

81 Wheeled tractor manufacturing

This Report on the Wheeled Tractor Manufacturing Industry relates to establishments engaged wholly or mainly in manufacturing and assembling three and four wheeled and half-tracked tractors; manufacturing parts and accessories (other than rough or semi-finished castings and forgings) when made wholly or primarily of metal and not reported elsewhere. Industrial tractors, crawler tractors, road tractors solely for tractor-trailer combinations and electrical accessories and other electrical equipment are excluded.

This industry corresponds to minimum list heading 380 in the Standard Industrial Classification (Revised 1968) which has been used for the first time as a basis of classification in the 1968 Census.

The Industry formed part of the Motor Vehicle Manufacturing Industry (Part 62) in the last detailed Census of Production for 1963 except for gears and gear wheels which were included in the report for the General Mechanical Engineering Industry (Part 52).

Throughout this Report, the figures given for 1963 have been reclassified, as far as possible, according to the Standard Industrial Classification (Revised 1968) so that data for 1963 and 1968 are on the same industrial basis. However the reclassification of small firms, which provided limited information only, has been arbitrary.

In interpreting the data in the tables it is essential to bear in mind the notes and definitions which appear on pages (i) to (iv).

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(c) Including services rendered to other organisations (amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services rendered).

(d) Administrative, technical and clerical employees.

(e) Excluding expenditure for establishments not yet in production.

(f) Acquisitions less disposals.

TABLE 1 Industry summary, 1963 and 1968
United Kingdom (a) (b)

	Unit	All establishments		
		1963	1968	
Number of enterprises	No.	44	62	
Number of establishments	"	51	70	
Gross output	£'000	136,741	184,701	
Net output	"	47,887	72,009	
Net output per head	£	1,897	2,720	
Sales and work done	goods produced and work done (c)	£'000	131,936	174,780
	merchanted goods and canteen takings	"	5,687	10,201
Purchases	materials for use in production and packaging and fuel	"	82,232	101,605
	goods for merchandising and canteen purchases	"	3,771	5,190
Payments to other organisations	for work done on materials given out for transport	"	2,357	2,695
	by road	"	519	2,027
	by rail and other means excluding postal services	"			98
Stocks and work in progress				
Total stocks and work in progress	change during year	"	- 858	- 1,357
	at end of year	"	22,954	28,276
Goods on hand for sale	change during year	"	- 380	- 1,774
	at end of year	"	9,860	10,275
Work in progress	change during year	"	- 502	+ 1,493
	at end of year	"	6,693	11,859
Materials, stores and fuel	change during year	"	+ 24	- 1,077
	at end of year	"	6,400	6,142
Number employed on average during the year	total, including working proprietors	Th.	25.2	26.5
	operatives	"	18.2	19.0
	other employees (d)	"	6.9	7.4
Wages and salaries	of operatives	£'000	15,746	23,557
	of other employees (d)	"	6,367	10,116
Capital expenditure (e)				
Total	"		3,865	3,194
New building work	"		742	548
Land and existing buildings (f)	"		23	9
Plant and machinery (f)	"		2,941	2,468
Vehicles (f)	"		159	187

(a) For 1968, estimates for establishments not making satisfactory returns and for small establishments, from which only employment data were collected, accounted for just over 1 per cent. of the total figures in which they were incorporated: unsatisfactory returns were negligible. A similar situation existed in 1963.

(b) The following information relates to small establishments (employing fewer than 25 persons) in this industry. It includes an estimate for small establishments not making satisfactory returns.

	1963	1968
Number of establishments	23	42
Average number employed		
Working proprietors	51	40
Other persons employed	201	352

Footnotes continued on page 81/2.

