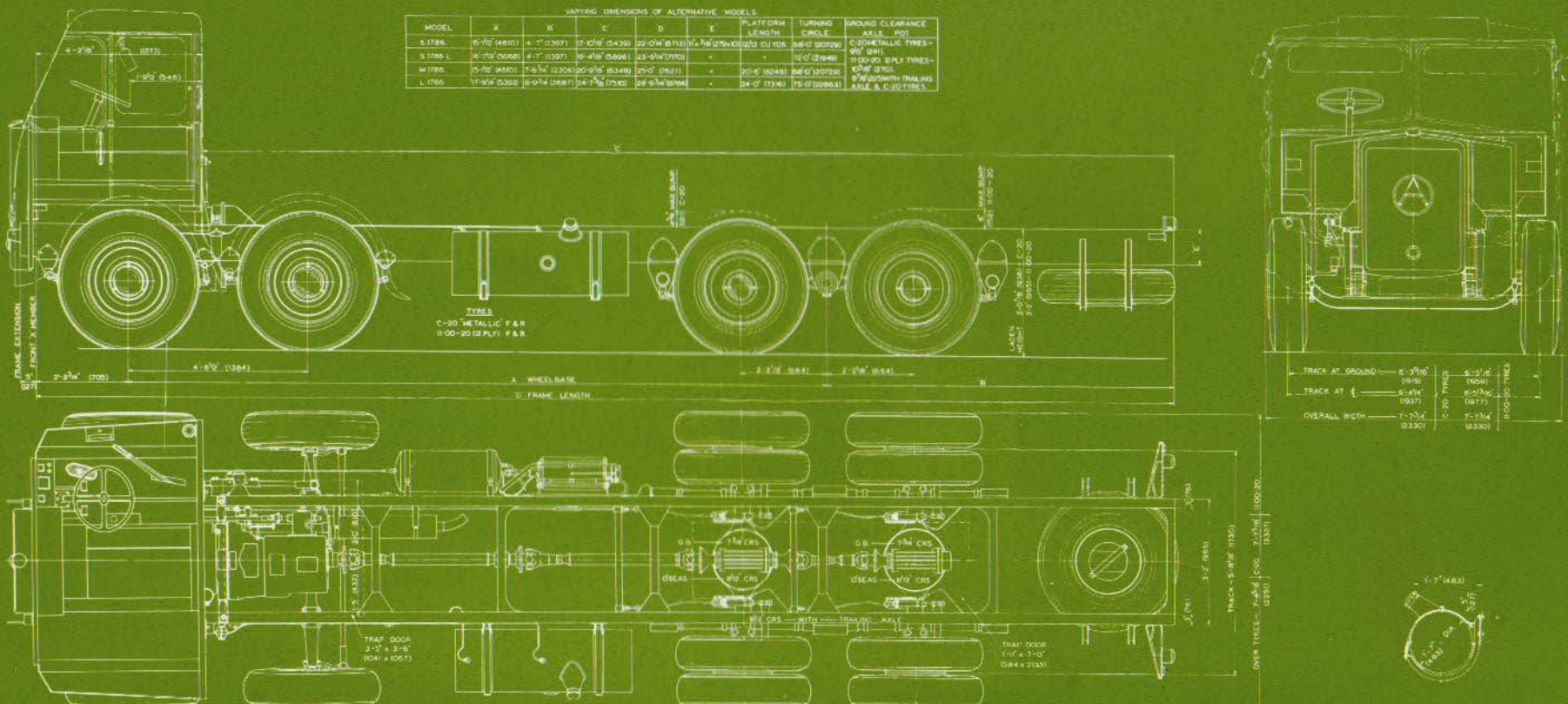
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# RANGEABILITY *by*



**8 WHEELED FREIGHT CHASSIS**  
**(Model 1786 Series)**

# Arrangement of Atkinson L.1786 Chassis



*Rangeability — Serviceability — Reliability*



## ROAD SPEEDS

*Model 557 c.m.  
Constant Mesh  
Overspeed  
Gearbox*

*Road Speeds  
with  
Worm Axle  
6 $\frac{3}{4}$  : 1 ratio*

<i>Ratio</i>	<i>m.p.h.</i>
0.77 : 1	37.5
1 : 1	28.9
1.82 : 1	15.9
3.37 : 1	8.55
6.06 : 1	4.76
6.06 : 1	4.76

