
Off-Highway Research

The Construction Equipment Industry in EUROPE

Equipment Analysis

ROUGH TERRAIN LIFT TRUCKS UNITED KINGDOM

October 2010



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Equipment Analysis

Rough Terrain Lift Trucks

United Kingdom

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INTRODUCTION

This report analyses the UK market for rough terrain lift trucks (RTLTs), and is an update of the subject which was last covered in the European Service in October 2006. It examines the supply of domestic manufacturers and importers, assesses the trends in the market and the factors affecting its development, and forecasts the main features of demand in the short to medium term.

The report covers the agricultural, industrial and construction sectors of the market. The rough terrain lift truck is one of the few products that are active in all three sectors, which is one of the prime reasons for its increasing popularity over the last two decades.

The rough terrain lift truck is the generic term given to machines that were originally developed by Matbro in the 1940s, which in the 1960s evolved into the agricultural tractor skid unit, with two large drive wheels to the front and reversed operator and transmission with a vertical forklift mast attached to the front. This machine is referred to as the **masted** rough terrain lift truck throughout this report.

During the 1970s a new materials handling machine was developed based upon the original rough terrain lift truck but with a telescopic boom replacing the vertical mast, and sold with a wide variety of attachments. This machine is referred to as the **telescopic** type or 'telehandler' in this report, and resulted in moving the market from a totally rough terrain **forklift** application to a rough terrain **materials handling** function.

The versatility of the rough terrain lift truck in both its forms has allowed suppliers to expand the market without directly competing with any other types of materials handling machines, thereby allowing relatively small companies to compete and prosper in the highly competitive agricultural and construction markets. However, their success in the 1990s attracted the interest of larger multinational companies, which naturally sharply increased the competitive nature of the industry.

The findings presented in this report are based on Off-Highway Research's existing database, and on information collected during an extensive field interview programme which was undertaken in July and August 2010 with all major domestic manufacturers and importers.

SUMMARY

Table 1. UK: Statistical Summary of Rough Terrain Lift Trucks, 2009

No. of Manufacturers	2
Market Leader	JCB
Production 2009 (Units)	4,615
Domestic Sales 2009 (Units)	
– Telescopic	3,923
– Masted	102
Importers' Penetration (%)	39
Population (Units)	38,000
Sales Forecast 2014 (Units)	5,200

Source: Off-Highway Research

Since the publication of Off-Highway Research's last report on the subject in 2006, there have been a significant number of changes in the market. The number of manufacturers has declined from three to one, with Terex ending production of its specialist articulated model in Coventry and Redrock entering receivership in October 2009. This now leaves just one domestic manufacturer, albeit a leading exponent in the sector, JCB.

The constant evolution of the sector has seen new entrants enter the market, namely Liebherr and Kramer in the last three years, although it continues to be dominated by just two companies, JCB and Manitou, as is the case in most markets worldwide.

UK sales have collapsed in the last two years and but for a strong agricultural sector, volumes would have been negligible. Sales in 2009 were less than half the volume in 2007, and the construction sector, which traditionally accounts for the majority of sales, accounted for only 25 per cent of overall demand last year. The strong agricultural market, on the other hand, has maintained an annual sales level of approximately 3,000 units for the last five years.

The loss of Terex and Redrock has not seriously affected domestic production levels, but the worldwide recession certainly has. Production volumes in 2009 were under 5,000 machines, whereas two years earlier they were approximately 15,000 units. Production will recover significantly in 2010, but the levels recorded in 2007 are unlikely to be seen again in the near future.

JCB has remained the market leader throughout the period under review, and its status has never been seriously challenged. The UK telehandler market is now one of the most competitive sectors in the industry with more than 15 suppliers, whilst it is unlikely that this number will increase, it is quite possible that one or two of the smaller suppliers will leave the market in the next few years.

