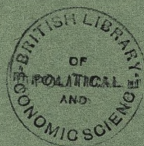


S 42 [HA 251]



BOARD OF TRADE

FINAL REPORT
on the
CENSUS OF PRODUCTION
FOR 1948
Volume 4
Trade C
MACHINE TOOLS



*Presented by the Board of Trade to Parliament
in pursuance of the Statistics of Trade Act, 1947
(10 & 11 Geo. 6, Ch. 39, Sec. 7).*

LONDON : HER MAJESTY'S STATIONERY OFFICE

1952

Price 3s 6d net

4-11-52
S [HA 133]

In interpreting the data in the following tables, it is essential to bear in mind not only the qualifications mentioned in this report but also the general explanations and qualifications contained in the separate booklet published in this series by H.M. Stationery Office entitled "Final Reports of the Census of Production for 1948: Introductory Notes", price 2s.0d.

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* Not applicable to this trade

MACHINE TOOLS TRADE

THIS REPORT on the Machine Tools Trade relates to establishments engaged wholly or mainly in the manufacture of metal-working machine tools, engineers' small tools for use with machine tools, and welding machinery of all descriptions.

This trade corresponds to minimum list heading 54 in the Standard Industrial Classification.

Any establishments in Northern Ireland are excluded in 1948; no production was recorded there in this trade for 1946, 1937 or 1935.

MACHINE TOOLS TRADE

Summary

Larger establishments

TABLE 1

	1948	1946	1937	1935
	£'000	£'000	£'000	£'000
Gross output (production)	69,819	49,146	16,355	10,303
Cost of materials and fuel used	25,931	18,159	5,680	3,376
Payment for work done on materials given out	1,164	863	165	54
Net output	42,724	30,124	10,510	6,873
Wages and salaries of persons employed	25,877	20,350	..	..
	No.	No.	No.	No.
Average number of persons employed (a)	76,531(b)	70,051	33,658	26,168
	£	£	£	£
Net output per person employed (a)	558	430	312	263
Stocks at end of year	£'000	£'000	£'000	£'000
Finished products and work in progress	14,359	9,714	3,299(c)	2,305(c)
Materials and fuel	6,836	4,341	..	..
	No.	No.	No.	No.
Number of establishments	616	..	..	195

(a) Excluding outworkers.

(b) For an estimate of the total number of persons employed in this trade see Table 3.

(c) Work in progress only.

The values of gross output and of materials and fuel used are derived in the following way:-

	1948	1946	1937	1935
	£'000	£'000	£'000	£'000
Output of firms in this trade				
Total value of sales (1948 and 1946) or production (1937 and 1935)				
Principal products (see Table 8)	60,483	48,085	14,900	8,950
Other output (see Table 10)	7,844		923	710
Adjustment for changes in stocks and work in progress	+ 1,858(a)	+ 1,061	+ 532(b)	+ 643(b)
	70,185	49,146	16,355	10,303
Less payment for transport by other firms	366			
Gross output (production)	69,819	49,146	16,355	10,303
Materials and fuel used by firms in this trade				
Purchases (see Table 13)	26,732	18,697	5,680	3,376
Adjustment for changes in stocks	- 801(a)	- 538		
Materials and fuel used	25,931	18,159	5,680	3,376

(a) See Table 14.

(b) Work in progress only.

Summary, 1948

Small firms in Great Britain

TABLE 2

Number of returns	261
Average number of persons employed (a)	
Males	1,467
Females	254
Total	1,721

(a) Including working proprietors.

Estimated average employment, 1948

All firms in Great Britain

TABLE 3

As returned by firms	
Employing on average more than ten persons (a)	76,531
Employing on average ten persons or less (b)	1,721
	78,252
Estimated average employment in firms not making satisfactory returns	751
Estimated average employment in all firms	79,003

(a) See Tables 1 and 15.

(b) See Table 2.

Analysis by size, 1948

Larger establishments in Great Britain

TABLE 4

Average number employed	Establishments	Gross output	Net output	Persons employed	Remuneration			Net output per person employed
					Wages	Salaries	Total	
	No.	£'000	£'000	No.	£'000	£'000	£'000	£
11-24	162	2,213	1,488	2,946	738	221	960	505
25-49	153	4,653	3,062	5,361	1,409	445	1,854	571
50-99	119	7,780	4,574	8,167	2,118	654	2,772	560
100-199	97	14,199	8,403	14,153	3,716	1,165	4,882	594
200-299	28	5,995	3,852	6,799	1,689	618	2,307	567
300-399	18	5,320	3,347	6,157	1,554	508	2,062	544
400-499	7	2,462	1,624	3,140	806	203	1,010	517
500-749	15	8,888	5,045	8,796	2,278	905	3,183	574
750-999	8	5,083	3,253	6,933	1,776	521	2,296	469
1,000 and over	9	13,226	8,076	14,079	3,533	1,019	4,552	574
Total	616	69,819	42,724	76,531	19,617	6,260	25,877	558

Analysis by standard region, 1948

Larger establishments in Great Britain

TABLE 5

Region	Establishments	Gross output	Net output		Persons employed	Remuneration		
			Value	Percentage of total		Wages	Salaries	Total
	No.	£'000	£'000		No.	£'000	£'000	£'000
England								
Northern	7	1,080	696	1.6	1,319	305	93	398
East and West Ridings of Yorkshire	119	16,910	10,040	23.5	18,240	4,371	1,177	5,548
North Midland	27	4,002	2,517	5.9	4,373	1,054	388	1,442
Eastern	15	2,257	1,099	2.6	2,095	538	153	692
London and South Eastern	171	12,381	7,555	17.7	13,686	3,696	1,219	4,914
Southern	11	723	460	1.1	847	216	70	286
South Western	17	1,171	660	1.5	1,400	323	125	448
Midland	157	21,511	13,657	32.0	23,354	6,389	2,163	8,552
North Western	65	6,726	4,190	9.8	7,816	1,940	617	2,557
Total England	589	66,761	40,876	95.7	73,130	18,832	6,005	24,837
Wales	6	465	256	0.6	493	144	26	171
Scotland	21	2,593	1,592	3.7	2,908	642	229	870
Great Britain	616	69,819	42,724	100.0	76,531	19,617	6,260	25,877

TABLE 6 - Analysis according to specialisation within the trade, 1948

Larger establishments in Great Britain

No specialisation within this trade was distinguished.

TABLE 7 - Total make of intermediate products: Larger establishments

This table is not applicable to the trade.

Sales (or production) of the principal products of the trade, including sales (or production) of these products by establishments classified to other trades

Larger establishments

TABLE 8

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales				1937 Production		1935 Production	
	Quantity	Value	Entries	Quantity	Value	Quantity	Value	
	No.	Tons	£'000	No.	Tons	£'000	Tons	£'000
Machine tools, metal-working, new (other than portable power tools) (a)								
Boring								
Jig	(1) 68 (11) ..	152 ..	96 21	7 ..	..	'b)	..	(b)
Other types								
Vertical, including vertical fine boring machines and boring mills	(1) 1,094 (11) ..	3,302 ..	831 6 63	9 6	1,564 ..	199 4	1,024 ..	138 4
Other	(1) 956 (11) ..	3,054 3	958 2 93	16 13	4,065 ..	477 13	2,158 ..	289 9
Broaching	(1) 71 (11) ..	238 ..	89 6	7 ..	126 ..	25 1	53 -	8 -
Drilling								
Vertical (pillar and bench types)	(1) 22,502 (11) ..	3,555 ..	943 311 88	26 22	391 ..	40(c) 1		
Radial	(1) 1,797 (11) ..	5,646 ..	1,327 55	11 10	4,430 ..	484 17		
Multi-spindle, not included above	(1) 527 (11) ..	1,003 ..	472 8 11	12 8	848 ..	123(d) 3	(1) 5,979 (11) ..	645 35
Other	(1) 578 (11) ..	705 ..	256 9 40	19 15	3,284 ..	400 27		
Gear cutting	(1) 306 (11) ..	952 ..	474 21	14 10	846 ..	229 23	485 ..	69 8
Grinding, other than threading								
Centreless	(1) 176 (11) ..	624 ..	275 19	5 ..	409 ..	103 1		
Plain	(1) 1,714 (11) ..	2,177 ..	673 59	12 7	1,667 ..	283 1		
Surface	(1) 932 (11) ..	2,344 5	657 2 80	19 18	1,645 ..	227 4		
Tool and cutter	(1) 1,420 (11) 83	525 ..	201 17 8 21	26 16	328 ..	70 1		
Universal	(1) 216 (11) ..	612 ..	248 10 27	7 6				