*Model 557 c.m.  
Direct Top  
Constant Mesh  
Gearbox*

*Road Speeds  
with  
Worm Axle  
6 $\frac{3}{4}$  : 1 ratio*

<i>Ratio</i>	<i>m.p.h.</i>
1 : 1	28.9
1.565 : 1	18.5
2.74 : 1	10.5
4.68 : 1	6.2
7.92 : 1	3.65
7.92 : 1	3.65

**Note.**—All road speeds are based on maximum engine speed (1700 r.p.m.) and 9.00 × 20 tyres.



## ATKINSON 8-WHEELED CHASSIS

S 1786	} 24 TON	} GROSS VEHICLE WEIGHT
M1786		
M1786T		
L 1786		
L 1786T		

This range of particularly robust chassis embodies the following noteworthy features:—

**ENGINE.** The basic engine is the Gardner LW compression ignition direct injection diesel unit, having 4½" bore and 6" stroke. Brief data concerning this engine is given below, together with details of alternative engines which can be fitted as extras.

The crankshaft is carried in a deep section rigid crankcase, the dry lined cylinders being arranged in two blocks, with detachable heads and overhead valve location; pistons are fitted with chromium plated gas rings, all features ensuring long life with ease of maintenance. Forced lubrication to all crankshaft bearings is provided by submerged gear pump housed in the large capacity sump, with strainers on both suction and delivery circuits. A large and efficient air cleaner is a standard feature on all models. Ample cooling is provided by the large diameter fan and centrifugal water pump, the system being thermostatically controlled. The particular feature of this unit is fuel economy, ensured by the specially designed fuel pump controlling by centrifugal governor the amount of fuel injected. Ready starting from cold by electric starter and positively driven dynamo are other features. The engine as a unit with clutch and gearbox is three point mounted with rubber insulation at each location.

Engine Type	Bore ins.	Stroke ins.	B.H.P. at R.P.M.	Torque at R.P.M.
Gardner 6LW	4½	6	112 at 1700	358 at 1300
Gardner 6LX	4½	6	150 at 1700	485 at 1100
AEC 9.6	4.72	5.59	125 at 1800	430 at 1000
AEC 11.3	5.12	5.59	150 at 1800	505 at 1100

**CLUTCH.** Is a 16" single dry plate unit, provided with a clutch stop and ample two stage adjustment to cater for full liner wear, clutch slip torque is 510 lbs.ft., more than equal to all calls from the driver, and yet smooth in operation under all conditions.

**GEARBOX.** Mounted as a unit with the engine, all gears are in high quality heat treated alloy steel mounted on large diameter rigid shafts, carried on bearings of ample capacity. Control is by one change speed lever. The various types of gearboxes available, together with the road speeds in each gear are shown in the adjacent chart.

**TRANSMISSION.** Power is transmitted to the driving axle by a single piece tubular propeller shaft on the S1786 and M1786, and two piece on the L1786 model. Needle roller bearing wide angle universal joints are incorporated together with a sliding coupling to allow full axle articulation. All shafts are dynamically balanced to eliminate vibration.

**REAR AXLE.** Drive to the road wheels on the S1786, M1786 and L1786 is provided by twin overhead drive worm axles having 7¼" worm centres with a 6½ : 1 ratio; a wide range of alternative ratios, between 5.2 : 1 and 8.25 : 1, is available. Coupling between the axles is by a needle roller bearing wide angle universally jointed shaft. The foremost axle incorporates a third differential or torque divider, ensuring that each axle accepts an equal proportion of the driving torque, and eliminating tyre scrub. Axles are fully floating, the drop forged hubs being mounted on ample capacity taper roller bearings in turn mounted on a solid one piece forged axle casing.

Models M1786T and L1786T have a single overhead worm drive foremost axle with 8½" worm centres and 6½ : 1 standard ratio. This axle is similar in construction to the above axles. The rearmost axle is the dead bar type with hubs and brake gear interchangeable with those of the driving axle.

Alternatively a spiral bevel/double helical differential interchangeable with the 8½" worm unit can be supplied as an extra for heavy duty. This unit is standard with the 6LX engine.

**FRONT AXLE.** The twin front axles are independently sprung, each having a one piece I section high tensile steel beam of ample proportions with forged steel hubs mounted on taper roller bearings. The king pins are also mounted on taper roller bearings providing easy steering. The ball jointed adjustable track rods are mounted at the rear of each axle.