CONSTRUCTION AND AGRICULTURAL ACTIVITY

Table 2. United Kingdom: Construction Output, 2003-2009 (£ Million, Annual % Change, 2005 Prices)

	2003	2004	2005	2006	2007	2008	2009
Public Housing	2,032	2,628	2,680	3,442	4,228	3,966	3,810
Private Housing	13,330	16,818	18,383	19,572	20,059	16,268	10,780
Total Housing	15,362	19,446	21,063	23,104	24,287	20,234	14,590
Infrastructure	7,363	6,491	6,499	6,533	6,956	7,735	8,149
Public Non-Infrastructure	8,875	10,516	10,191	9,939	10,386	12,287	13,912
Private Industrial	3,644	3,978	4,291	4,887	5,023	4,124	2,793
Private Commercial	15,109	16,807	17,369	20,139	23,169	23,448	16,291
Total Non-Residential Building	34,991	37,592	38,349	41,409	45,535	47,595	40,947
Total New Work	50,353	57,238	59,412	64,513	69,822	67,829	55,537
Public Housing R&M	7,451	8,302	8,598	8,864	8,963	9,641	9,484
Public Housing R&M	13,864	14,927	15,339	15,766	16,930	18,324	16,393
Public Non-Residential R&M	7,930	8,015	8,939	8,779	8,313	9,571	9,472
Private Non-Residential R&M	13,686	13,881	14,718	15,648	17,957	18,218	15,807
Total R&M	42,931	45,125	47,594	49,058	52,164	55,755	51,156
Total All Work	93,284	102,363	107,006	113,571	121,985	123,584	106,692

Source: Official Statistics

The two sectors that are of most importance to the suppliers of construction equipment are housing and infrastructure. House building peaked in 2007, and by 2009 the volume had fallen by a half, as a result of the lack of credit, the collapse of selling prices and the effect of the recession on employment. New private housing work in 2009 was 28 per cent lower compared with the previous 12 months, but there was some good news for suppliers in that towards the end of the year, the growth was positive, giving hope for a better year in 2010. New work in the public housing sector in 2009 was one per cent higher (albeit on a small base figure) compared with the previous 12 months, and with significant growth in the sector as the year progressed. They are relatively small improvements, but after the wretched level of activity in 2009, any improvement is most welcome.

New infrastructure output in 2009 was 10 per cent higher compared with the previous 12 months, with again most of the growth coming towards the end of year, giving signs that the recession was finally over and that the slow start to recovery had begun. Other public construction work, such as the renovation of thousands of schools, improvements to hospitals and the building of more prisons, was actually on a growth trend from 2006 onwards. It has risen in importance, from 8.8 to 13.0 per cent of the total in that period.

After the events of 2008, there has been much discussion of the effects of recession on construction, and of when matters might improve. After the headline news in September 2009 that the construction recession was officially over because construction output had risen in the third quarter of 2009, the final quarter of 2009 saw it fall once again, albeit by only one per cent. This meant that in overall terms

the total volume of construction output in 2009 fell by 11 per cent compared with the previous 12 month period. It also meant that output was at its lowest level since 2004.

The level of new work in 2009 was 19 per cent lower than in the corresponding period of 2008, but at least output grew in the final quarter, giving some hope that 2010 will see a significant improvement. The total volume of repair and maintenance work fell by eight per cent in 2009 compared with the previous 12 months, but here the news was not as promising, as output was still falling at the end of the year and the outlook for 2010 is not particularly promising.

The house-building sector's recovery so important to the future of the telescopic handler, has improved following the harsh winter at the beginning of this year, with registrations for new homes in the month of February up by 73 per cent (to 9,556) compared to the previous year (5,526). Applications to build new homes during the three months December 2009 to February 2010 were up by 66 per cent to 24,105, compared to 14,537 registrations for the same period last year. The rate of recovery dipped in January as the extreme weather conditions impacted on registrations, but the private sector now appears to show the first signs of recovery.