TABLE 8 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales			1937 Production		1935 Production		
	Quantity	Value	Entries	Quantity	Value	Quantity	Value	
	No.	Tons	£'000	No.	Tons	£'000	Tons	£'000
Machine tools, metal-working, new (other than portable power tools) (a) (contd.)							(1) 5,285 (11) ..	866(e) 33
Grinding, other than threading (contd.)				(1) 2,389 (11) ..	424 27			
Other	(1) 4,859 (11) 437	2,031 ..	730 65	51				
	(1) .. (11) ..	285 ..	88 82	37				
Unclassified	(1) 204 (11) ..	17 ..	5 72	6 6	- -	- -		
Lathes								
Fully automatic (automatics)	(1) 1,144 (11) ..	2,609 ..	1,749 249	15 21	1,056 ..	279 30	5,863 ..	1,057(f) 142
Capstan and turret	(1) 2,928 (11) ..	4,623 ..	2,169 34	17 22	6,654 ..	1,549 178		
Centre	(1) 12,084 (11) ..	13,243 ..	4,101 7	56 49	8,803 ..	1,139(g) 28		
Multi-tool or production	(1) 308 (11) ..	695 ..	355 29	8 6	874 ..	228 5	(1) 8,026 (11) ..	809 38
Surface and boring	(1) 127 (11) 9	346 ..	126 17	10				
	(1) .. (11) ..	.. ..	2 8	9				
Tool-room	(1) 310 (11) ..	850 ..	325 10	5 ..	(1) 2,147 (11) ..	257 20		
Other	(1) 1,201 (11) ..	1,795 ..	483 7	31 24				
	(1) .. (11) ..	26 ..	61					
Milling, other than threading								
Vertical	(1) 210 (11) ..	546 ..	247 25	11 12	1,888 ..	464 18		
Plain horizontal	(1) 953 (11) ..	984 ..	379 21	14 13	2,041 ..	452 17		
Universal	(1) 985 (11) ..	1,889 ..	844 44	11 9	591 ..	141 6		
Manufacturing	(1) 215 (11) ..	865 ..	391 -	5 -			(1) 2,822 (11) ..	572(e) 27
Other	(1) 461 (11) 106	1,203 ..	393 33	26	(1) 1,415 (11) ..	231 1		
	(1) .. (11) ..	.. ..	8 22	16				
Unclassified	(11) ..	..	196	..				
Threading	(1) 308 (11) ..	406 ..	255 20	15 10	268 ..	122(h) 5	..	(b)
	(1) .. (11) ..	68 ..	49					

TABLE 8 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales			1937 Production		1935 Production		
	Quantity	Value	Entries	Quantity	Value	Quantity	Value	
	No.	Tons	£'000	No.	Tons	£'000	Tons	£'000
Machine tools, metal-working, new (other than portable power tools) (a) (contd.)								
Planing	(1) 106 (11) 17	2,434 ..	430 86	14	5,908	485	2,357	185
	(1) .. (11) ..	.. ..	6 49	11	..	4	..	2
Sawing	(1) 6,994 (11) ..	2,279 ..	494 21	31	1,444	152	844	87
	(1) .. (11) ..	.. ..	60 36	23	..	5	..	3
Shaping	(1) 2,016 (11) ..	2,403 ..	611 16	17 8	1,128	124	1,156	99
	(1) .. (11) ..	.. ..	16	8	..	2	..	2
Slotting	(1) 149 (11) ..	807 ..	173 7	7 9	799	109	552	58
	(1) .. (11) ..	.. ..	7	9	..	1	..	1
Presses, other than forging (1)								
Hydraulic								
Extrusion	(1) 31 (11) ..	1,034 ..	172 57	9 8	238	28	..	4
Other	(1) 1,404 (11) ..	3,755 ..	720 14	31			(1) 10,821 (11) ..	685 45
	(1) .. (11) ..	.. ..	88	24				
Manual	(1) 7,305 (11) 718	1,219 ..	142 21	20	(1) 11,614 (11) ..	808 73		
	(1) .. (11) ..	.. ..	10	13				
Other descriptions	(1) 2,818 (11) ..	9,587 ..	1,673 161	31				
	(1) .. (11) ..	.. ..	195	21				
Punching and shearing	(1) 6,208 (11) 885	2,246 ..	414 56	50	3,403	207(j)	2,263	118
	(1) .. (11) ..	.. ..	238 85	40	..	12	..	9
Tin box and can making	(1) 1,038 (11) ..	693 ..	394 65	12 13	393	50	185	26
	(1) .. (11) ..	.. ..	167	13	..	6	..	4
Forging machinery								
Presses								
Hydraulic	(1) 38 (11) 6	415 ..	81 10	6 8				
	(1) .. (11) ..	.. ..	82	8				
Other	(1) 164 (11) ..	1,575 ..	253 4	12 9	(1) 4,010 (11) ..	241 51		
	(1) .. (11) ..	.. ..	34	9				
Other forging machinery	(1) 396 (11) 76	3,181 ..	463 64	..				
	(1) .. (11) ..	.. ..	47 224	..				

TABLE 8 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales			1937 Production		1935 Production		
	Quantity	Value	Entries	Quantity	Value	Quantity	Value	
	No.	Tons	£'000	No.	Tons	£'000	Value	
Machine tools, metal-working, new (other than portable power tools) (a) (contd.)							(1) 5,181 (11) ..	477 74
Lapping and honing (1) and (11)	..	..	86	13				
Straightening rolls, and plate and sheet metal working machines, not else- where specified	(1) 7,272 (11) ..	3,620 578	570 97 44	39 24				
Screwing	(1) 1,475 (11) ..	681 14	264 5 38 125	13 8	(1) 4,725 (11) ..	687 86		
Other metal-working machine tools, new	(1) 4,420 (11) ..	3,353 305	808 102 243 289	105 70				
Unclassified metal- working machine tools, new	(1) 218 (11) ..	71 134	28 64 178 368	42 48		-	-	-
Reconditioned metal- working machine tools	(1) 2,389 (11) 315	6,666 ..	886 161 497 101	56 15	..	(b)	..	(b)
Welding and cutting machinery and equipment, other than tube making (k)								
Electric								
Arc welding								
Alternating current (transformer)								
Single and double operator	(1) 3,303 (11) 1,160	1,015 ..	253 71 4 44	19 11				
Other	(1) 897 (11) 130	206 ..	73 49 13	11 11				
Direct current								
Single operator	(1) 3,301 (11) ..	1,856 916	877 425 20	11 7				
Other	(1) 188 (11) 90	298 ..	173 25 16	7 5				
Other descriptions	(1) .. (11) ..	..	7 32	.. 5				

TABLE 8 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales			1937 Production		1935 Production		
	Quantity	Value	Entries	Quantity	Value	Quantity	Value	
	No.	Tons	£'000	No.	Tons	£'000	Value	
Welding and cutting machinery and equipment, other than tube making (k) (contd.)							(1) 1,460 (11) ..	276 22
Electric (contd.)								
Resistance welding								
Butt and flash butt	(1) 103 (11) ..	157 ..	121 24 46	10				
Spot and projection	(1) 550 (11) 453	301 ..	112 86 126 124 88	16 13				
Seam	(1) 25 (11) ..	31 ..	33 25 29	6 6				
Other	(1) .. (11) ..	50 ..	30 15 15	8 6				
Gas welding and cutting torches and equipment		Tons						
Other descriptions, includ- ing parts								
Electrodes (other than carbon) for arc welding		Mill. ft.						
Ferrous								
Non-ferrous								
Engineers' small tools and parts		Th. doz.						
Hard metal								
Hard metal tipped tools								
Hard metal tips and inserts, sold separately								
Hard metal dies								
Hard metal die pellets, sold separately								

TABLE 8 (contd.)

	1948 Sales			1937 Production		1935 Production	
	Quantity	Value	Entries	Quantity	Value	Quantity	Value
	Th. doz.	£'000	No.	Th. doz.	£'000	Th. doz.	£'000
Engineers' small tools and parts (contd.)							
Other than hard metal (l)							
Drills, cylindrical, helically grooved commonly known as twist drills, bit stock drills and machine bits for wood (but not including auger bits)							
High speed steel twist drills	1,185	1,782	26				
	..	1,347					
Carbon steel twist drills	376	166	10	773	449	668	257
	..	63		..	164	..	27
Other	29	86	16				
	..	250					
Press tools	3.4	661	281	..	512	..	229
	..	2,012					
	Th. doz.	Th. cwts.		Th. doz.	Th. cwts.	Th. doz.	Th. cwts.
Hacksaw frames	49	6.3	13	17	2.3	12	1.3
	21	..		..	19	..	..
					
Hacksaw blades							
Regular tungsten	2,467	14.6	16				
	3,596	..					
	259	2.4	13	4,130	29.4	3,415	25.2
	602	..			475	..	359
					
Other							
	Th. cwts.						
Lathe chucks	32.6	576	27				
	..	307					
Drill chucks	3.1	151	21	..	448	..	204(m)
	..	100			(m)		
Other tool and work holders	..	463(n)	14				
	Th. doz.						
Slitting saws	55	334	18				
	..	61					
Milling cutters	69	904	74				
	..	394					
Reamers, end mills and similar shank tools	80	714	73				
	..	406					
Lathe and planer tools							
Welded and brazed	84	352	11				
	..	50					
Other	83	233	37				
	..	31					
Broaches	2	328	21	..	3,067	..	1,635(o)
					(o)		

TABLE 8 (contd.)