TABLE 2 Analysis by size of establishment within the industry, 1968

(i) Output and employment

All establishments: United Kingdom

Number employed on average during the year by the establishment (a)	Estab-lish-ments	Enter-prises (b)	Total number employed on average during the year (a)	Gross output	Net output	Net output per head
1-5	13	13	40	..	..	..
6-10	11	11	95	..	..	..
11-24	13	13	226	..	..	..
25-49	4	4	135	557	235	1,743
50-99	7	7	524	1,626	919	1,754
100-199	4	4	562	2,774	1,183	2,106
200-399	4	4	1,109	8,920	2,716	2,449
500 and over	9	5	23,753	168,090	65,889	2,774
Unsatisfactory returns	5	5	31	..	..	..
Total	70	62	26,475	184,701(c)	72,009(c)	2,720(c)

(ii) Employees, wages and salaries

All establishments: United Kingdom

Number employed on average during the year by the establishment (a)	Employees		Wages and salaries		Wages and salaries per head	
	Oper-atives	Others (d)	Oper-atives	Others (d)	Oper-atives	Others (d)
	Number	Number	£'000	£'000	£	£
1-5	..	..	..	..	..	..
6-10	..	..	..	..	..	..
11-24	..	..	..	..	..	..
25-49	109	25	81	29	747	1,166
50-99	392	129	374	149	954	1,156
100-199	424	138	445	181	1,050	1,309
200-399	770	339	832	489	1,081	1,442
500 and over	17,098	6,655	21,510	9,134	1,258	1,373
Unsatisfactory returns	..	..	..	..	..	..
Total	19,047(c)	7,384(c)	23,557(c)	10,116(c)	1,237(c)	1,370(c)

(a) Including working proprietors.

(b) The sum of the figures for the size groups exceeds the total for the industry to the extent that enterprises made returns for establishments in more than one size group.

(c) Including estimates for establishments employing fewer than 25 persons and for establishments not making satisfactory returns.

(d) Administrative, technical and clerical employees.

TABLE 3 Percentage analysis of employees, by age and sex, 1969 (a)

All establishments: United Kingdom

Ages	Males	Females	All employees
	Per cent.	Per cent.	Per cent.
Under 18	1	-	1
18 and over	91	8	99
All ages	92	8	100

Source: Department of Employment

(a) The percentages relate to the numbers employed (excluding working proprietors) at June 1969, the earliest date for which the information is available on the basis of the Standard Industrial Classification, (Revised 1968).

Footnotes to Table 4.

(a) Including services rendered to other organisations (amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services rendered).

(b) This is the ratio of total sales of principal products by the industry to total sales of goods produced and work done.

(c) For 1968 no progress payments for work in progress were recorded as being received from United Kingdom customers and owing to the risk of disclosure of information relating to individual firms, particulars of progress payments from overseas customers cannot be given. Similar information is not available for 1963.

(d) Administrative, technical and clerical employees.

(e) Excluding expenditure for establishments not yet in production.

TABLE 4 Analysis of larger establishments, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom (a)

	Unit	1963	1968
Number of enterprises	No.	20	20
Number of establishments	"	27	28
Gross output	£'000	135,056	181,966
Net output	"	47,297	70,943
Net output per head	£	1,897	2,720
Sales and work done	{ goods produced and work done (a)	£'000	130,310
	{ merchanted goods and canteen takings	"	5,617
Index of specialisation (b)	Per cent.	78	71
Purchases	{ materials for processing and packaging, and fuel	£'000	81,218
	{ goods for merchenting and canteen purchases	"	3,724
Payments to other organisations	{ for work done on materials given out for transport	"	2,328
	{ by road	"	1,997
	{ by rail and other means excluding postal services	"	513
Stocks and work in progress			97
Goods on hand for sale	{ change during year	"	- 375
	{ at end of year	"	9,739
Work in progress (c)	{ change during year	"	- 496
	{ at end of year	"	6,611
Materials, stores and fuel	{ change during year	"	+ 24
	{ at end of year	"	6,322
Number employed on average during the year	{ total, including working proprietors	No.	24,930
	{ operatives	"	18,057
	{ other employees (d)	"	6,857
Wages and salaries	{ of operatives	£'000	15,581
	{ of other employees (d)	"	6,304
Wages and salaries per head	{ operatives	£	863
	{ other employees (d)	"	919
Capital expenditure (e)			
New building work	£'000	733	540
Land and existing buildings	{ acquisitions	"	121
	{ disposals	"	98
Plant and machinery	{ acquisitions	"	2,974
	{ disposals	"	69
Vehicles	{ acquisitions	"	210
	{ disposals	"	53

For notes to this table - see page 81/5.