NHBC statistics for the three months to the end of February 2010 also show that the recovery is largely driven by the private sector, which was most affected by the recession:

- Private sector applications at 16,669 for the three months to February 2010, were up 110 per cent when compared with the same period last year (7,931).
- Public sector figures for the three months to the end of February were 7,436, 13 per cent higher than the same period a year ago (6,606).

As will be seen in the main body of this report, the agricultural sector has largely sustained the rough terrain lift truck market over the last couple of years, and it is important for all suppliers that the agricultural sector should remain strong whilst the construction sector recovers from the worst of the recession.

Table 3. UK Agriculture: Output and Income at Current Prices, 1998-2009 (£ Million)

	Average 1998-2000	2007	2008	2009
Cereals	1,658	1,949	3,153	2,353
– Wheat	1,139	1,325	2,245	2,590
– Barley	470	555	817	687
Industrial Crops	777	769	1,164	1,108
– Oilseed Rape	199	422	618	475
Forage Plants	76	106	110	128
Vegetables	1,619	1,848	1,903	1,933
Potatoes	636	684	767	644
Fruit	249	467	545	571
Other Crops	40	43	45	46
Livestock	4,460	5,231	6,576	7,140
– Cattle	1,097	1,622	2,068	2,200
– Pigs	822	736	865	1,015
– Sheep	608	641	798	962
– Poultry	1,320	1,249	1,578	1,563
– Other Animals	150	183	190	189
Livestock Products	2,914	3,286	4,019	3,693
Other Agricultural Activities	684	680	795	844
Inseparable Non-Agricultural Activities	447	771	812	809
Gross Output (Basic Prices)	15,721	15,895	19,946	19,305
Total Subsidies (Less Taxes)	2,162	59	57	37
Total Output (Market Prices)	13,559	15,835	19,899	19,268

Source: DEFRA

The above table shows that while agricultural output fell slightly in 2009 it was still at very healthy levels and well above the average over the last decade. This is good news for the rough terrain lift truck sector, as it ensures that the agricultural sector will remain strong until the construction sector recovers.

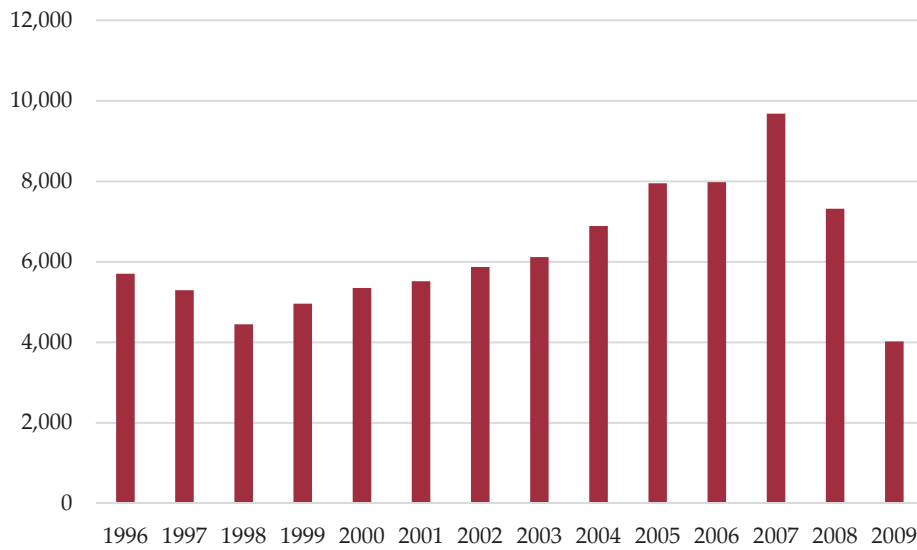
MARKET SIZE AND TRENDS

Table 4. UK: Sales of Rough Terrain Lift Trucks, 1996-2009

Year	Units
1996	5,705
1997	5,295
1998	4,450
1999	4,960
2000	5,350
2001	5,520
2002	5,873
2003	6,120
2004	6,890
2005	7,950
2006	7,980
2007	9,680
2008	7,320
2009	4,025

