52 Pumps, valves and compressors

This Report on the Pumps, Valves and Compressors Industry relates to establishments engaged wholly or mainly in manufacturing pumps for handling liquids (including petrol station pumps); industrial valves and cocks including pneumatic control valves; air and gas compressors (excluding compressors for refrigerators) and exhausters; fluid power equipment including equipment for operating machinery by hydraulic or pneumatic means, including hydraulic pumps and motors, hydraulic control and ancillary valves, pneumatic motors, pneumatic and hydraulic actuators, boosters, cylinders, rams and accumulators and power packs. Parts of pumps, valves and compressors, other than component parts of internal combustion engines, are included.

This industry corresponds to minimum list heading 333 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 Miscellaneous (Non-electrical) Machinery Industry (Part 49) in the Reports on the last detailed Census of Production for 1963 corresponding to the sub-divisions 'Pumps and pumping machinery', 'Industrial valves and cocks' and 'Compressors, etc'. The treatment of parts has been altered considerably for 1968 for this and other mechanical engineering industries. The distinction made in the 1963 reports between parts sold in association with the sale of complete machines, and other parts sold, has been discontinued for 1968 and all parts are now treated in the same way as complete machines for classification ie as principal products of their respective mechanical engineering industries and shown in Table 5.

Throughout this Report, the figures given for 1963 have been reclassified, as far as possible, according to the Standard Industrial Classification (Revised 1968) and to take account of the different treatment of parts adopted for 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.

METHOD OF CLASSIFICATION

In classifying returns to this industry the value of unspecified work done (other than structural and installation work), including repair work, was not taken into account unless it amounted to 80 per cent.or more of the total output of the return in which case the return was classified to General Mechanical Engineering (Part 66). The amount charged for erecting and installing machinery and plant (other than air conditioning, heating and ventilating plant) was treated as part of the selling value of these items in determining the industrial classification of returns. The standard classification procedure as outlined in the notes on page (i) was further modified where a return would have been classified to one of the mechanical engineering industries relating to a specific class of machinery (viz Parts 50 to 66) but where the sales of the principal products of the industry concerned (including parts) accounted for less than 20 per cent.of the total output: in such cases the return was classified to the residual sub-division of the General Mechanical Engineering Industry (Part 66). The classification of returns to sub-divisions of the industry shown in Table 4, followed the standard procedure.

The sales of characteristic products shown in Table 4 include, besides the value of complete pumps, valves and compressors and parts which were taken into account in classifying returns, the value of installation work.

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 <u>less</u> disposals.

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

				Unit	All estab	lishments
				Unit	1963	1968
Number of enterprises	Justuo Isk	i firesa Cor Not	NON TO VIOLENCE TO SE	No.	414	450
number of establishmen	ts			11	478	560
Gross output				£.000	170,259	318,145
let output				"	91,216	160,346
let output per head				£	1,383	1,898
	ſ	goods produced and work do	ne (c)	T.000	158,759	296,632
Sales and work done	11,789	merchanted goods and cante	en takings	"	12,255	19,683
	2,049	materials for use in produ packaging and fuel	ction and	"	62,870	131,416
Purchases	836.1	goods for merchanting and purchases	canteen	"	9,657	16,398
	110,8	for work done on materials	given out	"	4,362	9,372
Payments to other	800.5	for transport by road		- N		1,723
organi sations	0,00,1	AND AND AND THE AND THE AND THE AND AND THE AND	oveluding		1,825	1,120
1	780,5	by rail and other means postal services	excluding	. "	[1,020	1,093
Stocks and work in pro	gress					
Total stocks and wor		change during year		п	- 1,084	+ 4,032
progress	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	at end of year		"	59,630	110,629
	1	change during year		"	- 228	+ 2,390
Goods on hand for sa	ale {	at end of year		"	13,788	20,461
	(change during year		"	- 527	- 561
Work in progress	{	at end of year		"	25,559	45,997
	ر	change during year		и	- 329	+ 2,203
Materials, stores ar	d fuel	at end of year		11	20,283	44,171
1 3 7 57		total, including working p	roprietors	Th.	66.0	84.5
Number employed on ave	erage	operatives	roprietors	"	43.4	54.3
during the year	(6)	other employees (d)		11	22.2	29.9
		3 000,2		£,000	30,506	52,094
Wages and salaries	{	of operatives of other employees (d)		2 000	18,966	36,395
		of other employees (a)			10,300	30,333
Capital expenditure (e)				4 045	11 500
Total					4,945	11,582
New building work	.,	see see, bielen		1 1 1 2 2 2 2 2 2	1,219	2,712
Land and existing b				" "	3,384	8,864
Plant and machinery	(1)	7EG 274-70		"		THE R. P. LEWIS CO., LANSING
Vehicles (f)		COU NO. 1 100 10	Water our conjugate and the		428	720

(a) For 1968, estimates for establishments not making satisfactory returns and for small establishments, from which only employment data were collected, accounted for 3 per cent.of the total figures in which they were incorporated: of this, unsatisfactory returns accounted for less than 1 per cent. For 1963 the comparable figures were 5 per cent. and 2 per cent, respectively.

(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	223	243
Average number employed:		
Working proprietors	289	213
Other persons employed	1,889	2,283

Footnotes continued on page 52/2.