	1948 Sales			1937 Production		1935 Production	
	Quantity	Value	Entries	Quantity	Value	Quantity	Value
	Th. doz.	£'000	No.		£'000		£'000
Engineers' small tools and parts (contd.)							
Other than hard metal (e) (contd.)							
Cut and ground thread screwing tackle	..	3,021	46				
Moulds and dies	..	2,055	190				
Gear cutters, not elsewhere specified (n)	2	144	5				
	..	182					
Other metal-cutting tools, except saws and saw blades	152	747	64				
	..	457					
	Th. cwts.						
Jigs and fixtures	14.6	808	347				
	..	3,121					
Unclassified engineers' small tools and parts	..	3,956	93	-	-	-	-
Waste products, other than scrap iron and steel	..	47	94	..	(b)	..	(b)
Repair and jobbing work (p)		662	112		162		131
Work done for the trade or on commission (p)		608	106		58		51
Total		75,116	..		18,000		10,480
Less sales (or production) in other trades (see Table 9)		14,632	..		3,100		1,530
Total principal products of this trade sold or made by establishments in the trade		60,483	570		14,900		8,950

- (a) Not described as new in 1937 and 1935.
 (b) Not recorded separately.
 (c) Bench types only.
 (d) Described as "Multiple".
 (e) Not described as excluding threading machines.
 (f) Including semi-automatic lathes.
 (g) Described as "Centre and engine".
 (h) Thread grinding and thread milling machines only.
 (i) The figures for 1937 include some presses other than metal-working, and those for 1935 include some forging presses.
 (j) May include machines other than metal-working.
 (k) Described as "Welding machinery, other than tube making" in 1937 and 1935.
 (l) The figures for 1937 and 1935 include hard metal tools.
 (m) Described as "Chucks and other work holders".
 (n) So far as recorded separately.
 (o) Described as "Engineers' tools, not elsewhere specified, only usable with machine tools".
 (p) Amount charged in 1948 and amount received in 1937 and 1935.

Sales (or production) of principal products of the trade by establishments classified to other trades

Larger establishments

TABLE 9

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales			1937 Production		1935 Production	
	Quantity		Value	Quantity	Value	Quantity	Value
	No.	Tons	£'000	No.	£'000	Tons	£'000
Machine tools, metal-working, new (other than portable power tools)							
Boring							
Jig	(1) 28	5	5	..			
		421	287	80	(1) 92	12	-
Other types	{ (1) ..	3	2	..	(11) ..	3	-
	{ (11) ..	..	14	..			
Broaching	(1) -	-	-	-	83	6	6
Drilling							
Vertical (pillar and bench types)	{ (1) 1,715	59	17	..	20	1	
	{ (11) ..	..	3	5	-	-	
	{ (11) ..	..	13	..	68	7	
Radial	{ (1) -	-	-	..	-	-	
	{ (11) ..	..	2	..			(1) 284
Multi-spindle, not included above	(1) 5	3	2	..	117	9	17
		291	73	33			2
Other	{ (1) ..	..	9	10	82	9	
	{ (11) ..	..	9	7	-	-	
Gear cutting	{ (1) 122	119	47	..	228	55	262
	{ (11) ..	..	2	..	..	1	-
Grinding, other than threading							
Plain	(1) 6	6	3	..	65	5	
	{ (1) 99	54	24	..	2	1	
Surface	{ (11)	1	5	-	-	
		359	88	35			
	{ (1) 18	..	13	10	25	12	
Tool and cutter	{ (1)	1	..			(1) 209
	{ (11)	5	6	-	-	30
							(11) ..

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TABLE 9 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales			1937 Production		1935 Production	
	Quantity		Value	Quantity	Value	Quantity	Value
	No.	Tons	£'000	No.	£'000	Tons	£'000
Machine tools, metal-working, new (other than portable power tools) (contd.)							
Grinding, other than threading (contd.)							
		661	72	35			
		410	..	35	..	77	10
Other, including universal	{ (1) ..	17	6	..			
	{ (11) ..	..	10	..			
	{ (11) ..	..	14	..			
Unclassified	{ (1) 204	17	5	6	-	-	
	{ (11) ..	257	72	6	-	-	
Lathes							
Fully automatic (automatics)	{ (1) 20	80	16	..	235	50	
	{ (11) ..	..	44	6	..	2	
Capstan and turret	{ (1) 116	95	35	6	269	58	
	{ (11) ..	..	38	11	..	8	
-Centre	{ (1) 626	1,129	373	14	317	26	
	{ (11) ..	14	7	12	..	5	(1) 756
Surface and boring	{ (1) 1	35	7	..			63
	{ (11) ..	..	2	..			(11) ..
		446	421	111	(1) 689	73	
Other, including multi-tool or production	{ (1) ..	14	4	..	(11) ..	16	
	{ (11) ..	..	21	..			
Milling, other than threading							
Plain horizontal	{ (1) 128	54	21	..	110	30	
	{ (11) ..	..	7	5	-	-	
Other, including vertical, universal and manufacturing	{ (1) 210	211	137	..	287	44	(1) 93
	{ (11) 51	..	9	..			9
	{ (11)	1	..			
	{ (11)	14	..			

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TABLE 9 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales			1937 Production		1935 Production	
	Quantity		Value	Quantity	Value	Quantity	Value
	No.	Tons	£'000	No.	£'000	Tons	£'000
Machine tools, metal-working, new (other than portable power tools) (contd.)							
Threading	(1) 193 ..	182 68	109 20	9	169	86	.. (a)
	(11) ..	..	3	..	..	1	
Sawing	(1) 2,412 ..	766 12	163 5	15	358	37	388 36
	(11) ..	..	25	12	..	2	.. 1
Shaping	(1) 153 ..	128 -	54 -	6	380	28	226 12
	(11) ..	..	19	..	..	1	.. 1
Slotting	(1) 2	5	1	..	36	5	- -
Presses, other than forging							
Hydraulic	(1) 146 ..	975 72	176 14	..			
	(11) ..	..	45				
Manual	(1) 971 109	67 ..	18 3	7	(1) 5,172	355	4,264 239
	(11) ..	..	1	6	(11) ..	39	.. 20
Other descriptions	(1) 925 ..	3,744 ..	575 1	16			
	(11) ..	..	40	14			
Punching and shearing	(1) 210 832	206 ..	51 13	21	863	55	306 14
	(11) ..	44 ..	8 29	19	..	5	.. 3
Forging machinery	(1) 241 71	1,065 ..	195 50	..	1,068	71	
	(11) ..	..	12				
Tin box and can making	(1) 61 ..	44 2	35 1	5			(1) 1,291 111
	(11) ..	..	9	6			(11) .. 23
Lapping and honing (1) and (11)	..	..	17	5			
Straightening rolls, and plate and sheet metal working machines, not elsewhere specified	(1) 5,034 ..	347 131	64 20	17			
	(11) ..	..	14	9			
Screwing	(1) 151 ..	38 ..	13 38	6	(1) 1,378	193	.. 39
	(11) ..	..	16	..	(11) ..	..

TABLE 9 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	1948 Sales			1937 Production		1935 Production	
	Quantity		Value	Quantity	Value	Quantity	Value
	No.	Tons	£'000	No.	£'000	Tons	£'000
Machine tools, metal-working, new (other than portable power tools) (contd.)							
Other metal-working machine tools, new, including planing machines	(1) 1,989 ..	1,829 232	357 62	..			
	(11) ..	..	73	..			
Unclassified metal- working machine tools, new	(1) 151 ..	44 114	14 40	25	-	-	- -
	(11) ..	..	94	23	-	-	- -
Reconditioned metal- working machine tools	(1) 110 72	205 ..	35 11	20	..	(a)	.. (a)
	(11) ..	..	346	9			
Welding and cutting machinery and equipment, other than tube making (b)							
Electric							
Arc welding							
Alternating current (transformer)	(1) 3,073 423	875 ..	222 87	..			
	(11) ..	..	4	..			
Direct current							
Single operator	(1) 1,788 ..	623 6	257 3	..			
	(11) ..	..	11	..			
Other descriptions (including direct current, other than single operator)	(1) 91 ..	50 ..	25 8	..	(1) 607	115	904 128
	(11) ..	..	18	..	(11) ..	5	.. 6
Resistance welding							
Spot and projection	(1) 121 285	66 ..	36 54	9			
	(11) ..	339	126	6			
Other (including butt and flash butt and seam)	(1) 35 ..	27 29	21 15	..			
	(11) ..	..	3	..			

TABLE 9 (contd.)

	1948 Sales			1937 Production		1935 Production	
	Quantity	Value	Entries	Quantity	Value	Quantity	Value
	Tons	£'000	No.	Tons	£'000	Tons	£'000
Welding and cutting machinery and equipment, other than tube making (b) (contd.)							
Other descriptions (including gas welding and cutting torches and equipment)	113	26	..	89	89	60	66
	..	43		..	74	..	52
Electrodes (other than carbon) for arc welding	Mill. ft.	Tons					
Ferrous	133.7	4,645	398	8			
	..	364	29		..	115	..
Non-ferrous	0.9	43	13	5			
	..	..	16				
Engineers' small tools and parts	Th.doz.						
Hard metal							
Hard metal tips and inserts, sold separately	17	40	6		..	(a)	..
	..	216					(a)
Hard metal tipped tools, dies and die pellets (sold separately)	..	382	..				
Other than hard metal							
Drills, cylindrical, helically grooved, commonly known as twist drills, bit stock drills and machine bits for wood (but not including auger bits)				Th.doz.		Th.doz.	
High speed steel twist drills	-	-	-				
Carbon steel twist drills	-	-	-	130	58	10	6
Other	21	70	9				
	..	234					
Press tools	1.7	119	118	..	203	..	45
	..	534					

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TABLE 9 (contd.)