TABLE 5 Sales of principal products of the industry by larger establishments, including sales by establishments classified to other industries, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom

	1963		1968			
	Quantity	Value	Quantity	Value	Enterprises	Entries
	Number	£'000	Number	£'000	Number	Number
Tractors (including three wheel tractors but excluding industrial and crawler tractors and motive units for articulated vehicles)						
Wheeled and half-track, complete	241,933	133,697	145,381	119,238	14	16
Skidded units (assembly including tractor engine and transmission, with or without axle, gear box, steering column)	..	(a)	17,070	7,355	*	5
Parts and accessories of wheeled and half-track tractors						
Internal combustion engines, complete						
New						
Compression ignition	143,995	15,561	122,770	19,387	*	*
Other	2,050	340	..	639	*	*
Reconditioned	..	1,563	..	2,923	11	13
Parts of engines, new and reconditioned	..	1,563	..	1,797	8	11
Radiators complete, and radiator blocks	..	..	..	3,435	10	12
Steering gear and parts new and reconditioned	..	..	..	7,303	9	10
Axles and half shafts, new and reconditioned, and parts (including differential gear)	..	..	..	3,394	6	6
Wheels and parts thereof, not included elsewhere (excluding tyres, sold separately)	..	..	..	384	5	7
Brakes and parts thereof (other than linings containing asbestos and brake cables sold separately)	..	17,263	..	4,181	9	10
Clutches and parts thereof (other than linings containing asbestos)	..	..	..	1,498	13	13
Gear boxes, new and reconditioned, and parts thereof other than gears and gear wheels (a)	..	..	..	1,478	7	7
Gears and gear wheels (b)	..	..	..	466	*	*
Fuel pumps (not electric) and parts thereof	..	..	..	16,972	43	48
Parts and accessories new and reconditioned, not elsewhere specified	..	..	..	1,681	16	18
Unclassified parts and accessories (excluding engines)	..	1,623	..	83	*	*
Other products	..	19	..	..	..	..

Continued on next page

TABLE 5 (continued)

	1963		1968			
	Quantity	Value	Quantity	Value	Enter-prises	Entries
	Th. tons	£'000	Th. tons	£'000	Number	Number
Waste products						
Scrap metal						
Iron and steel	38	233	43	431	12	15
Other scrap metal		149				
Other waste products	..	11	..	39	6	8
Work done	..	12	..	9	*	5
Total	..	12	..	94	*	*
Total	..	170,484	..	192,785	..	..
Sales in other industries (see Table 6)		68,901		69,761	..	..
Principal products of this industry sold by establishments in the industry		101,582		123,025	20	23(c)

(a) Not recorded separately for 1963.

(b) Gears and gear wheels for motor vehicles and tractors were not separately distinguished for 1963 and are included in the report on the Motor Vehicle Manufacturing Industry (Part 82) for 1968.

(c) This figure represents the total number of returns made for larger establishments in this industry which is less than the total number of establishments shown in Table 4 on account of combined returns covering more than one establishment.

TABLE 6 Sales of principal products of the industry by larger establishments classified to other industries, 1963 and 1968

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

	1963		1968	
	Value	Value	Entries	Principal industries in which produced (a)
	£'000	£'000	Number	
Gear boxes, new and reconditioned and parts thereof other than gears and gear wheels	(b)	1,127	*	66,82
Gears and gear wheels		1,478	7	66,82
Tractors (including three wheel tractors but excluding industrial and crawler tractors and motive units for articulated vehicles) and parts thereof not elsewhere specified	67,927	65,475	80	50,55,56,82
Unclassified parts and accessories	974	1,681	18	55,63,66,82
Total	68,901	69,761	..	