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)	Establishmen'ts Enter		Total number employed on average during the year (a)	Gross output	Net output	Net output per head
	Number	Number	Number	£'000	£'000	£
1-5	56	55	177	4.4	2 000	
6-10	53	52	422			•••
11-24	103	97	1,769	k converg himself		
25-49	69	66	2,584	9,616	4,572	1,769
50-99	70	64	5,076	21,911	10,367	2,042
100-199	59	58	8,179	30,891	16,203	1,981
200-299	43	39	10,675	40,616	20,737	
300-399	20	18	7,016	29,617	13,736	1,943
400-499	9	9	4,104	19,715	8,375	1,958
500-749	20	18	12,647	47,201		2,041
750-999	10	10	8,703	34,263	22,799	1,803
1,000-1,499	5	4	5,893	17,708	18,255	2,098
1,500-2,499	4	3	7,656		9,523	1,616
2,500 and over	3	3		26,963	15,749	2,057
nsatisfactory returns	36		9,176	29,145	14,696	1,602
ibatisfactory returns	30	36	404	A Marie Carlo	ACAD TRANSPORT FRANCE	
Total	560	450	84,481	318,145(c)	160,346(c)	1,898(c)

(ii) Employees, wages and salaries

All establishments: United Kingdom

Number employed on average during the	Emp]	loyees	Wages an	d salaries	Wages and salaries per head		
year by the establishment (a)	Oper- atives	Others (d)	Oper- atives	Others (d)	Oper- atives	Others (d)	
	Number	Number	£'000	£'000	£	£	
1-5	1.00				villingo le		
6-10				(8) appro1.	ni volta te		
11-24							
25-49	1,742	800	1,606	976	922	1,220	
50-99	3,429	1,615	3,219	1,896	939	1,174	
100-199	5,396	2,762	5,297	3,252	982	1,177	
200-299	6,859	3,812	6,708	4,680	978	1,228	
300-399	4,282	2,730	4,014	3,473	937	1,272	
400-499	2,754	1,350	2,625	1,592	953	1,180	
500-749	8,490	4,156	8,211	5,117	967	1,231	
750-999	5,609	3,094	5,261	3,847	938	1,243	
1,000-1,499	3,395	2,498	3,063	2,870	902	1,149	
1,500-2,499	4,899	2,757	4,684	3,466	956	1,257	
2,500 and over	5,792	3,385	5,798	4,126	1,001	1,219	
nsatisfactory returns		and the contract		169 [1.75]	1 1 20 20 10 10	edilensol es solicies	
Total	54,301(c)	29,864(c)	52,094(c)	36,395(c)	959 (c)	1,219(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
project Eigenby Veh	Per cent.	Per cent.	Per cent.
Under 18	3	1	4
18 and over	79	17	96
All ages	82	18	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) Some establishments employing fewer than 25 persons were included in returns for larger establishments. For both 1968 and 1963 these amounted to 9 establishments.
- (b) The method of classifying returns to sub-divisions of the industry is explained in the notes; the characteristic products of each sub-division are identified in Table 5.
- (c) Owing to the introduction in 1968 of new headings covering fluid power equipment, comparable 1963 data are not available.
- (d) The sum of the figures for the sub-divisions exceeds the total for the industry to the extent that enterprises made returns for more than one sub-division.
- (e) 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).
- (f) Direct sales of goods (excluding canteen takings) made to, and work done for, the general public by larger establishments are included. These amounted to £89,000 in 1968. Similar information is not available for 1963.
- (g) Characteristic products relate only to sub-divisions of the industry.
- (h) For sub-divisions of the industry, this is the ratio of sales of characteristic products to total sales of goods produced and work done. For the industry as a whole, this is the ratio of total sales of principal products by the industry to total sales of goods produced and work done.
- (i) Progress payments received for work in progress in 1968 from United Kingdom customers were recorded as £9,892,000 at beginning of year and £9,368,000 at end of year; and from overseas customers £658,000 at beginning of year and £513,000 at end of year. Similar information is not available for 1963.
- (j) Administrative, technical and clerical employees.
- (k) Excluding expenditure for establishments not yet in production.
- (1) Acquisitions less disposals.