Source: Off-Highway Research

Chart 1. UK: Sales of Rough Terrain Lift Trucks, 1996-2009



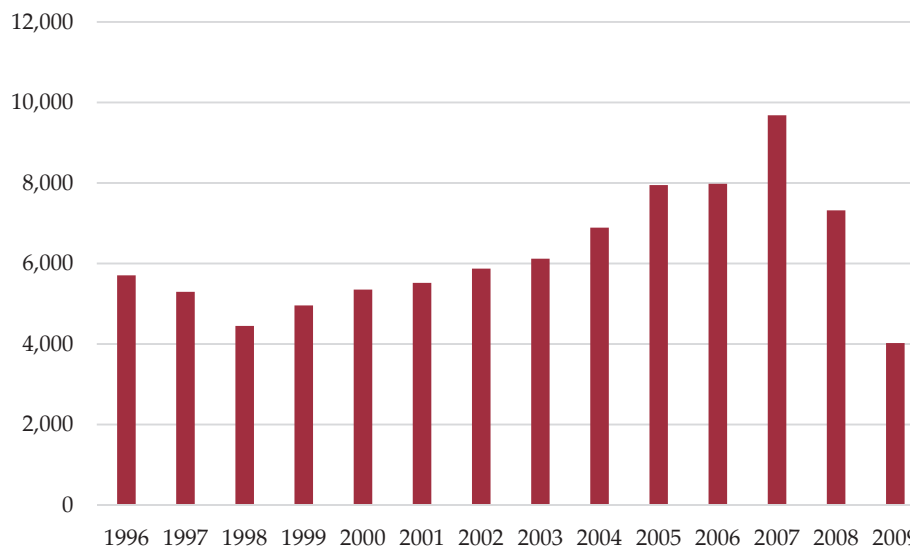
Source: Off-Highway Research

Table 5. UK: Sales of Rough Terrain Lift Trucks by Type, 1996-2009

	Telescopic		Masted		Total
	Units	%	Units	%	Units
1996	5,185	91	520	9	5,705
1997	4,750	90	545	10	5,295
1998	3,900	88	550	12	4,450
1999	4,435	89	525	11	4,960
2000	4,775	89	575	11	5,350
2001	5,320	96	200	4	5,520
2002	5,638	96	235	4	5,873
2003	5,880	96	240	4	6,120
2004	6,600	96	290	4	6,890
2005	7,625	96	325	4	7,950
2006	7,700	96	280	4	7,980
2007	9,185	95	495	5	9,680
2008	6,945	95	375	5	7,320
2009	3,923	98	102	2	4,025