	1948 Sales				1937 Production			1935 Production		
	Quantity		Value	Entries	Quantity		Value	Quantity		Value
	Th. doz.	Th. cwts.	£'000	No.	Th. doz.	Th. cwts.	£'000	Th. doz.	Th. cwts.	£'000
Engineers' small tools and parts (contd.)										
Other than hard metal (contd.)										
Hacksaw frames	2	0.3	5	7	16	2.0	17	11	1.1	11
	20	..	28							
	..	..	7							
Hacksaw blades	1,749	..	370	..	1,712	12.5	205	1,319	10.0	146
Lathe chucks	Th.cwts.									
	..	12	8							
Drill chucks	..	2	..	..	..	28	..	..	..	5
Other tool and work holders	-	-	-	-	-	-	-	-	-	-
Slitting saws	Th. doz.									
	2	8	8							
	..	1								
Milling cutters	8	24	14							
	..	21								
Reamers, end mills and similar shank tools	1	7	13							
	..	25								
Lathe and planer tools										
Welded and brazed	1	8	..							
Other	21	63	14	..	..	823	..	..	..	381
	..	2								
Cut and ground thread screwing tackle	..	223	13							
Moulds and dies	..	977	82							
Other metal-cutting tools (except saws and saw blades), including broaches, and gear cutters not elsewhere specified	19	140	..							
	..	540								
Jigs and fixtures	Th.cwts.									
	4.0	111	156							
	..	1,018								
Unclassified engineers' small tools and parts	..	3,158	71	-	-	-	-	-	-	-
Total		14,632	..			3,100				1,530

(a) Not recorded separately.

(b) Described as "Welding machinery, other than tube making" in 1937 and 1935.

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Sales (or production) in the trade of other than principal products

Larger establishments

TABLE 10

	1948 Sales £'000	1937 Production £'000	1935 Production £'000
Machinery and plant and parts			
Boilers and boiler house plant	82		
Food preparation, processing and sterilising machinery	130		
Internal combustion engines, except engines for locomotives and marine engines	92		
Printing and bookbinding machinery	80		
Pumps, other than petrol and oil measuring and hand pumps	158	168	211
Textile machinery	114		
Wood working machine tools, other than portable power tools	115		
Other descriptions	1,522		
Gears and gear wheels	177	71	60
Tools and implements			
Edge and similar tools	90		
Files and rasps	284		
Gauges, other than pressure gauges	391		
Saws and saw blades, other than hacksaws and hacksaw blades	610	278	219
Spanners and wrenches	135		
Other hand tools and implements	582		
Castings, forgings, stampings and pressings of iron and steel	490	186	89
Other goods	2,402	146	98
Scrap iron and steel sold	292	74(a)	33(a)
Work done	98(b)	-	-
Total	7,844	923	710

(a) Including other scrap metals.

(b) Amount charged.

Analysis of sales, 1948

Larger establishments in Great Britain

TABLE 11

	Sales £'000	Percentage of total sales
Sales (or transfers) to other organisations under the same control		
Productive works	1,320	2.0
Export sales organisations (including branches abroad)	623	0.9
Other wholesale or selling organisations and retail shops, etc.	2,267	3.4
Unclassified	782	1.2
Total sales (or transfers) to other organisations under the same control	4,992	7.5
Sales to independent buyers		
Exports invoiced directly overseas	6,366	9.5
Exports invoiced to Crown Agents and purchasing houses in this country of individual firms and governments abroad	3,658	5.5
His Majesty's Government and Local Authorities (other than productive establishments)	1,059	1.6
Manufacturers, repairers, builders, mines, public utilities, and transport and other productive undertakings	30,388	45.4
Wholesalers, merchants and other agents for resale	15,814(a)	23.6
Retailers, including multiple shops, caterers and N.A.A.F.I., for resale	488	0.7
Other businesses (including farmers) and institutions of all kinds	560	0.8
Members of the public, including employees	91	0.1
Unclassified	3,542	5.3
Total sales to independent buyers	61,967	92.5
Total	66,959	100.0

(a) Of this total £10,468,000 was recorded as divided between £5,077,000 for export and £5,391,000 for other sales.

Production, exports and imports
of certain principal products (a)

Note - In the returns of exports and imports for 1937, parts of metal-working machine tools are not distinguished separately from complete machines, or used machines from new machines. For 1948, particulars of new machines, of used machines and of parts are shown separately, but detail as to types is available only in respect of complete new machines.

TABLE 12

	Production (b) (c)			Exports (d)			Retained imports (e)			
	No.	Tons	£'000	No.	Tons	£'000	No.	Tons	£'000	
Machine tools, metal-working, new (other than portable power tools)										
Boring, complete										
Vertical, including vertical fine boring machines and boring mills	1948	1,170 (f)	3,480 (f)	933 (g)	268	869	277	206	329	223 (h)
Other	1948	958 (f)	3,057	960	620	1,675	551			
Total boring										
Complete	{ 1948	2,128 (f)	6,537 (f)	1,893	888	2,544	827	206	329	223 (h)
	{ 1937	..	5,629	676	..	893	110 (i)	..	2,341	409 (i)
Parts	1937	..	..	17	..	..	..	..	..	..
Broaching, complete	1948	71	238	89	41	49	26	..	..	..
Drilling										
Complete	{ 1948	..	12,110 (f)	3,326	9,948	4,529	1,371	150	46	29
	{ 1937	..	8,953	1,047	..	1,469	237	..	825	164
Parts	1937	..	..	48	..	..	..	..	..	..
Grinding, other than threading (j)										
Complete	{ 1948	..	9,150 (f)	3,052	10,762	3,694	1,516	448	558	449
	{ 1937	..	6,438	1,107	..	1,393	296	..	2,808	789
Parts	1937	..	..	34	..	..	..	..	..	..
Lathes, complete										
Fully automatic (auto-matics)	1948	1,144	2,609	1,749	1,074	1,889	896 (k)	472	939	603 (k)
Capstan and turret	1948	..	4,700 (f)	2,203	1,623	2,929	1,280	(l)	40	60
Other	1948	..	17,020 (f)	5,423	4,836	5,922	2,081	145	196	104 (m)
Screwing, complete	1948	..	790 (f)	307	445	404	202	..	..	..
Total lathes and screwing machines										
Complete	{ 1948	..	25,119 (f)	9,682	7,978	11,144	4,458	610	1,175	766 (m)
	{ 1937	..	19,534	3,452 (n)	..	3,816	710	..	7,244	1,740
Parts	1937	..	..	261 (n)	..	..	..	..	..	..
Threading	1948	..	474	275	135	84	56 (o)	..	..	..

TABLE 12 (contd.)

	Production (b) (c)			Exports (d)			Retained imports (e)			
	No.	Tons	£'000	No.	Tons	£'000	No.	Tons	£'000	
Machine tools, metal-working, new (other than portable power tools) (contd.)										
Milling, other than threading (p)										
Complete	{ 1948	2,940 (f)	5,610 (f)	2,295	1,432	2,654	1,032	486	1,356	926
	{ 1937	..	5,935	1,288	..	558	140	..	4,116	982
Parts	1937	..	..	42	..	..	..	..	..	..
Gear cutting, complete	1948	306	952	474	119	201	123	..	..	..
Sawing										
Complete	{ 1948	..	3,450 (f)	575	1,549	694	236	135	13	7
	{ 1937	..	1,444	152	..	170	25	..	333	56
Parts	1937	..	..	5	..	..	..	..	..	..
Planing, complete	1948	..	2,950 (f)	522	217	906	197	27	104	63 (q)
Shaping, complete	1948	2,016	2,403	611	1,560	1,554	476			
Total planing and shaping										
Complete	{ 1948	..	5,353 (f)	1,133	1,777	2,460	673	27	104	63 (q)
	{ 1937	..	7,036	609	..	874	110	..	1,132	178
Parts	1937	..	..	6	..	..	..	..	..	..
Slotting, complete	1948	149	807	173	131	382	105	..	..	..
Presses, complete										
Hydraulic										
Extrusion	1948	31	1,034	172	22	406	82	210	780	296
Other	1948	..	4,290 (f)	825	299	1,891	392			
Other presses	1948	..	13,500 (f)	2,254	1,089	1,820	414	..	..	..
Punching and shearing, complete	1948	..	3,700 (f)	708	6,300	1,743	432	61	144	52
Straightening rolls, and plate and sheet metal working machines (including tin box and can making), not elsewhere specified, complete	1948	..	5,180	1,126	947	1,627	305			
Other metal-working machine tools, complete	1948	..	..	2,083 (r)	4,122	3,294	961	712	1,404	809
Reconditioned metal-working machine tools, complete (s)	1948	..	..	1,544	4,752	11,034	1,655	412	3,190	223

TABLE 12 (contd.)