TABLE 4 Analysis of larger establishments, 1963 and 1968

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

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

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

			Sub-c	divisions of	f the indus	stry (b)(c)		1	Industry	Quantity Salue Salien	19	963		1968		
		Uni	Pumps	Valves	Com-	Fluid		otal	sub- division (b)	Seinterlas 2000 Com Vidadad	Quantity	Value	Quantity	Value	Enter- prises	Entries
			10	20	30	equipment 40				TO A SECTION OF MICH.	Number	£,000	Number	£,000	Number	Number
No. 1 C			1968	1968	1968	1968	1963	198	10	Pumps (excluding hydraulic types) (c)						
Number of ente		No.	72	82	31	61	188	22		Kerbside petrol and oil						
Number of esta	ablishments	п	84	121	36	80	250	3.		measuring			17 (17			
Gross output		£,000	83,441	117,933	46,594	60,318	162,485	308,8		Complete	20,961	3,471	21,493	4,726	11	11
Net output		"	39,729	63,766	21,912	29,970	87,051	155,37		Parts		1,192	teg .17.ex.	1,348	19	20
Net output per	f nead	£	1,846	1,927	1,944	1,876	1,383	1,89	107	Hand pumps (excluding kerbside	1.671	20276				
Sales and	work done (e) (f)	£'000	77,154	109,617	44,522	56,148	151,510	287,4	1	petrol and oil measuring)	708				_	
work done	merchanted goods and canteen takings		7 014							Complete	89,191	384 133	183,883	834 162	} 28	28
Sales of charac	acteristic products	п	7,214	6,143	2,532	3,185	11,696	19,0		Parts		38		271	19	19
		Per	56,413	87,326	31,294	44,598	(g)	-		Mechanically driven pumps		50		211	10	10
Index of specia	alisation (h)	cent.	73	80	70	79	75	1		(excluding kerbside petrol and	BALL	non Pr		11 Mary College (1 000)		
	materials for use in production and packaging,	1000						1		oil measuring, and pumps specifically designed for						
Purchases	and fuel	£'000	35,829	46,018	21,596	23,901	59,999	127,3		actuating hydraulic equipment)		8,502		tore . Steamy		
	goods for merchanting and canteen purchases	,	5,854	4,735	0 105	2 100	0.010		46	complete	\$ 8,890	1,319	1			
	for work done on		0,004	4,700	2,195	3,106	9,216	15,8		Reciprocating	{ "	571	} 17,339	2,760	42	42
D	materials given out	H.	1,289	3,392	865	3,535	4,163	9,0		Centrifugal	11 .000.2			4112		
Payments to other	for transport by road		487	640	272	071		1.0		With stuffing box		17,512	59,868	17,655	52	55
organisations	by rail and other		407	040	212	271	1 740	1,6		Without stuffing box		123	431,204	8,602	39	42
	means excluding postal services		212	356	305	107	1,742	1.07		Rotary	• •	6,421		11,195	44	46
Stocks and work		No. appear	212	330	309	187) 4	1,00		0 the r		4,979	18,444	2,054 3,867	} 47	48
Goods on hand for	change during year	n	+ 171	+ 1,234	+ 28	+ 883	- 218	+ 2,31		5 Coupe 281 E08, 8	H Cape an	285, 34		3,007)	
sal e	at end of year		3,285	9,100	2,843	4,599	13,158	19,82		Parts for mechanically driven pumps (excluding kerbside	1 (503.5		2.00	05 millions		
Work in	change during year	"	- 1,097	+ 939	- 488	and the same of th		10,00		petrol and oil measuring, and				10.000	10	
progress (i)	at end of year	"	17,871	11,719	6,793	+ 102 8,188	- 503 - 24,392	- 04		pumps specifically designed fo actuating hydraulic equipment)	r	11,731		14,408	127	134
Materials,	change during year	for her	el ambients, com					44,57		Unclassified pumps (excluding				are to divine t		1
stores and fuel	<	52	- 41	+ 973	+ 551	+ 651		+ 2,13		hydraulic types)	h-yacri-	1,248(c)		876	5	5
and ruer	total, including working	"	9,964	18,501	6,255	8,082	19,357	42,80		Total pumps (excludin	a		NAME - 3 7 - 4	s de morbons		
Number employed	1 m === = -1 = 1	No.	21,523	33,088	11,273	15,979	62,955	81,86		hydraulic types)	7728	48,999(c)		68,758		
on average during the year	Coneratives	n	13,023	22,649	7,260	9,817	41,593	52,74	20	Valves and cocks for the control		28,784	S. de	miles (things)	odan?	
during the year	other employees (j)	п	8,476	10,402	4,006	6,127	21,286	29,01	20	of liquids, steam and gases		nep-		mercus bo	and the	
Wages and salaries	fof operatives	£,000	12,129	21,374	7,034	10,068	29,241	50,60		(excluding hydraulic control valves and inlet and exhaust					4.00	
salaries	of other employees(j)	п	9,992	12,606	4,871	7,887	18,177	35,35		valves for internal combustion		- rid me				227/4
Wages and	Coperatives	£	931	944	969	1,026	703	95	1	engines)			*** - 9(F) (F)	Programme and	1045219 on	
salaries per head	other employees (j)	"	1,179	1,212	1,216			1.0		Industrial	1	[J 783,247	6 070	1	
Capital expendit			1,175	1,212	1,210	1,287	854	1,2		Pneumatic control valves			{	6,072 7,195	58	63
New building w		61000	5.70	1 045	001	450		2 0		Other			2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	the service and service	philoson	
Land and	into fitty on a specime diameter	£'000	573	1,245	331	479	1,164	2,62		Wholly or mainly of brass		60,302(d)	22,346,747	18,071	3 99	120
existing	acquisitions	"	131	32	168(1)	135(1)	427	43		and other copper alloys		00,302(0)		5,584	5 33	120
buildings	l di sposal s	п	242	645		1	509	1,12	- 4	Wholly or mainly of cast	Ollar San San		2,704,069	15,939	} 73	89
Plant and	{ acquisitions	"	1,784	4,555	872	2,153	3,566	9,36	100	iron	38	postico trei	[7,281	1	
machinery	disposals	н	125	351	163	136	337	77	-	Other industrial valves and cocks	J	DELINE STATE STATE	3,663,982	30,876 8,392	95	112
Vehi cles	{ acquisitions	"	361	418	185	197	715	1,16		(1) So fine an exception resource	1				,	
	disposals		141	148	96	78	307	46		Total industrial valv	res	A SUMMER TO SERVE STATE OF SERVER SERVER STATE OF SERVER STATE OF SERVER SER	All and the second	NEWS CONTRACTOR	B CONTRACTOR	STATE OF THE PARTY

831

..