Source: Off-Highway Research

Chart 2. UK: Sales of Rough Terrain Lift Trucks by Type, 1996-2009



Source: Off-Highway Research

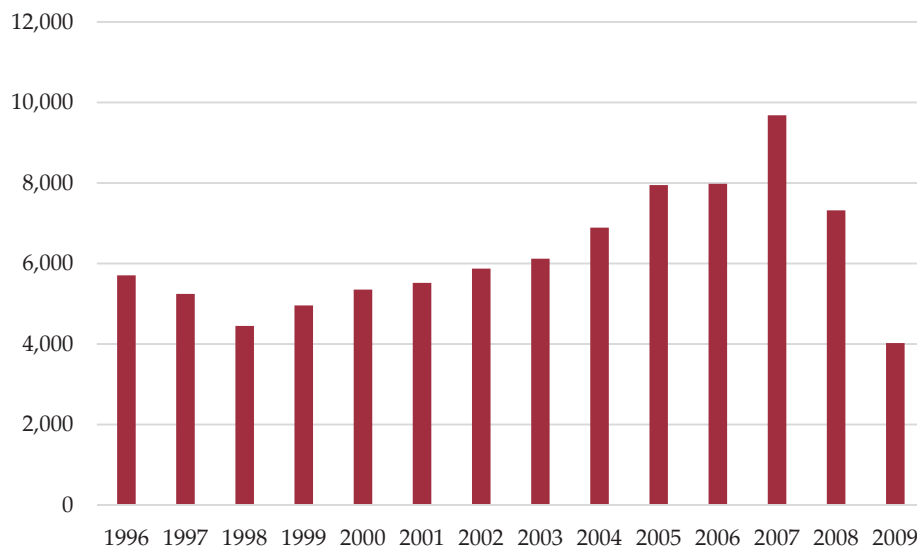
The last four years have seen the rapid growth in **agricultural** sales slow, after the impetus given by the compensation handouts to farmers following the foot and mouth outbreak of 2001. This resulted in some farmers leaving the industry all together, while the more enlightened of them seized the opportunity to increasingly mechanise new farms, with the major beneficiary of this move being the telescopic handler. Allied to strong market prices for the main cereal crops, the farming industry has enjoyed a buoyant period after a desperate time a decade ago.

Table 6. UK: Sales of Rough Terrain Lift Trucks by Sector, 1996-2009

	Agricultural		Construction & Industrial		Total Units
	Units	%	Units	%	
1996	2,955	52	2,750	48	5,705
1997	2,500	48	2,745	52	5,295
1998	1,400	31	3,050	69	4,450
1999	1,650	33	3,310	67	4,960
2000	2,200	42	3,150	58	5,350
2001	2,200	40	3,320	60	5,520
2002	2,730	46	3,143	54	5,873
2003	2,750	45	3,370	55	6,120
2004	2,800	41	4,090	59	6,890
2005	2,900	36	5,050	64	7,950
2006	2,950	37	5,030	63	7,980
2007	3,000	31	6,680	69	9,680
2008	3,100	42	4,220	58	7,320
2009	3,000	75	1,025	25	4,025

Source: Off-Highway Research

Chart 3. UK: Sales of Rough Terrain Lift Trucks by Sector, 1996-2009



Source: Off-Highway Research

The tractor loader is a common sight on many farms as farmers prolong the life of their older tractors by adding a loader attachment to undertake many basic duties. However, the advantage of the telescopic rough terrain lift truck is its versatility and the greater number of jobs it is able to undertake. Its reach is sufficient to stack bales of straw, while it can also load sugar beet or clean out farm buildings. The advantages of the machine over the tractor/loader are very significant and the richer, larger farmers have become increasingly aware of this and have the resources to purchase new rough terrain lift trucks.

The volume of sales in the agricultural sector traditionally is not as large as in the construction market. However, smaller farms are disappearing and as a result larger units are emerging, and these represent ideal customers for the telescopic handler.

The traditional machine used in the agricultural sector had a lift capacity of around 2.5 tonnes and a lift height of 6-7 metres. The lift height required is governed by the average height of buildings on most farms and 6-7 metres is more than sufficient, although on some dairy farms a smaller machine is required to enable it to enter buildings to clear out the muck. However, the last few years have seen the 3.0 tonne capacity machine increasingly replace the 2.5 tonne class. This is partly due to the launches of new, larger capacity machines by manufacturers, but also because of farmers following the trend in the tractor market towards more powerful machines. The extra lift capacity is of far more importance than lift height, and the next few years are likely to see the launch of machines with a similar reach but with increased capacity.

Manufacturers have also recently introduced what are termed 'compact' machines for use inside the various buildings that are found on many farms. These machines often do either work previously undertaken by machines such as the skid-steer loader, or work that was previously undertaken manually. The need for farms to become more efficient has seen the number of agricultural workers decline as the use of mechanisation increases.