	Production (b) (c)			Exports (d)			Retained imports (e)		
	No.	Tons	£'000	No.	Tons	£'000	No.	Tons	£'000
Parts of metal-working machine tools of all types, including chucks and other tool and work holders	1948	..	5,573(t)	..	1,749	1,029	..	1,035	755(u)
		Tons		Tons		Tons			
Welding and cutting machinery and equipment, other than tube making (including parts)									
Electric									
Arc welding									
Alternating current (transformer)	1948	..	507	404	184	1,164	285		
Other	1948	..	1,575	1,149	578				
Resistance welding	1948	..	874	70	48				
All other descriptions	1948	..	1,389	960	633				
Electrodes (other than carbon) for arc welding									
Ferrous	1948	31,490	2,481	3,649	355				
Non-ferrous	1948	550(f)	271	333	171				
Drills, cylindrical, helically grooved, commonly known as twist drills, bit stock drills and machine bits for wood (but not including auger bits)	1948	..	3,694	801	1,193	4	2		
	1937	..	613	259	167	655	72		
		Th. cwts.		Th. cwts.		Th. cwts.			
Hacksaw frames and hacksaw blades	1948	..	1,537	20.0	530	0.2	6		
	1937	31.7	494	10.7	166	2.4	19		

- (a) Figures of sales (or production) refer only to larger establishments in the relevant years. All recorded exports from and imports into the United Kingdom are given in the table. The figures, therefore, are not strictly comparable.
- (b) Sales in 1948 and production for sale in 1937, including, where necessary, quantity estimates for output returned by value only.
- (c) Including sales (or production) by establishments classified to other trades.
- (d) Valued f.o.b.
- (e) Valued c.i.f.
- (f) Partly estimated.
- (g) Including all types of jig boring machines.
- (h) Including broaching machines.
- (i) Described as "Boring mills".
- (j) The overseas trade figures include thread grinding machines; the retained imports for 1948 also include lapping and honing machines.
- (k) Described as "Automatic".
- (l) Re-exports in excess of imports.
- (m) Including threading machines other than thread grinding or milling machines.
- (n) Excluding screwing machines.
- (o) Excluding thread grinding or milling machines.
- (p) The overseas trade figures include thread milling machines; the retained imports for 1948 also include gear cutting machines.
- (q) Including slotting machines.
- (r) Including unclassified sales of machine tools (£270,000), and parts of lapping and honing machines.
- (s) The overseas trade figures relate to used machines, whether reconditioned or not.
- (t) Excluding parts of lapping and honing machines.
- (u) Excluding chucks and other tool holders.

Purchased materials and fuel
Larger establishments

TABLE 13

	1948		1937		1935	
	Materials and fuel purchased		Usage of purchased materials and fuel			
	Quantity	Cost	Quantity	Cost	Quantity	Cost
Materials	Th. tons	£'000	Th. tons	£'000	Th. tons	£'000
Iron and steel						
Pig iron	15.1	159	20.8	106	14.4	63
Castings in the rough (a)						
Iron	69.8	3,874	52.8	1,087	36.2	630
Alloy steel	0.9	153	6.2	163	4.7	107
Non-alloy steel	..	26				
3.4	277					
Bars and rods						
Alloy steel	8.5	1,093(b)	23.3	870	12.0	205(b)
Iron and non-alloy steel	16.5	734(b)					..	105	..	66
Forgings in the rough (a)						
Alloy steel						
Drop	0.7	86				
Other	1.3	140				
..	..	18				
Unclassified	0.8	124				
Iron and non-alloy steel			5.6	198	3.4	102
Drop	0.6	54				
..	..	11				
Other	3.2	226				
..	..	29				
Iron and non-alloy steel (c)						
Angles, shapes and sections	1.6	49	0.4	8(d)	0.3	4
..	..	13				
Bars and rods, and angles, shapes and sections, unclassified	3.5	124	-	-	-	-
Plates and sheets	5.0	152	2.6	133	1.4	17(b)
Hoop and strip (including tape)	0.2	9				
..	..	2				

TABLE 13 (contd.)

	1948		1937		1935	
	Materials and fuel purchased		Usage of purchased materials and fuel			
	Quantity	Cost	Quantity	Cost	Quantity	Cost
	Th. tons	£'000	Th. tons	£'000	Th. tons	£'000
Materials (contd.)						
Iron and steel (contd.)						
Iron and non-alloy steel (c) (contd.)						
Tubes and fittings	0.4	40	..	8(e)	..	2(e)
	..	35				
Blooms, billets and slabs	6.8	102				
Wire, including cables and rope	20.2	559				
Other descriptions, except finished parts and scrap			8.3	262	..	(f)
Alloy steel	1.0	216				
Iron and non-alloy steel	0.2	10				
	..	14				
Iron and steel (except castings, forgings, finished parts, and scrap), unclassified						
Alloy steel	7.7	2,730	-	-	3.6	317(g)
Iron and non-alloy steel	5.9	255				
	..	109				
Machined castings	1.0	86	..	(f)	..	(f)
	..	31				
Brass (including all alloys of copper, other than nickel alloys)	Th. cwts.		Th. cwts.		Th. cwts.	
Rods and sections	23.5	179	2.2	11		
Castings	26.1	334	15.6	88	15.6	94(h)
Other descriptions, except finished parts	25.3	222	0.6	2		
Aluminium and aluminium alloys						
Castings and forgings, rough dressed	14.8	183				
Other descriptions, except finished parts	2.0	18	2.1	16	2.7	17(i)

TABLE 13 (contd.)

	1948		1937		1935	
	Materials and fuel purchased		Usage of purchased materials and fuel			
	Quantity	Cost	Quantity	Cost	Quantity	Cost
	Th. cu. ft.	£'000		£'000		£'000
Materials (contd.)						
Timber (excluding timber used for making into cases, etc., or for repairing)						
Hardwood	14.7	9				
	..	4				
Softwood	0.5	41	..	63(j)	..	(f)
	..	10				
Packing materials	..	565				
Consumable tools bought as replacement	..	1,006	..	151	..	(f)
Scrap iron and steel	Th. tons					
	9.4	57				
Transmission chains, iron and steel	..	15				
Paint, enamel and varnish	Th. galls.					
	70	91				
	..	35				
Machinery belting (including conveyor and elevator bands)	..	64				
Ball and roller bearings	Th. cwts.					
	3.0	113				
	..	326				
Nuts, bolts, washers, etc. (b)	..	213	..	2,135	..	1,586(k)
Purchased components not elsewhere specified	..	6,439				
Replacement parts for firms' own machinery, other than machined castings	..	270				
Second-hand machinery (b)	..	459				
All other purchased materials	..	3,338				
Fuel and electricity	Th. tons		Th. tons		Th. tons	
Coal	43.4	122	27.9	27	18.8	19
Coke	34.7	145	12.7	22	12.1	18

TABLE 13 (contd.)

	1948		1937		1935	
	Materials and fuel purchased		Usage of purchased materials and fuel			
	Quantity	Cost	Quantity	Cost	Quantity	Cost
	Th. B. T. U. (kW.hrs.)	£'000	Th. B. T. U. (kW.hrs.)	£'000	Th. B. T. U. (kW.hrs.)	£'000
Fuel and electricity (contd.)						
Electricity purchased (1)						
From public supply	121,134	574	55,341	161	40,478	123
From other sources	7,471	20				
Electricity obtained from other works under the same ownership	7,471	20				
Motor spirit (petrol) and derv. fuel	Th. galls.		Th. galls.		Th. galls.	
Used for road vehicles	441	45	..	(f)	..	(f)
Used for other power purposes	72	5				
Other oil fuel (including creosote/pitch mixtures)	1,163	45	424	8(m)	361	6(m)
Gas purchased	Th. therms					
From public supply	4,914 Th. cu. ft. 130,940 ..	184 20 21	..	58	..	(f)
From other sources	68,174	8				
Gas obtained from other works under the same ownership	..	3				
All other purchased fuel	..	12				
Total		26,732		5,680		3,376

- (a) Not described as "in the rough" in 1937 and 1935. The 1948 figures may include some machined castings (or forgings).
 (b) So far as recorded separately.
 (c) The figures for 1937 and 1935 include alloy steel.
 (d) Including girders, beams, joists and columns.
 (e) Described as "wrought tubes".
 (f) Not recorded separately.
 (g) Steel only.
 (h) Non-ferrous alloys in all forms.
 (i) Aluminium in all forms.
 (j) Described as "Timber, including hardwood and packing cases".
 (k) Including fuel not specified separately.
 (l) The total quantity of electricity consumed in 1948 was 142,317,000 B.T. units, including 13,712,000 generated in the same works.
 (m) Described as "Heavy fuel oil".