1,230

563

203

26,424

1,120

2,100

2,123

1,424

44,790

18

16

21

19

Complete

Total compressors

and exhausters

Parts

lustry	Support R. Tree and Consultation Consultation		.963		196	38		Industry	annual design discours couldn.	196	33	TO SEC MANY	1968	3	
sub- vision b)		Quantity	Value	Quantity	Value	Enter- prises	Ent	sub-	15381	Quantity	Value	Quantity	Value	Enter- prises	Entries
0	Air compressors and exhausters	Number	£,000	Number	£,000	Number	Nur	he. 40	Fluid power equipment (e)		£'000	Number	£,000	Number	Number
ach	Reciprocating	080 3							Oil hydraulic equipment	200			14,959	58	63
	Portable			D. J Military A.	ed sortudes	el suretti	10		Pumps and motors]	0012	roughts.	8,938	52	55
	Complete				61.79				Control and ancillary valves						43
	Not exceeding 50 cu.ft.			122 3 3 3 3 3 3 3 3	a li oru sg. si	abanea sal			Actuators and cylinders				7,693	41	8
	per minute	******	290	12,317	561	14	1.		Accumulators		Me r		554	8	Freedo
	Exceeding 50 cu.ft. per				A PAGE TO SERVICE OF THE PAGE TO SERVICE OF T	ALL OF THE REAL PROPERTY.	1		Power packs		0.500/6)	$\begin{cases} 5,518 \\ \dots \end{cases}$	2,293 230	27	28
	minute	1,932	1,671	2,916	2,943	10	10		Other oil hydraulic equip-	}	6,502(f)		10 674	61	71
	Parts		357	19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1,985	25	2		ment and parts	1 St. 10	The Table	(02/20.	12,674	01	
	Stationary	2.5			Bib.	desci l			Pneumatic power equipment and		9/1 - 1	1 13			
	Complete				185				parts (including pneumatic motors, actuators, boosters, rams and			700	0.750	31	32
									accumulators)			100	6,752		- May 200
	Not exceeding 80 cu.ft. per minute	17,290	1,856	34,872	3,424	21	2:		Other fluid power equipment	J			4,357	41	41
	Exceeding 80 cu.ft. per			act pen	theap titue	Tuboga I			Total fluid power		0.500		58,450		
	minute, not exceeding 650 cu.ft. per minute		0.201	9 99 7	0.101	lautes ad			equipment		6,502		50,400		
	Exceeding 650 cu.ft. per	,	2,321	3,287	3,164	15	16		Other products	586,84	407	Fee 18 . 1 .	228	18	18
	minute	{ 275	1,106 1,647	391	2,409	8	8		Waste products	1 3 29		100		1 mart	1 2 2 2 2 2 2
	Parts		2,342		3,730	35	36		Scrap metals	Th.tons		Th. tons	200	Bellevia.	1238
	Rotary	916.11								21.4	133	31.4	227	86	102
		124.6							Iron and steel		37	17	1,573	1	A miles
	Portable, complete		,	305					Brass	3.6	453	5.7	393	} 83	100
	Not exceeding 50 cu.ft.	1,		3,303	100	5410			1 1 20 1 976 11		57	0.2	50	} 29	30
		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	4,868	3,303	122	5	5		Copper				and the second	66	75
	Exceeding 50 cu.ft. per minute		2,001)	10 944	11 470	1000000			Other scrap metal		116		514		
			4	10,844	11,478	9	10	9	Other waste products		135	79	33	13	13
	Stationary	1 mar 1		A STATE OF THE STA	The New Area	111111111111111111111111111111111111111			Pumps, valves and compressors		104		781	6	6
	Not exceeding 80 cu.ft.	Color In		A serious f	Marine Lot 17	de louis			erected and installed		184		101	000 000	
		••	1,547	29,564	1,495	12	12		Total		143,750	SA SA	275,211		
	Exceeding 80 cu.ft. per minute	10,200 0	855	5,757	2,983	18	20				10000			300 000	
	m 1			0,101	2,500	10	20	7	Sales in other indus tries (see Table 6)	-	29,797		47,898		
	Turbo-types, complete			Toylead 1823	101 44603 1					6		1.000	tenance and the	en Lander	Carrier L
	Geared types	216	309		639				Principal products o this industry sold b	y			Torrases :	al married	ani ke i
	Other types		434]	039	8	9		establishments in th		113,953		227,313	227	287
	Parts for rotary and turbo-					teodinas			industry						
	types air compressors and exhausters		9 991		4.010	0.1			(a) Data for 1963 and 1968 are	not strictly	y comparable	because of dif	ferences in	the comm	odity
		••	2,231	407189	4,210	34	40		1 1 '1 I in the two cor	1011008					
G	as compressors and exhausters excluding refrigerator					A STATE OF THE STA			(b) The number given is that of the sales shown are total	of the sub-di	vision of whi	ch the item is	rely sales by	y establi	shments

(c) Including hydraulic type pumps other than hydraulic accumulators and rams for 1963.