### SUSPENSION.

- Front.**—Comprises long silico-manganese springs shackled at the rear to provide comfortable riding.
- Rear.**—Is by four semi-elliptic silico-manganese springs, fixed at their outer ends and coupled at their adjacent ends by a balance beam with ball type shackle pins. These ball pins take up the twist of the springs relative to the chassis. The balance beam mounted on taper roller bearings, equalises the load between the two axles and allows for varying road surfaces. All shackle pins are of ample diameter case hardened alloy steel.

**BRAKING SYSTEM.** The foot brake acts on the foremost front axle wheels and all rear wheels. The operation is hydraulic with assistance by hydrovac. Drums on all wheels are 17" diameter, the front shoes being 3½" wide and the rear 6" wide, all being internal expanding. The ratchet type hand brake, located to the right hand, acts on the rear wheels only and is mechanically operated throughout.

**ROAD WHEELS AND TYRES.** Pressed steel disc wheels are mounted on the hubs by ten ½" diameter wheel studs, tyres being 9.00 × 20 Michelin X type, single front and twin rear.

**STEERING.** Is the Marles cam and roller type, totally enclosed and working in oil. All contacting surfaces are of hardened alloy steel, wear being minimised and development of backlash practically eliminated. Right or left hand steering can be provided as required.

Both front axles are interconnected by a twin drag link arrangement, the the geometry being so arranged to provide the accurate lock angles required in this form of construction, eliminating uneven tyre wear.

**FRAME.** Frame side members are high tensile steel pressings 11" × 3" × ¼" braced by substantial pressed steel crossmembers with high tensile fitted bolts.

**RADIATOR.** Is the detachable "Withnell" tube type with separate top and bottom tanks of ample water capacity. Temperature control is by thermostat allowing quick warm up under cold conditions.

**FUEL TANK.** Is mounted on the nearside of the chassis frame, and fuel feed is by Amal pump mounted on and driven by the engine. Standard fuel tank capacity is 30 gallons on the S and M1786, and 54 gallons on the L1786 models.

**ELECTRICAL EQUIPMENT.** Is 12 volt on the LW range (with 24 volt alternative) and 24 volt on larger engines. The system in each case is the double pole type. Twin head, side and stop/tail lamps are provided, headlamps being the double dipping type controlled by separate dipper switch. Electric starting is standard.

**CHASSIS EQUIPMENT.** Includes speedometer, electric horn, hydraulic jack, loose starting handle, rear number plates, grease gun, complete set of tools and wheel stud covers. Lubrication chart, wiring diagram, service manual, and spare parts lists are provided with each chassis.

### EXTRAS.

Cabs:—	ZF 6 speed direct top or overspeed gearbox.
Standard coachbuilt cab.	Front towing member.
Heavy duty coachbuilt fibreglass de-luxe cab.	Front bumper bar (chromium)
All steel cab.	Coil or leaf spring rear towing jaw.
Engines:—	Power and/or hand trailer brake
Gardner 6LX	Air pressure, or air/hydraulic brakes.
AEC 9.6 or 11.3 litre	Power take off (gearbox driven)
Cab heater and demister.	Gearbox top drive (full torque)
Auxiliary step-up or step-down gearbox.	Power take off controls.

Details to conform to petroleum regulations.

### EXPORT FEATURES.

**Engine.**—The following alternative engines can be fitted as extras.  
 Gardner 6LX (150 h.p.) Gardner 8LW (150 h.p.)  
 Cummins HU6 (158 h.p.) Cummins NH6 (212 h.p.)  
 Rolls Royce C6N (178 h.p.)

**Gearbox.**—The following alternative gearboxes are available as extras for use with the above engines.

ZF AK 6-75 (6 speed) Fuller Roadranger (10 speed)  
**Rear Axle.**—For arduous duty 8½" centres worm axles without the third differential are fitted. Positive drive in sandy conditions thus being assured. For mixed duty a lockable third differential can be supplied as an extra, with if required, a fully articulated bogie.  
**Road Wheels and Tyres.**—For arduous duty 11.00 × 20 tyres single front and twin rear are fitted.

**Steering.**—Right or left hand steering and controls can be provided.  
**Radiator.**—Tropical type can be supplied with integral oil cooler for extreme temperature conditions.



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