The agricultural telescopic handler will typically have a turbocharged engine to provide the required horsepower to power the hydraulics for its many attachments. The currently favoured engine of 105 horsepower is likely to increase towards one of 125 horsepower. The boom will have a two-stage design as the more expensive three stages are not usually required with an average lift of 6-7 metres. The cab also plays an important role in a farmer's purchasing decision, for he is used to comfort in his tractor or combine harvester, and has come to expect a similar level of comfort in his rough terrain lift truck.

Cereal farmers have been in the vanguard of buying telescopic handlers, as their budgets tend to be larger than those of the livestock farmers. They usually opt for heights of 7 metres, as this size allows them to deal with most piles of grain. A tendency to keep produce on the farm rather than consigning it directly to the co-op store has meant that handlers now need buckets for grain and the buyer has to consider the dig-out force, that is to say the strength of the torque converter under load. As a result, he may well opt for 3.0 or 3.5 tonnes of lift capacity. Grain loading also shows off crab steering at its best, in that a telescopic handler can come out of difficult corners far better than an agricultural tractor.

The masted rough terrain lift truck is found in some agricultural applications but volumes are now very low and the telescopic machine is totally dominant in this sector.

In the **construction** sector, the situation is more diverse with the two leading suppliers seeking to establish an industry norm around their own product ranges.

The general purpose telescopic handler is one of 3 tonnes' capacity and with a lift reach of 9-10 metres. This size of machine can undertake the majority of general tasks and is much favoured by the huge plant hire sector, and is a slight increase on the 7 metre standard at the beginning of the decade. The 9 metre lift machine is the largest machine of its type before stabilisers, and the extra cost involved, became standard.

The housebuilding sector, which initially utilised the general purpose machine, has now spawned the most popular size of machine sold. The original minimum requirement was a machine with a minimum lift reach of 10.5 metres, but over the last five years this has grown to one of 13-14 metres. However, the growing need of housebuilders to build a mix of houses on a new estate has meant that a growing number of telescopic machines up to 17 metres are now used. While the 13-14 metre machine is considered to be the most popular model in today's small construction market, the 10 metre and 17 metre machines are equally popular.

The third defined sector is the specialist high lift sector, where machines with a 16-17 metre lift is the norm, but with the upper limit not being determined. This sector will also include machines where the boom rotates through 360° as well as extending the lift structure. These machines, known as 'rotos', are utilised in urban areas where height, not load, is the important factor.

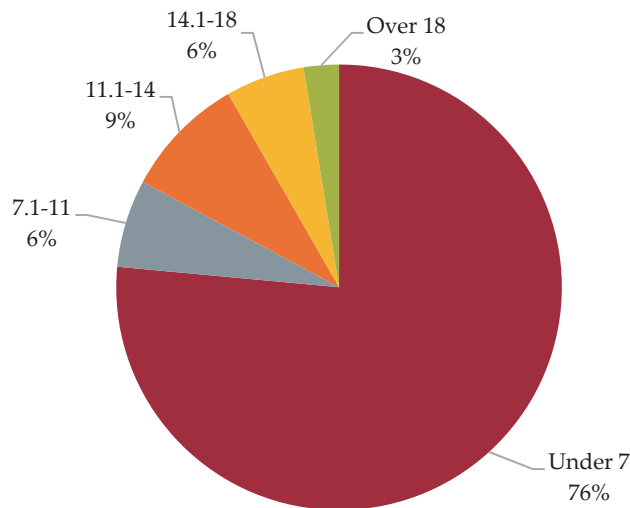
The volumes are nevertheless quite small and while more manufacturers are expected to launch similar machines, the product is seen as a specialist niche machine that will have limited appeal in the plant hire dominated market. The 'roto' market, that includes machines with up to 25 metre lift, accounts for approximately 100 units of the total market. This type of machine is much more popular in the Mediterranean countries.