(d) Including hydraulic control valves for 1963.

(e) For 1963 described as 'Hydraulic machinery, not elsewhere specified, excluding hydraulic equipment for motor vehicles, aircraft, machine tools, pumps, hydraulic accumulators and rams, valves and presses and other pneumatic appliances not elsewhere specified'.

(f) So far as recorded separately.

(g) 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.

Other industrial valves and cocks

Total industrial valves and cocks

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

		1963			1968	
	Quantity	Value	Quantity	Value	Entries	Principal industries in which produced (a
Pumps (excluding hydraulic types (b)	Number	£,000	Numbe r	£'000	Number	
Kerbside petrol and oil measuring, complete and parts		1,243		751	14	63
Hand pumps (excluding kerbside petrol and oil measuring)				Addon a lea	adoeydrae Mark on book	
Complete	63,351	161 110	15,284	142 138	} 15	66,78,97
Parts		24		190	9	64,78
Mechanically driven pumps (excluding kerbside petrol and oil measuring, and pumps specifically designed for actuating hydraulic equipment) complete		100 p	200	od gamerasis v	**************************************	
Reciprocating	4,251	239	6,282	833	20	53,55,64,66
Centrifugal	••	148	J 9,202	000	20	33,33,04,00
With stuffing box)	ſ	5,886	1,443	24	55,61,64,66
Without stuffing box	}	3,468	15,040	993	13	53,55,62,63
Rotary		1,668		2,060	21	44,63,64,66
Other		2,935 {	5,487	975 877	31	(c)
Parts for mechanically driven pumps (excluding kerbside petrol and oil measuring, and pumps specifically designed for actuating hydraulic equipment)		4,485		2,787	69	55,63,64,66
Unclassified pumps (excluding hydraulic types)	•	360(b)	9,871	876	5	71,74,109
Total pumps (excluding hydraulic types)		14,841(b)		12,065		
Valves and cocks for the control of liquids, steam and gases excluding hydraulic control valves and inlet and exhaust valves for internal combustion ingines)		200,012		o de la composición del composición de la compos	* * * * * * * * * * * * * * * * * * * *	
Industrial						
Pneumatic control valves)	را	J 381,732	1,134] 05	01 00 00 01
Other				1,175	25	61,63,66,84
Wholly or mainly of brass and other copper alloys		7,153	8,547,736	5,437 1,745	} 50	48,66,70,97
Wholly or mainly of cast		,,100	31,328	821	} 29	62,64,70,97

65,330

7,153

1,400 980

12,886

43

45,48,64,97

TABLE 6 (continued)

1000	196	33		196	38	
Acceptance and the second of t	Quantity	Value	Quantity	Value	Entries	Principal industries in which produced (a)
compressors and exhausters		£,000	Numbe r	£'000	Number	apa roman hini
					Estimation	
ciprocating					901624	
Portable				1		
Complete						
Not exceeding 50 cu.ft. per minute			7,682	237	7	46,63,65,66
Exceeding 50 cu.ft. per minute			634	940	*	53,63,66
Parts				865	14	53,63,66
Stationary						
Complete						
Not exceeding 80 cu.ft. per minute		3,257(d)	2,975	269	9	58,63,66,70
Exceeding 80 cu.ft. per minute			C. GE	1,138	8	54,58,63,64
Parts		Toma da se		569	19	53,54,63,64
otary	E career de			Thankin and	relable as n	a langua (com
Portable, complete	de positione de		1 -1-2814	and the contract	y sol alten	politorical to
Stationary	MET DAME LANGE (NO.	pale s normaticos la militate tida al		2,449	9	53,58,63,71
Not exceeding 80 cu.ft. per minute	to -chemiumi			1 000	250	
Exceeding 80 cu.ft. per minute	La accesa en esta	and commit	2,513	1,154	5	63,64
urbo-types, complete			-]		2000	
Parts for rotary and turbo-		See	}	1,898	18	63,64,66,71
Types air compressors and exhausters		1,696(e)	J	· ·	9 764	
s compressors and exhausters xcluding refrigerator mpressors)	er out amplement	e estar inc	They to		1,591	
Complete		Malassias de		1,338	7	45,61,63,71
Parts	}	763		139	7	61,63,65
Total compressors and exhausters	Marco ess	5,716		10,996	1.030	

Continued on next page.

TABLE 6 (continued)

	15	963		19	68	
Topics of the second se	Quantity	Value	Quantity	Value	Entries	Principal industries in which produced (a)
		£'000		£'000	Number	
Fluid power equipment (f)						-
Oil hydraulic equipment						
Pumps and motors				4,134	23	64,74,80,84
Control and ancillary valves				1,420	21	64,71,79,82
Actuators and cylinders				1,049	10	58,60,62,82
Other oil hydraulic equip- ment and parts		1,972 {		4,313	44	63,71,82,84
Pneumatic power equipment and parts (including pneumatic motors, actuators, boosters,				619	11	61,63,66
rams and accumulators)				408	15	(c)
Other fluid power equipment	,		• ••	400	10	- (0)
Total fluid power equipment		1,972		11,943		of all page.
Pumps, valves and compressors erected and installed		115		6	*	
Total		29,797		47,898		

- (a) The references given are to the list of industries at the front of this report.
- (b) Including hydraulic type pumps other than hydraulic accumulators and rams for 1963.
- (c) Production is widely distributed.
- (d) Complete machines only.
- (e) Including parts for reciprocating pumps.
- (f) For 1963 described as hydraulic machinery not elsewhere specified, excluding hydraulic equipment for motor vehicles, aircraft, machine tools, pumps, hydraulic accumulators and rams, valves and presses and other pneumatic appliances not elsewhere specified.