Stocks of finished products and work in progress and stocks of materials and fuel, 1948

Larger establishments in Great Britain

TABLE 14

	At beginning of year		At end of year	
	Quantity	Value	Quantity	Value
		£'000		£'000
Finished products	..	3,484	..	4,445
Work in progress		9,016		9,913
Total finished products and work in progress		12,501		14,359
Materials and fuel	Th. tons		Th. tons	
Alloy steel in all forms, except finished parts	6.2	836	7.4	1,025
	..	232	..	248
Iron and non-alloy steel in all forms, except finished parts	26.0	1,007	26.7	1,131
	..	291	..	375
Other descriptions of materials and fuel	..	2,745	..	3,004
Unclassified	..	924	..	1,054
Total materials and fuel		6,035		6,836

Employment and remuneration (a)

Larger establishments

TABLE 15

	Average number of operatives			Administrative, technical and clerical employees (b)			Total		
	1948	1937	1935	1948	1937	1935	1948	1937	1935
Males									
Under 18	3,660	5,004	3,530	371	394	290	4,031	5,398	3,820
All ages	53,571	27,038	20,657	9,103	3,406	2,975	62,674	30,444	23,632
Females									
Under 18	469	771	562	876	373	238	1,345	1,144	800
All ages	8,478	1,828	1,395	5,300	1,386	1,141	13,778	3,214	2,536
Total									
Under 18	4,129	5,775	4,092	1,247	767	528	5,376	6,542	4,620
All ages	62,049	28,866	22,052	14,403 (c)	4,792	4,116	76,452 (c) (d) (e)	33,658	26,168
Total remuneration	£'000	..	..	£'000	..	..	£'000	..	..
	19,617	..	..	6,260	..	..	25,877	..	..

(a) Excluded employees. The following numbers were employed at establishments in this trade but are not included in the table or in any other report (e.g., employees in a separate selling or transport organisation for which separate accounts are kept):-

Canteen workers 34 males 1,032 females

Other workers 653 males 583 females

(b) Number at September 25, 1948, October 16, 1937, and October 12, 1935.

(c) There were, in addition, 79 working proprietors (77 males and 2 females) in 1948. Working proprietors are included in the 1937 and 1935 figures.

(d) The employers' share of contributions to all National Insurance Schemes payable during the year in respect of these workers amounted to £604,000.

(e) The following persons (included in this total) were employed on special work by establishments employing 100 or more persons:-

	Operatives	Administrative, technical and clerical employees
Transport of goods outside the premises	121	
Maintenance and repair of firms' buildings, but not plant	259	
Research work not directly connected with current production however charged	43	80

In addition to the employees in the above table the firms in this trade employed 13 male and 1 female outworkers in 1948, the amount paid to them being £2,000. Similar information is not available for 1937 and 1935.

Wages and salaries paid, 1948 (a)

Larger establishments in Great Britain

TABLE 16

	Amount paid by all establishments	Establishments making returns for the calendar year					
		Amount paid	Percentage of annual remuneration paid in				
			First quarter	Second quarter	Third quarter	Fourth quarter	Year
Wages and salaries of Operatives	£'000 19,617	£'000 9,443	24.3	25.1	24.3	26.4	100.0
Administrative, technical and clerical employees	6,260	3,050	24.1	24.0	24.4	27.5	100.0
Total	25,877	12,493	24.2	24.8	24.3	26.7	100.0

(a) Including bonus and commission payments.

TABLE 17 - Payments for work done on materials given out, 1948

Larger establishments in Great Britain

The total amount paid for work done on materials given out was £1,164,000.

Payments for certain services, 1948

Larger establishments in Great Britain

TABLE 18

	Amount paid
	£'000
Repair and maintenance	
Of buildings	193
Of Plant, machinery and vehicles	302
Unclassified	174
Hire of plant, machinery and vehicles	39
Advertising and market research	
Advertising in newspapers, magazines and periodicals	162
Other advertising services (poster display, despatch of circulars, etc.) and market research	78
Unclassified	223
Payments made for research work	
To research associations	15
To universities, institutions, academic bodies and similar agencies	2
To other commercial concerns	23
Postage, telephone, telegrams and cables	238
Commercial insurance premiums	249
Rates (excluding water rates) payable in the year	88

Plant, machinery and vehicles acquired and disposed of, 1948

Larger establishments in Great Britain

TABLE 19

	Acquisitions		Disposals
	New	Second-hand	
Plant and machinery	£'000 1,501	£'000 498	£'000 208
Vehicles	148	43	43
Total	1,649	541	251

Capital expenditure on building work and changes in occupation of buildings and land, 1948

Larger establishments in Great Britain

TABLE 20

	£'000	£'000
1. Capital expenditure on building work (a)		415
2. Existing buildings and land (b)		
(1) Capital cost of freeholds bought	157	
Estimated capital value of		
(ii) Rented property newly occupied in the year (c)	83	
(iii) Leasehold buildings and land newly occupied in the year	246	
Total of heading 2		486
Total of headings 1 and 2		901
3. Existing buildings and land relinquished (d)		
(1) Selling value of freeholds sold	49	
(ii) Estimated value of other properties relinquished	46	
Total of heading 3		95
4. Headings 1 and 2 less heading 3		806

(a) Excluding site value which, where appropriate, is included in heading 2(1).

(b) The figures do not reflect changes in ownership of previously occupied land and buildings.

(c) Property which is occupied under an agreement for the payment of rent without the purchase of a lease or the payment of a premium.

(d) Including property destroyed or abandoned.

1948

Summary

Larger establishments

TABLE 21

	England	Wales	Scotland	Great Britain
Gross output (production)	£'000 66,761	£'000 465	£'000 2,593	£'000 69,819
Cost of materials and fuel used	24,780	199	952	25,931
Payment for work done on materials given out	1,105	10	48	1,164
Net output	40,876	256	1,592	42,724
Wages and salaries of persons employed	24,837	171	870	25,877
	No.	No.	No.	No.
Average number of persons employed (a)	73,130	493	2,908	76,531
	£	£	£	£
Net output per person employed (a)	559	519	547	558
Stocks at end of year	£'000	£'000	£'000	£'000
Finished products and work in progress	13,677	54	628	14,359
Materials and fuel	6,575	33	228	6,836
	No.	No.	No.	No.
Number of establishments	589	6	21	616

(a) Excluding outworkers.

The values of gross output and of materials and fuel used are derived in the following way:-

	England	Wales	Scotland	Great Britain
Output of firms in this trade	£'000	£'000	£'000	£'000
Total value of sales (see Table 23)	65,302	461	2,564	68,327
Adjustment for changes in stocks and work in progress	+1,805	+ 5	+ 48	+1,858
Less payment for transport by other firms	346	2	19	366
Gross output (production)	66,761	465	2,593	69,819
Materials and fuel used by firms in this trade				
Purchases (see Table 24)	25,560	202	970	26,732
Adjustment for changes in stocks	- 781	- 4	- 17	- 801
Materials and fuel used	24,780	199	952	25,931

TABLE 23 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	England and Wales			Scotland			Great Britain		
	Quantity		Value	Quantity		Value	Quantity		Value
	No.	Tons	£'000	No.	Tons	£'000	No.	Tons	£'000
Principal products (contd.)									
Machine tools, metal-working, new (other than portable power tools) (contd.)									
Grinding, other than threading (contd.)									
Other, including universal	{ (1) (a) (a) .. ..	.. ..	.. ..	.. ..	.. ..	.. ..	4,414 27	2,571 .. 268 ..	943 30 85 95
Lathes									
Fully automatic (automatics)	{ (1) (a) (a) .. ..	.. ..	.. ..	.. ..	.. ..	.. ..	1,124 ..	2,529 ..	1,733 205
Capstan and turret	{ (1) (a) (a)	2,812 ..	4,528 ..	2,134 34 343	- -	- -	2,812	4,528	2,134 34 343
Centre	{ (1) (a) (a) .. ..	.. ..	.. ..	.. ..	.. ..	.. ..	11,458 ..	12,114 ..	3,728 163
Surface and boring	{ (1) (a) (a) .. ..	.. ..	.. ..	.. ..	.. ..	.. ..	126 9 ..	311	119 17 8
Tool-room	{ (1) (a) (a)	310 ..	850 ..	325 10	- -	- -	310 ..	850 ..	325 10
Other, including multi-tool or production	{ (1) (a) (a) .. ..	.. ..	.. ..	.. ..	.. ..	.. ..	1,063 ..	2,069 ..	727 3 70
Milling, other than threading									
Plain horizontal	{ (1) (a) (a)	825 ..	930 ..	358 14	- -	- -	825 ..	930 ..	358 14
Other, including vertical, universal and manufacturing	{ (1) (a) (a) .. ..	.. ..	.. ..	.. ..	.. ..	.. ..	1,661 55	4,292	1,737 25 8 78
Unclassified	(11) .. ..	.. ..	196	- -	- -	- -	.. ..	.. ..	196
Threading	{ (1) (a) (a)	115 ..	224 ..	146 46	- -	- -	115 ..	224 ..	146 46
Sawing	{ (1) (a) (a) .. ..	.. ..	.. ..	.. ..	.. ..	.. ..	4,582 ..	1,513 ..	331 16 35 18
Shaping	{ (1) (a) (a)	1,863 ..	2,275 ..	557 16	- -	- -	1,863 ..	2,275 ..	557 16