(a) The references given are to the list of industries at the front of this report.

(b) Not recorded separately for 1963.

TABLE 7 Sales of other than principal products by larger establishments in the industry, 1963 and 1968

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

	Value	
	1963	1968
	£'000	£'000
Agricultural machinery, crawler tractors and loading shovels, industrial trucks and tractors complete and parts thereof	11,190	26,220
Other non-electrical machinery	248	3,689
Commercial vehicles complete and parts thereof and parts and accessories of cars and trailers	16,649	18,790
Other products	448	353
Repair work	114	8
Total value of goods sold without having been subjected to any manufacturing process (merchanted or factored), research and development work, services rendered to other organisations (a)	5,401	9,734
Canteen takings	296	422
Total	34,345	59,218

(a) Services rendered to other organisations comprises amounts charged for hiring out plant, machinery or other goods, for providing transport, or for technical or other services rendered to other organisations.

TABLE 8 Production of certain principal products of the industry by larger establishments, 1963 and 1968

This table is not applicable to this industry.

TABLE 9 Purchases by larger establishments of selected principal products by the industry, 1968

This table is not applicable to this industry.

TABLE 10 Purchases by larger establishments in the industry, 1963 and 1968

Establishments employing 25 or more persons: Analysis of returns received, United Kingdom

	1963		1968	
	Quantity	Cost	Quantity	Cost
	Th. tons	£'000	Th. tons	£'000
Materials for use in production				
Pig iron (including refined pig iron and other irons for re-smelting) and iron castings	12.1	292	..	16,264
Steel		12,136		
Bars and rods (including wire rods), angles, shapes and sections, girders, beams, joists and pillars rolled (not fabricated), including tube rounds and squares	28.8	2,128	30.2	2,518
Plates, 3 mm. thick and over	7.3	339	7.7	447
Sheets under 3 mm. thick (including electrical sheets)	6.4	345	..	659
Hoop and strip (including tape of all thicknesses), tinplate and blackplate	0.3	17(a)	..	659
Forgings (except drop forgings)	8.8	1,266	7.7	700
Castings	..	435	2.0	330
Drop forgings	40.1	5,879	40.7	7,906
Iron and steel not elsewhere specified except finished parts, wire and scrap, including wrought tubes and fittings for wrought tubes	..	38	..	299
Light metals and non-ferrous metals in all forms except finished parts, wire and scrap				
Aluminium and aluminium alloys	1.7	629	..	1,327
Brass and other copper alloys (including nickel silver and cupro-nickel, but excluding all other nickel alloys and cadmium copper) (b)	..	139	..	352
Copper (including cadmium copper) (c)				
Wire and wire manufactures (excluding insulated wires and cables) of steel, (including single wire and stranded wire of two or more ply) and of other metals	..	15	..	27
Bolts, rivets, nuts and washers, screws, nails, tacks, etc	..	1,589	..	2,303
General chemicals (d)	..	103	..	141
Paint and varnish (including lacquers and stains)	Th.gal. 232	263	Th.gal. 387	432
Glass, safety (toughened and laminated), other plate and sheet, glass fibre	..	144	..	432
Rubber tyres and other rubber products (excluding replacement parts for incorporation in firms' own road goods vehicles) (e)	..	21	..	63
New covers for vehicles (f)	..	3,198	..	3,946
Inner tubes for vehicles (f)	..	380	..	371
Other rubber products	..	370	..	612
Components and accessories of vehicles and tractors for incorporation in finished products (excluding replacement parts for incorporation in firms' own road goods vehicles) (e)				
Skidded units (assembly including tractor engine and transmission, with or without axle, gear box, steering column)	..	(g)	Number 10,359	3,983
Parts of bodies in sheet metal (including cabs, panels, bonnets, wings, etc) not elsewhere specified	..	1,491	..	1,856
Petrol tanks	..	388	..	286