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

G00"2 G00"2 Gunt 15 Gen	1963	1968
0.00 To 0.00 Salenda	Value	Value
Fures 1,287 8,076	£,000	£'000
Iron castings in the rough or machined	2,801	3,773
Non-ferrous metal manufactures		
Copper, brass and other copper alloys	551	457
A LIMIT DESCRIPTION OF THE PROPERTY OF THE PRO	73	240
Mechanical engineering	d stanta parat, b	
Metal-working machine tools	and plant ored	
Metal cutting, complete and parts		493
Other metal-working machine tools, complete and parts	257	216
Industrial engines		419
Gas turbines, complete and parts	1,062	2,354
Other turbines, complete and parts	147	990
Construction and earth-moving equipment, complete and parts	147	and medium!
Mechanical handling equipment		276
Hoists (hydraulic, mechanical and pneumatic)	517	
Other mechanical handling equipment, complete and parts	J	328
Space heating, ventilating and air-conditioning equipment, complete and parts	2,234	662
Food and drink processing and sterilising machinery, complete and parts	22	135
Miscellaneous (non-electrical) machinery		
Portable power tools, complete and parts	5,314	4,479
Garage equipment and plant	29	185
Chemical, petro-chemical and oil refining machinery and plant, complete and parts	239	296
Other miscellaneous machinery, complete and parts	4,057	2,241
Industrial (including process) plant and steelwork	farger optat	
Water treatment plant	260	558
Fabricated iron and steelwork	438	1,756
Other plant, complete and parts	2,784	5,973
General mechanical engineering		
Oil fuel burners (including other burners)	1,595	507
Other and unclassified engineering products	1,979	5,606
Scientific, industrial instruments and apparatus, complete and parts	2,213	2,546
Electrical engineering		
Electrical machinery, complete and parts	1,516	1,434
Other electrical engineering products, complete and parts	315	107
Shipbuilding, ship repairing and marine engineering	1,221	1,128
Motor vehicle and tractor manufacture, components and parts	324	1,773

Continued on next page.

TABLE 7 (continued)

Service And the subsequent of the service of the se	1963	1968
Turning of the state of the sta	Value	Value
2003	£'000	£'000
Engineers small tools and gauges	450	315
Miscellaneous metal manufactures	1,287	5,076
Other products	364	2,973
Work done		
Building and civil engineering work carried out in Great Britain including the erection of constructional steelwork and the erection and installation of air-conditioning, heating		Copper, And
and ventilating plant, but not of complete process plant	19	744
Machinery and plant erected and installed and other installation work, other than pumps, valves and compressors	or anida—Kin	936
Repair and jobbing work	3,810	8,123
Other work done on commission	1,122	2,040
Research and development work	384	638
Services rendered to other organisations (a)	174	351
Total value of goods sold without having been subjected to any manufacturing process (merchanted or factored)	11,179	18,428
Canteen takings	516	645
Total	49,253	79,201

(a) 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 of 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

Contraction (Contraction (Contr	1963		1968	
Gatestan for see in sendon-hand tennisment	Quantity	Cost	Quantity	Cost
aterials for use in production	Th.tons	£,000	Th.tons	£,000
Iron				
Pig iron, including refined pig iron and other irons for re-melting	28.5	671	34.2	779
Castings	29.4	3,102 616	41.4	5,960 734
Steel				
Ingots, blooms, billets, slabs (including sheet/plate fmill slabs and sheet bars)	1.0	64 35	3.3	297 85
Bars and rods (including wire rods), angles, shapes and sections, girders, beams, joists and pillars rolled (not fabricated), including tube rounds and squares	21.0	2,325	55.9	6,472
Plates, 3 mm. thick and over	7.0	405	12.8	886
Sheets under 3 mm.thick (including electrical sheets)	2.6	192	4.3	331
Hoop and strip (including tape of all thicknesses)	0.3	27 {	0.7	63 57
Forgings (except drop forgings)	4.8	737	6.9	1,478
Castings	15.2	3,331	26.9	6,271 1,499
Drop forgings	4.7	843 {	7.8	1,446 365
Iron and steel not elsewhere specified except finished parts, wire and scrap	d) knifer apiersgelb	telouboro i enoletese .	alifa tala a Banizulos .	Phenolis sepunent
Wrought tubes and fittings for wrought tubes (including welded, seamless, conduits, etc)	2.7	599 {	8.4	1,668 371
Other	2.3	725 {	3.8	1,263 488
Precision chain (eg transmission and timing)		20	nistretan	54
Springs, laminated and other types	om i redder	238	o villade ne	428
Steel wire and wire manufactures (excluding insulated wires and cables)	ta-percha, nt parta to	en and grant tropicación selection	rubner), bu But'exeludi Bers, plants	idoma preo idoma preo
Wire (single wire)		7		14
Wire manufactures (including wire cables and ropes and stranded wire of two or more ply)	n rodinal i	19	e to awas .	71
Ferro-alloys		222		549
Iron and steel scrap	bedingl to	561	g to ress .	763
Light metals and non-ferrous metals in all forms except finished parts, wire and scrap		176	bernton	maa 10
Aluminium and aluminium alloys	1.7	683 292	3015.79ni irus	2,487
Brass and other copper alloys (including nickel silver and cupro nickel, but excluding all other nickel alloys and cadmium copper) (a)	17.2	5,229 930	29.6	13,380 1,944
Copper (including cadmium copper) (b)	0.8	242 {	1.3	709 185
Lead and alloys of lead (excluding solder)	MENTAL COM ACCOUNT	25		28
Zinc and alloys of zinc	0.7	77	1.2	209
a resumporation foir . The labors and consument	Th.cwt.	l iol idau	Th.cwt.	er en islank
Tin the second of the second o	1.0	45	1.1	61