TABLE 23 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	England and Wales			Scotland			Great Britain		
	Quantity		Value	Quantity		Value	Quantity		Value
	No.	Tons	£'000	No.	Tons	£'000	No.	Tons	£'000
Principal products (contd.)									
Machine tools, metal-working, new (other than portable power tools) (contd.)									
Slotting	{ (1) 147 .. (11) ..	802 ..	172 7	- -	- -	- -	147 ..	802 ..	172 7
Presses, other than forging									
Hydraulic	{ (1) (11) ..	.. ..	(a) (a) .. ..	.. ..	.. ..	(a) (a)	1,289 ..	3,814 ..	716 100
Manual	{ (1) 6,334 609 (11) ..	1,152 ..	124 18 10	- -	- -	- -	6,334 609 ..	1,152 ..	124 18 10
Other descriptions	{ (1) (11) ..	.. ..	(a) 155	.. ..	.. ..	(a)	1,893 ..	5,843 ..	1,098 160 155
Punching and shearing	{ (1) 5,189 53 (11) ..	1,581 ..	258 42 229 55	809 459	105	.. ..	5,998 ..	2,040 ..	363 42 229 56
Tin box and can making	{ (1) 977 .. (11) ..	649 ..	359 64 158	- -	- -	- -	977 ..	649 ..	359 64 158
Forging machinery	{ (1) (11) ..	.. ..	(a) 167	.. ..	.. ..	(a)	11 ..	.. ..	25 39 167
Lapping and honing	(1) and (11) .. ..	.. ..	69	- -	- -	- -	.. ..	.. ..	69
Straightening rolls, and plate and sheet metal working machines, not elsewhere specified	{ (1) 2,187 .. (11) ..	2,070 ..	328 77 (a) ..	51 1,203	178	.. ..	2,238 ..	3,273 ..	506 77 30
Screwing	{ (1) 1,324 .. (11) ..	643 ..	251 5 (a) ..	- -	- -	- -	1,324 ..	643 ..	251 5 109
Other metal-working machine tools, new, including planing machines	{ (1) 2,483 17 .. (11) ..	3,209 ..	752 86 41 170 230	54 689	126 6	.. ..	2,537 ..	3,898 ..	881 86 41 176 241
Unclassified metal-working machine tools, new	{ (1) 67 .. (11) ..	27 ..	15 24 84 128	- -	- -	- -	67 ..	27 ..	15 24 84 159
Reconditioned metal-working machine tools	{ (1) (11) ..	.. ..	(a) 63	.. ..	.. ..	(a)	2,279 ..	6,461 ..	851 150 151 63

TABLE 23 (contd.)

Kind of output (1) Complete machines (11) Replacement parts	England and Wales			Scotland			Great Britain		
	Quantity		Value	Quantity		Value	Quantity		Value
	No.	Tons	£'000	No.	Tons	£'000	No.	Tons	£'000
Principal products (contd.)									
Welding and cutting machinery and equipment, other than tube making									
Electric									
Arc welding									
Alternating current (transformer)	{ (1) 1,127 (11) 887	{ 346 ..	{ 105 33	{ - -	{ - -	{ - -	{ 1,127 867	{ 346 ..	{ 105 33
Direct current									
Single operator	{ (1) 1,513 (11) ..	{ 1,233 910	{ 620 422	{ - -	{ - -	{ - -	{ 1,513 ..	{ 1,233 910	{ 620 422
Other descriptions (including direct current, other than single operator)	{ (1) 97 (11) ..	{ 248 ..	{ 148 24	{ - -	{ - -	{ - -	{ 97 ..	{ 248 ..	{ 148 24
Resistance welding									
Spot and projection	{ (1) .. (11) ..	{ (a) (a)	{	{	{	{	{ 429 168	{ 235 ..	{ 78 32
Other (including butt and flash butt, and seam)	{ (1) .. (11) ..	{ (a) (a)	{	{	{	{	{ 93 ..	{ 161 21	{ 133 15
Other descriptions (including gas welding and cutting torches and equipment)	{ 1,226 ..	{ 887 433	{ - -	{ - -	{ - -	{	{ 1,226 ..	{ 887 433	{
Electrodes (other than carbon) for arc welding									
Ferrous									
Non-ferrous									
Mill. ft.									
Ferrous									
Non-ferrous									
Engineers' small tools and parts									
Hard metal									
Hard metal tips and inserts, sold separately	{ Th. doz. 209	{ .. 189	{ - -	{ - -	{ - -	{ - -	{ Th. doz. 209	{ .. 189	{ - -

TABLE 23 (contd.)

	England and Wales		Scotland		Great Britain			
	Quantity		Value		Quantity		Value	
	Th. doz.	£'000	Th. doz.	£'000	Th. doz.	£'000	Th. doz.	£'000
Principal products (contd.)								
Engineers' small tools and parts (contd.)								
Hard metal (contd.)								
Hard metal tipped tools, dies, and die pellets (sold separately)	..	(a)	..	(a)	..	(a)	..	1,889
Other than hard metal								
Drills, cylindrical, helically grooved, commonly known as twist drills, bit stock drills and machine bits for wood (but not including auger bits)								
High speed steel twist drills	{ 1,185 ..	{ 1,782 1,347	{ - -	{ - -	{ 1,185 ..	{ 1,782 1,347		
Carbon steel twist drills	{ 376 ..	{ 166 63	{ - -	{ - -	{ 376 ..	{ 166 63		
Other	{ 9 ..	{ 15 16	{ - -	{ - -	{ 9 ..	{ 15 16		
Press tools	{ 1.7 ..	{ 536 1,469	{ - ..	{ 6 9	{ 1.7 ..	{ 543 1,478		
Hacksaw frames	{ Th. doz. 47	{ Th. cwts. 6.0	{ 94 2	{ - -	{ Th. doz. 47	{ Th. cwts. 6.0	{ 94 2	
Hacksaw blades	{ 2,726 2,449	{ 17.0 ..	{ 429 593	{ - -	{ 2,726 2,449	{ 17.0 ..	{ 429 593	
Lathe chucks	{ Th. cwts. 32.6	{ 576 296	{ - -	{ - -	{ Th. cwts. 32.6	{ 576 296		
Drill chucks	{ 3.1 ..	{ 149 100	{ - -	{ - -	{ 3.1 ..	{ 149 100		
Other tool and work holders (b)	{ Th. doz. 53	{ 463 327	{ - -	{ - -	{ Th. doz. 53	{ 463 327		
Slitting saws	{ .. 60	{ 60 881	{ - -	{ - -	{ .. 60	{ 60 881		
Milling cutters	{ 60 ..	{ 881 374	{ - -	{ - -	{ 60 ..	{ 881 374		
Reamers, end mills and similar shank tools	{ .. (a)	{ (a) ..	{ .. (a)	{ (a) ..	{ .. (a)	{ 79 381		

TABLE 23 (contd.)

	England and Wales		Scotland		Great Britain	
	Quantity	Value	Quantity	Value	Quantity	Value
	Th. doz.	£'000	Th. doz.	£'000	Th. doz.	£'000
Principal products (contd.)						
Engineers' small tools and parts (contd.)						
Other than hard metal (contd.)						
Lathe and planer tools						
Welded and brazed	83	343	-	1	83	344
	..	50			..	50
Other	62	169	-	-	62	169
	..	29			..	29
Cut and ground thread screwing tackle	..	(a)	..	(a)	..	2,799
Moulds and dies	..	1,077	..	1	..	1,078
Other metal cutting tools, (except saws and saw blades), including broaches, and gear cutters not elsewhere specified	..	(a)	..	(a)	136	1,079
					..	98
Jigs and fixtures	Th.cwts. 10.5	690	Th.cwts. 0.1	7	Th.cwts. 10.6	697
	..	2,088	..	15	..	2,103
Unclassified engineers' small tools and parts	..	798	-	-	..	798
Waste products, other than scrap iron and steel	..	45	..	2	..	47
Repair and jobbing work (c)		602		60		662
Work done for the trade or on commission (c)		(a)		(a)		608
Total principal products		58,141		2,342		60,483
Other output						
Machinery and plant and parts						
Boilers and boiler house plant	..	82	-	-	..	82
Food preparation, processing and sterilising machinery	..	130	-	-	..	130
Internal combustion engines, except engines for locomotives and marine engines	..	92	-	-	..	92
Printing and bookbinding machinery	..	80	-	-	..	80
Pumps, other than petrol and oil measuring and hand pumps	..	(a)	..	(a)	..	158
Textile machinery	..	114	-	-	..	114
Wood working machine tools, other than portable power tools	..	115	-	-	..	115

TABLE 23 (contd.)

	England and Wales		Scotland		Great Britain	
	Quantity	Value	Quantity	Value	Quantity	Value
		£'000		£'000		£'000
Other output (contd.)						
Machinery and plant and parts (contd.)						
Other descriptions	..	1,514	..	8	..	1,522
Gears and gear wheels	..	(a)	..	(a)	..	177
Tools and implements						
Edge and similar tools	..	(a)	..	(a)	..	90
Files and rasps	..	284	-	-	..	284
Gauges, other than pressure gauges	..	(a)	..	(a)	..	391
Saws and saw blades, other than hacksaws and hacksaw blades	..	610	-	-	..	610
Spanners and wrenches	..	(a)	..	(a)	..	135
Other hand tools and implements	..	(a)	..	(a)	..	582
Castings, forgings, stampings and pressings of iron and steel	..	490	-	-	..	490
Other goods	..	2,234	..	168	..	2,402
Scrap iron and steel sold	..	287	..	4	..	292
Work done (c)		98		-		98
Total		65,763		2,564		68,327

(a) Owing to the risk of disclosure of information relating to individual firms, separate particulars cannot be given.