TABLE 10 (continued)

	1963		1968	
	Quantity	Cost	Quantity	Cost
	Number	£'000	Number	£'000
Materials for use in production (continued)				
Components and accessories of vehicles and tractors for incorporation in finished products (excluding replacement parts for incorporation in firms' own road goods vehicles) (continued) (e)				
Complete engines (excluding engines forming part of chassis and engines for powered industrial trucks) (h)	70,361	7,963	..	8,609
Parts of engines (other than electrical) not elsewhere specified	..	13,770	..	13,201
Ball and roller bearings and parts thereof	..	2,323	..	2,218
Gear boxes	..	161	..	756
Radiators complete and radiator blocks	..	1,027	..	938
Steering gear and parts	..	1,241	..	921
Axles	..	231	..	1,262
Springs	..	179	..	353
Wheels and parts thereof (excluding tyres) not included elsewhere	..	1,744	..	2,067
Brakes and parts thereof	..	894	..	930
Clutches and parts thereof	..	1,586	..	1,407
Shock absorbers and dampers except of rubber	..	94	..	320
Measuring instruments and indicators (not electrically operated) and parts	..	134	..	284
Plastic goods moulded and fabricated	..	61	..	142
Electrical equipment and electrically operated instruments and equipment				
Electric motors, separately purchased	..	82	..	175
Dynamos and magnetos, separately purchased	..	464	..	516
Lighting, starting and ignition sets (including lamps therefor)	..	2,200	..	2,554
Batteries and accumulators	..	383	..	452
Other electrical equipment such as sparking plugs, electric horns, direction indicators, windscreen wipers, etc, and electrically operated measuring instruments and parts	..	441	..	336
Seats and seating (including cushioning and legs, supports, sliding mechanisms, etc)	..	458	..	566
Other components and accessories for vehicles and tractors	..	7,972	..	9,828
	Th.gal.		Th.gal.	
Lubricating oils and greases (including cutting oils and emulsions)	2,064	526	1,810	461
	..	6	Th.cwt. 0.8	5

Continued on next page

TABLE 10 (continued)

	1963		1968	
	Quantity	Cost	Quantity	Cost
Materials for use in production (continued)		£'000		£'000
Replacement parts for firms' own machinery, plant and vehicles, and accessories and consumable tools bought as replacement (i)				
Tyres and other spare parts for firms' own road goods vehicles	}	1,907	..	86
Other			..	1,972
All other materials for use in production	..	1,465	..	1,936
Packaging materials				
Paper and board				
Boxes, cartons, packing cases, and drums and canisters (with or without metal ends) of paper, cardboard and fibreboard	..	48	..	113
Bags and multiwall paper sacks	-	-	..	2
Wrapping and packing paper (including paper coated with plastics and any laminates incorporating paper but not metal) (j)	..	50	..	32
Timber				
Containers wholly or mainly of wood (including plywood boxes and drums), baskets and wickerwork crates	..	560	..	658
Timber (sawn or planed) plywood for manufacture into packing cases etc, other wood products for packaging (including wood wool)	..	11	..	34
Plastics (other than transparent regenerated cellulose film) including film (up to 0.01 inches thick) bags and sacks up to 500 gauge sheets and sheeting (thicker than 0.01 inches) (k)	..	6	..	9
All other packaging materials	..	28	..	20
Fuel and electricity (l)				
Coal	Th. tons		Th. tons	
Coke (including screenings) and manufactured fuel	31.2	156	29.4	170
Derv fuel and motor spirit for use in road vehicles	5.7	66	-	-
Other liquid fuels (including creosote/pitch mixtures, etc, and liquefied petroleum gases)	Th. gal.		Th. gal.	
Derv fuel and motor spirit for use in road vehicles	556	86	640	143
Other liquid fuels (including creosote/pitch mixtures, etc, and liquefied petroleum gases)	..	6		
Gas	3,295	209	5,750	306
Electricity	..	14		
All other fuels	Th. therms		Th. therms	
Gas	5,946	374	5,891	397
Electricity	Th. kWh		Th. kWh	
All other fuels	129,819	682	177,212	1,056
Total cost of materials and fuel	..	(g)	..	44
Goods purchased for merchanting		81,219		100,101
Canteen purchases		3,453		4,731
Total cost of purchases		271		383
Total cost of purchases		84,943		105,214