TABLE 10 (continued)

	1963		1968	
CHAIN CONTRACTOR CONTR	Quantity	Cost	Quantity	Cost
aterials for use in production (continued)		£,000		£'000
Solder, soft		6		63
Non-ferrous metal wire (single wire, not insulated)		32		14
Non-ferrous metal scrap		193		611
Glass in all forms (including finished parts)		148		138
General chemicals (c)				Losi
Inorganic (including inorganic gases)	7	smala are	ling (smooth)	83
Organic (including organic gases)		102 {		28
Other (eg mixtures of inorganic and organic chemicals)		102	Landing	37
the state of the s	on showing	ades applicati	M. interes	THAT I'M
When a fine to the major the service of the service	Th.gal.	155	Th.gal.	000
Paint and varnish (including lacquers and stains)	98.2	157 33	144	239 38
Synthetic resins and plastics materials (excluding	in rain		lath piste	hon molf
leathercloth and reinforced plastics)			m	
Polyethylene and polypropylene and copolymers: sheet, rod, film, profile shapes and monofilament			Th.cwt.	92
Polyvinyl chloride (including copolymers) plasticised and unplasticised sheet, film, rod, tube, profile			The goal	
shapes and foam		121	89.00	110
Phenolics and allied products: resins (the net resin content), solutions, emulsions, dispersions, moulding and extrusion compounds		121	do Ago bee gatos long	3
Thermosetting polyesters, including epoxide resins	in Bigunnu	not replace	T has saide	Wrongths.
(the net resin content excluding filler), and resin glass fibre mixtures				115
Refractory materials		197		155
Manufactures wholly or mainly of rubber (including synthetic rubber), balata and gutta-percha, including sheeting, but excluding replacement parts for firms'	esti kuri i kur		es heimin	
own machinery, plant, vehicles, etc		757	tealde	3,411
Timber	Th.stds.		Th.stds.	
Softwood, sawn or planed but not further prepared or { manufactured	0.4	60 13	} 0.5	74
See	Th.cu.ft.		Th.cu.ft.	
Hardwood, sawn or planed, but not further prepared or manufactured	17.0	23 {	8.1	13
or manufactured	Th 64	ton control	m	8
Plywood, including blockboard, laminboard and	Th.sq.ft.	8	Th.sq.ft.	
battenboard		2	} 163	16
Asbestos in all forms (including finished parts)	20030 110 B	148	si liking	186
Other thermal insulating materials		14	a au inta a	13
Insulating wires, cables, strips and strands	9	272	···	365
Bolts, rivets, nuts and washers, screws, nails, tacks, etc	robles and	1,379	lo equite	3,323
Machinery and plant bought for installation and erection		1,122		2,129

8001 CDQEstablishments amplaying	1963		1968	
Quantity Cust Quantity Cost	Quantity	Cost	Quantity	Cost
Materials for use in production (continued)		£'000	93-2181103	£,000
Purchased components for incorporation in firms' own products				189al t
Ball and roller bearings and parts thereof	but) book	530	gitode or	1,248
Electric motors	23093000	1 20002		7779
Of less than 1 h.p.		900		2,150
Of 1 h.p. and over		3,043	10 10 0488	3,100
boom, sail	ing (includ	carbag and b	Number	on audito
Internal combustion engines	dostanen s	1,560	18,476	3,283
Industrial valves		787	me i ne de co	2,304
Gears and gear wheels of metal		441) winite	967
Pumps		1,012		1,778
Measuring instruments and gauges and parts		1,012		
	AND A GALLEY MADE	ors regurn		ont Perol
Industrial process measuring and control instruments and equipment		392		1,402
Other	Baox ni zo	1,057	To Logic land	989
Plastic goods moulded and fabricated	ST03.10109	173	You knie to his	758
Other components not elsewhere specified (excluding	18	sens muclon	se hold we	d ben sta
those of rubber and asbestos)		11,028		23,829
CID. 982, 6 HU not technically by the 1969-	Th.gal.		Th.gal.	(465)
			809 Th.cwt.	244
Lubricating oils and greases (including cutting oils and emulsions)	363	115	2.6	19 61
Replacement parts for firms' own machinery, plant and vehicles, and accessories and consumable tools bought as replacement	rvicus, e d 1988 (s 25, og mare	ar by large	r slow	ashlo IIA
Tyres and other spare parts for firms' own road goods]	[
vehicles	}	1,790	W. 101.008	82
Other Sab	J	L	regisad	2,808
All other materials for use in production		6,379	1405 3) 10	12,641
Packaging materials		and the second second second		plenticke particular
Paper and board	liosga Joo	ese isqqoo		et and that
Boxes, cartons, drums and canisters (with or without metal ends) of paper and cardboard	leoisedo	174	a lada Digital na dinda da din ba	287
Fibreboard packing cases	nama garg	Ther past	Illas plate	28
Wrapping and packing paper (including paper coated with plastics and any laminates incorporating paper but not	and which	file, as		dir kelisi
metal) Other packaging materials of paper and paperboard	}	82	935	91
(including moulded pulp units and labels, but excluding bags, multiwall paper sacks and paper and board for converting into packaging materials)		l	3,027	32
Packaging materials of metal (other than aluminium) including crown corks, wire, foil and any laminates incorporating foil, foil labels and closures,	describers	MET INC. AL		of est
tensional steel strappings, etc, but excluding cans, boxes, barrels, kegs and drums		(d)		20