Table 7. UK: Sales of Telescopic Handlers by Working Height, 2009

Maximum Lift (Metres)	Units	%
Under 7	3,000	76
7.1-11	250	6
11.1-14	348	9
14.1-18	225	6
Over 18	100	1
Total	3,923	100

Source: Off-Highway Research

Chart 4. UK: Sales of Telescopic Handlers by Working Height, 2009



Source: Off-Highway Research

The major customer in the construction sector is the plant hirer, and the purchase price of the machine plays a very important role in his decision making. The rental company accounts for approximately 99 per cent of all non-agricultural sales in the country. This is why the most popular machines are those that offer the highest specification for the lowest price.

The decline in the role of the masted machine has been in process for the last 10 years, but this does not signal its ultimate demise. Demand for the cheaper, reliable and simple rough terrain lift trucks will always favour the masted variety, while certain applications, for example the timber industry, are not suitable for the telescopic machine.

The masted machine currently accounts for around two per cent of the whole market, and while the volumes are currently at their lowest level in over a decade, its share should recover slightly when the general economic conditions improve. The volume of masted machines is governed by when plant hire companies, the major owners, replenish their fleets.

The specification of the telescopic rough terrain lift truck is now firmly established with the side engine machine predominant in the European market. Future development work is likely to concentrate on the cab and the type of controls used, but also seek to increase reach capacity whilst maintaining a similar or smaller footprint for the machine. This is a similar situation seen in the crane market that has led to the compact crane becoming increasingly popular. The dominance of the construction sector and the hire market within it has seen demand for an integration of similar methods of controls, as used in the hydraulic excavator market. The last couple of years have seen both JCB and Manitou introduce a number of compact machines.

The agricultural sector demands the highest specification of rough terrain lift truck in Europe, which unlike its plant hire counterparts is willing to pay for the privilege. For example, the cab has the highest specification with air conditioning as standard. It will have a 125 horsepower engine, 6-speed powershift transmission and a 40 kmph speed capability. It will have boom suspension, hydraulic locking, pick up hitch and trailer braking, as well as a single joystick control lever to operate the boom.

The telescopic machine is not a mature sector like its masted counterpart, and development of the machine is continuing. However, the overriding design input for all future models must be to retain the simplicity in construction that ensures cost effectiveness in operation.

PRODUCTION

The 1980s were described as a period of unlimited growth in UK production, while the 1990s represented a decade of fluctuating volumes and major changes in the number of manufacturers. This decade has seen three companies leave the market at a time of both the highest and lowest production volumes seen in the last 20 years.

Table 8. UK: Total Production of Rough Terrain Lift Trucks by Manufacturer, 2005-2009

	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
JCB	11,385	70	13,110	86	15,450	97	11,200	99	4,615	100
Terex	150	1	100	1	100	1	70	1	-	-
Caterpillar	4,800	29	2,000	13	300	2	-	-	-	-
Redrock	40	-	30	-	30	-	20	-	-	-
Total	16,374	100	15,240	100	15,880	100	11,290	100	4,615	100

Source: Off-Highway Research

Table 9. UK: Production of Telescopic Handlers by Manufacturer, 2005-2009

	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
JCB	10,550	68	12,300	85	14,500	97	10,500	99	4,500	100
Terex	150	1	100	1	100	1	70	1	-	-
Caterpillar	4,800	31	2,000	14	300	2	-	-	-	-
Redrock	40	-	30	-	30	-	20	-	-	-
Total	15,540	100	14,430	100	14,930	100	10,590	100	4,500	100

Source: Off-Highway Research

Table 10. UK: Production of Masted Rough Terrain Lift Trucks By Manufacturer, 2005-2009

	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
JCB	835	100	810	100	950	100	700	100	115	100
Total	835	100	810	100	950	100	700	100	115	100

Source: Off-Highway Research

JCB is the leading UK manufacturer of telescopic handlers. Its range of larger standard telescopic models is produced at the company's main factory in Rocester, while the masted machines are built in Cheadle, about 15 kilometres away. The decision to build the product at separate sites was taken purely for logistical reasons, and the company still sees the masted machine as making a significant contribution to its overall market presence. However, the volumes and future development are likely to highlight the growing importance of the telescopic variety. The compact telescopic models are built at the Cheadle compact equipment factory, whilst the articulated telescopic models are built at the Cheadle Earthmover factory.