For notes to this table - see page 81/13.

TABLE 11 Transport costs and employment of larger establishments, 1963 and 1968

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

	Unit	1963	1968
Average number mainly employed on transport	No.	295	364
Transport costs			
Wages and salaries	£'000	226	383
Derv fuel and motor spirit	"	92	143
Tyres and other spare parts for road goods vehicles	"	..	86
Payments to other organisations for transport	"	513	1,997
by road	"		
by rail and other means excluding postal services	"		97
Costs of operating road goods vehicles			
Insurance	"	13	16
Vehicle licences	"	16	37
Depreciation	"	85	142
Payments to other organisations for repairs and maintenance	"	21	20
Total	"	966(a)	2,920

(a) Excluding tyres and other spare parts for road goods vehicles, not collected separately for 1963.

Footnotes to Table 10.

- Excluding tinplate and blackplate for 1963.
- For 1963 Cadmium copper was not specifically excluded.
- For 1963 Cadmium copper was not specifically included but blister was excluded.
- For 1963 described as 'Heavy chemicals'.
- For 1963 replacement parts for incorporation in firms' own road goods vehicles were not specifically excluded.
- For 1963 new covers and inner tubes for motor cycles, scooters and pedal cycles were specifically excluded.
- Not recorded separately for 1963.
- For 1963 described as 'Complete engines (excluding engines forming part of chassis) for cars and commercial vehicles'.
- For 1963 replacement parts including tyres and tubes may be included at other headings in this table.
- For 1963 Moulded pulp units, labels and other packaging materials of paper, cardboard and fibreboard (except multiwall sacks) were specifically included.
- For 1963 described as 'Sheet film, foams etc wholly or mainly of polyethylene (including bags and lay flat tubing)'.
- There were no entries recorded for electricity generated in firms' own establishments in this industry in 1963 and 1968.

TABLE 12 Payments for certain services, etc by larger establishments, 1963 and 1968 (a)

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

	Amounts payable	
	1963	1968
Repairs and maintenance to	£'000	£'000
Buildings	161	208
Road goods vehicles	21	20
Plant, machinery and other capital equipment	277	435
Insurance, licensing and depreciation of road goods vehicles (b)	114	195
Rates, excluding water rates	269	589
Hire of plant and machinery	127	220
Postage, telephone, telegrams, cables and telex (c)	323	502
Total	1,291	2,169

(a) No deduction is made for these payments to arrive at the figures of net output given in this report.

(b) For details see Table 11.

(c) Excluding telex for 1963.

TABLE 13 Percentage analysis of twelve-month periods covered by returns from larger establishments, 1968

Establishments employing 25 or more persons:
Analysis of returns received, United Kingdom

Year ended	Percentage of total returns received	Percentage of total number employed
1968	Per cent.	Per cent.
April (a)	0.0	0.0
May	0.0	0.0
June	13.0	0.9
July	8.7	0.8
August	4.3	2.1
September	4.3	0.7
October	21.8	75.2
November	4.3	2.0
December	21.8	17.3
1969		
January	0.0	0.0
February	0.0	0.0
March	21.8	1.0
April (b)	0.0	0.0
	100	100

(a) From 6 April.

(b) To 5 April.