TABLE 10 (continued)

SOLUTION OF THE PROPERTY OF TH		963	1968	
	Quantity	Cost	Quantity	Cost
Packaging materials (continued)	Upwant sao	£,000	q or sea t	£,000
Timber	ni zajaz	odition) log	a la énoque o	beneder of
Containers wholly or mainly of wood (including plywood boxes and drums) baskets and wickerwork crates	100 VIII - 11.2 2.0	316	ed relies	619
			Th.cu.ft.	
Timber (sawn or planed) for manufacture into packing cases, etc		213 {	402	206 82
Other wood products for packaging (including wood wool, but excluding plywood for manufacture into packing cases)		(d)	er) Jesudson	26
All other packaging materials	••	86	889197.1A	117
Fuel and electricity (e)	Th.tons	fales by all	Th. tons	is amoly
Coal	32.0	183	29.4	205
Coke (including screenings) and manufactured fuel	35.0	399	30.8	411
Derv fuel and motor spirit for use in road vehicles	Th.gal. 841	189 {	Th.gal. 1,599	464 71
Other liquid fuels (including creosote/pitch mixtures, etc and liquified petroleum gases)	7,499	349 49	} 10,571	642
	Th.therms	(tolsefae)	Th.therms	io seedi
Gas	3,677	194	5,220	412
uas		92	••	54
	Th.kWh	at Lucespeak	Th.kWh	ni shekatik
Electricity	229,599	1,040 324	291,335	2,296 396
All other fuels	ys sixtificen	(f)	t parts for	205
Total cost of materials and fuel		59,999	drink ora wadan b	127,343
Goods purchased for merchanting		8,714		15,162
Canteen purchases		502		728
Total cost of purchases	Alaca Costora	69,215	. Elektricas	143,233

⁽a) For 1963 cadmium copper was not specifically excluded.

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

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

CONTRACTOR (II) CONTRACTOR CONTRA	Unit	1963	1968
Average number mainly employed on transport	No.	373	537
Transport costs			gare for the co
Wages and salaries	£,000	273	573
Derv fuel and motor spirit	"	189	535
Tyres and other spare parts for road goods vehicles	"		82
Payments to other organisations for transport	"		1,670
Costs of operating road goods vehicles	0.8		education of
Insurance	"	22	56
Vehicle licences	п	17	51
Depreciation	"	130	292
Payments to other organisations for repairs and maintenance	"	63	119
Total	п	2,437(a)	4,438

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

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

tracked as 30 per cent, or more or the total office of	Amounts	Amounts payable		
se the returns was classes for to the Depart Montanto	1963	1968		
Repairs and maintenance to	£,000	£'000		
Buildings	366	601		
Road goods vehicles	63	119		
Plant, machinery and other capital equipment	498	1,065		
Insurance, licensing and depreciation of road goods vehicles (b)	170	399		
Rates, excluding water rates	915	1,971		
Hire of plant and machinery	81	382		
Postage, telephone, telegrams, cables and telex (c)	935	1,729		
Total	3,027	6,267		

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

⁽b) For 1963 'Cadmium copper'was not specifically included but 'Blister' was excluded.

⁽c) For 1963 described as 'Heavy chemicals'.

⁽d) Included in 'All other packaging materials' for 1963.

⁽e) The total quantity of electricity generated in establishments employing 25 or more persons in this industry was 5,912 Th.kWh in 1968 and 2,557 Th.kWh in 1963.

⁽f) Not recorded separately for 1963.

⁽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)	1.4	0.8
May	1.0	0.3
June	3.1	2.1
July	3.1	3.8
August	2.4	0.7
September	8.0	7.5
October	3.5	1.9
November	3.5	1.4
December	46.6	53.8
1969		
January	2.4	4.4
February	0.3	0.7
March	22.6	21.9
April (b)	2.1	0.7
	100	100

⁽a) From 6 April.

⁽b) To 5 April.