(b) So far as recorded separately.

(c) Amount charged.

Purchased materials and fuel

Larger establishments

TABLE 24

	England and Wales		Scotland		Great Britain	
	Quantity	Cost	Quantity	Cost	Quantity	Cost
	Th. tons	£'000	Th. tons	£'000	Th. tons	£'000
Materials						
Iron and steel						
Pig iron	..	(a)	..	(a)	15.1	159
Castings in the rough (b)						
Iron	67.0	3,715	2.8	159	69.8	3,874
Alloy steel	0.8	150	-	3	0.9	153
Non-alloy steel	2.9	242	0.4	34	3.4	277
Bars and rods (c)						
Alloy steel	8.2	1,070	0.3	22	8.5	1,093
Iron and non-alloy steel	15.1	689	1.4	46	16.5	734
Forgings in the rough (b)						
Alloy steel						
Drop	0.7	86	-	-	0.7	86
Other	1.3	133	0.1	6	1.3	140
Unclassified	0.8	124	-	-	0.8	124
Iron and non-alloy steel						
Drop	0.6	54	-	-	0.6	54
Other	2.7	197	0.5	29	3.2	226
Unclassified	..	29	..	-	..	29
Iron and non-alloy steel						
Angles, shapes and sections	1.4	45	0.2	4	1.6	49
Bars and rods, and angles, shapes and sections, unclassified	..	11	..	2	..	13
Plates and sheets	3.5	124	-	-	3.5	124
Hoop and strip (including tape)	4.5	140	0.5	12	5.0	152
Hoop and strip (including tape)	..	(a)	..	(a)	0.2	9
					..	2

TABLE 24 (contd.)

	England and Wales		Scotland		Great Britain	
	Quantity	Cost	Quantity	Cost	Quantity	Cost
	Th. tons	£'000	Th. tons	£'000	Th. tons	£'000
Materials (contd.)						
Iron and steel (contd.)						
Iron and non-alloy steel (contd.)						
Tubes and fittings	0.3	36	-	4	0.4	40
Blooms, billets and slabs	..	34	..	1	..	35
Wire, including cables and rope	..	(a)	..	(a)	6.8	102
Other descriptions, except finished parts and scrap						
Alloy steel	1.0	211	-	5	1.0	216
Iron and non-alloy steel	0.2	10	..	5	0.2	10
Iron and steel (except castings, forgings, finished parts, and scrap), unclassified	..	9	..	..	..	14
Alloy steel	7.7	2,729	-	1	7.7	2,730
Iron and non-alloy steel	5.8	254	-	1	5.9	255
Machined castings	..	109	..	..	..	109
Brass (including all alloys of copper, other than nickel alloys)	..	(a)	..	(a)	1.0	86
Rods and sections	Th. cwts.		Th. cwts.		Th. cwts.	
Castings	23.3	178	0.1	1	23.5	179
Other descriptions, except finished parts	23.6	302	2.5	31	26.1	334
Aluminium and aluminium alloys	24.9	220	0.3	2	25.3	222
Castings and forgings, rough dressed	..	(a)	..	(a)	14.8	183

TABLE 24 (contd.)

	England and Wales		Scotland		Great Britain	
	Quantity	Cost	Quantity	Cost	Quantity	Cost
		£'000		£'000	Th. cwts.	£'000
Materials (contd.)						
Aluminium and aluminium alloys (contd.)						
Other descriptions, except finished parts	..	(a)	..	(a)	2.0	18
Timber (excluding timber used for making into cases, etc., or for repairing returnable cases)						
Hardwood	..	(a)	..	(a)	14.7	9
					..	4
	Th. stan- dards		Th. stan- dards		Th. stan- dards	
Softwood	0.4	37	-	4	0.5	41
	..	10	..	1	..	10
Packing materials	..	551	..	14	..	565
Consumable tools bought as replacement	..	965	..	42	..	1,006
					Th. tons	
Scrap iron and steel	..	(a)	..	(a)	9.4	57
Transmission chains, iron and steel	..	15	..	1	..	15
	Th. galls.		Th. galls.		Th. galls.	
Paint, enamel and varnish	66	87	4	5	70	91
	..	33	..	1	..	35
Machinery belting (including conveyor and elevator bands)	..	62	..	2	..	64
	Th. cwts.		Th. cwts.		Th. cwts.	
Ball and roller bearings	3.0	112	-	1	3.0	113
	..	312	..	15	..	326
Nuts, bolts, washers, etc. (c)	..	(a)	..	(a)	..	213
Purchased components not elsewhere specified	..	6,227	..	213	..	6,439

TABLE 24 (contd.)

	England and Wales		Scotland		Great Britain	
	Quantity	Cost	Quantity	Cost	Quantity	Cost
		£'000		£'000		£'000
Materials (contd.)						
Replacement parts for firms' own machinery, other than machined castings	..	262	..	8	..	270
Second-hand machinery (c)	..	(a)	..	(a)	..	459
All other purchased materials	..	3,217	..	121	..	3,338
Fuel and electricity	Th. tons		Th. tons		Th. tons	
Coal	39.4	110	4.0	12	43.4	122
Coke	33.5	140	1.2	5	34.7	145
Electricity purchased (d)	Th. B. T. U. (kW. hrs.)		Th. B. T. U. (kW. hrs.)		Th. B. T. U. (kW. hrs.)	
From public supply	115,640	549	5,493	26	121,134	574
From other sources						
Electricity obtained from other works under the same ownership	7,471	20	-	-	7,471	20
Motor spirit (petrol) and deriv. fuel	Th. galls.		Th. galls.		Th. galls.	
Used for road vehicles	434	44	7	1	441	45
Used for other power purposes	72	5	-	-	72	5
Other oil fuel (including creosote/pitch mixtures)	1,162	44	1	-	1,163	45
Gas purchased	Th. therms		Th. therms		Th. therms	
From public supply	4,860	182	54	2	4,914	184
	Th. cu. ft.		Th. cu. ft.		Th. cu. ft.	
	129,531	20	1,409	-	130,940	20
	..	19	..	1	..	21
From other sources						
Gas obtained from other works under the same ownership	68,174	8	-	-	68,174	8
	..	3	..	..	..	3
All other purchased fuel	..	12	-	-	..	12
Total		25,763		970		26,732

- (a) Owing to the risk of disclosure of information relating to individual firms, separate particulars cannot be given.
- (b) May include some machined castings (or forgings).
- (c) So far as recorded separately.
- (d) The total quantity of electricity consumed in England and Wales was 136,823,000 B. T. units, including 13,712,000 generated in the same works. The total quantity of electricity consumed in Scotland was 5,493,000 B. T. units, no electricity being generated in the same works.

Employment and remuneration

Larger establishments

TABLE 25

	England and Wales			Scotland			Great Britain		
	Average number of operatives	Administrative, technical and clerical employees (a)	Total	Average number of operatives	Administrative, technical and clerical employees (a)	Total	Average number of operatives	Administrative, technical and clerical employees (a)	Total
Males									
Under 18	3,518	355	3,873	142	16	158	3,660	371	4,031
All ages	51,417	8,670	60,087	2,154	433	2,587	53,571	9,103	62,674
Females									
Under 18	467	836	1,303	2	40	42	469	876	1,345
All ages	8,378	5,082	13,460	100	218	318	8,478	5,300	13,778
Total									
Under 18	3,985	1,191	5,176	144	56	200	4,129	1,247	5,376
All ages	59,795	13,752(b)	73,547 (b) (c)	2,254	651(b)	2,905 (b) (c)	62,049	14,403(b)	76,452 (b) (c)
Total remuneration	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
	18,976	6,031	25,007	642	229	870	19,617	6,260	25,877

(a) Number at September 25, 1948.

(b) There were, in addition, 79 working proprietors (77 males and 2 females) in Great Britain; 74 males and 2 females in England and Wales, and 3 males in Scotland.

(c) The employers' share of contributions to all National Insurance Schemes payable during the year in respect of these workers amounted to a total of £604,000; £580,000 for England and Wales, and £24,000 for Scotland.

In addition to the employees in the above table the firms in England and Wales in this trade employed 13 male and 1 female outworkers, the amount paid to them being £2,000. No outworkers were recorded for Scotland.

Monthly index of employment of operatives: Larger establishments
(average employment in 1948 = 100)

TABLE 26

Month	Monthly index (a)			Month	Monthly index (a)		
	England and Wales	Scotland	Great Britain		England and Wales	Scotland	Great Britain
1948				1948			
January	98.6	100.1	98.7	August	100.5	101.0	100.5
February	99.1	100.6	99.2	September	100.3	101.7	100.3
March	99.9	101.3	100.0	October	99.8	99.0	99.8
April	100.8	100.6	100.8	November	99.5	97.4	99.5
May	101.1	100.8	101.0	December	99.1	97.1	99.0
June	100.8	100.9	100.8	Percentage employment in this trade covered by the index.	47.5	52.7	47.7
July	100.4	99.7	100.4				

(a) The index numbers are calculated from the number of operatives employed in one week in each month returned by larger establishments that made returns for the calendar year 1948.

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1952

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