The telescopic product range has been enlarged since 2000 from 12 to 30 models, although the number of masted models has remained unaltered. The current range is not yet complete but the existing models enable the company to compete in all the volume sectors. The company makes fourteen models purely for the construction sector, while nine models are designated as 'Farm Specials'.

The JCB telescopic model range is typically known as the Loadall, although in some European countries other derivations of the name are used, and is a totally separate division within the company, complete with its own marketing organisation. Variations of its European models are also available for the North American market, which demands a different type of machine from that sold in Europe. In addition, agricultural versions of the models are available. These models are usually designated with the suffix 'S' signifying that the model has a turbocharged engine, thereby giving the necessary extra horsepower required to drive the different attachments needed in the agricultural sector.

The product range varies by market but is intended to cover the whole market, with the exception of the rotary types, and there are separate ranges for construction and farming. The telehandlers were the first agricultural machines to receive the JCB 444 engine, after its introduction in the backhoe loaders. The introduction of the new engine has gone very smoothly and has proven to be a valuable additional marketing tool for the company when promoting its range.

Caterpillar began production at Desford in 1995 after an initial working relationship with DJI that proved unsatisfactory. Over the next 10 years volumes fluctuated before the decision was taken to enter an agreement with JLG. Production of machines at Desford had proved difficult to meet the economies of scale enjoyed by its two leading rivals, and by entering the agreement with JLG it is believed that the competitiveness needed could be obtained.

Volumes were increased in 2005 as production was ramped up prior to the transfer of production to the JLG factory in Belgium at the end of 2005. Production was phased out throughout 2006 and a few remaining models were built in the first quarter of 2007. The ending of production was a surprise to many in the industry, but is indicative of the increasing competitiveness in the sector.

Terex is a relatively new name to the UK rough terrain lift truck sector, but the historical roots of the company are long. In 1999, Terex purchased Powerscreen and in doing so acquired the remnants of the Matbro company that had not been bought by John Deere. Production of the two model telescopic range continued at Tetbury, the former home of Matbro until 2001, when production transferred to Warwick, the manufacturing base of Benford, another company within the Terex group.

Production of the current three model range was moved from Warwick to the new Terex Compact equipment factory in Coventry, approximately 25 kilometres away, at the end of 2003. However, the product did not fit easily within the Coventry operations and volumes were limited and so production was ended in 2008. Now the main centre of Terex telehandler production is in Italy.

Redrock was the newest name in the UK rough terrain lift truck sector, even though it has been established over 25 years as an agricultural engineering company. The company was formed by Mr Samuel Hughes and employs 95 people in its small operation in Northern Ireland. Its main role is as a producer and retailer of machine attachments, such as shear grabs, with which it has established a presence in many European markets.

The company launched its first telescopic machine in late 2000 with the TH300. The other three models were launched at the Smithfield agricultural show in London in November 2002, but did not represent the standard telescopic rough terrain lift truck sold in most agricultural markets. The product was based more on a wheeled loader design, with a single telescopic arm replacing the lift arms of a wheeled loader. The product was geared towards the large agricultural contractor, a sector once dominated by the now defunct Matbro Teleram.

In October 2009, the company called in the administrators, which was something of a surprise as it had earlier that year launched its TH320 telehandler, but the downturn in demand took its toll. In March 2010 Redrock Engineering Ltd was bought by Fermanagh-based Steel Solutions, but the telehandler business was not included in the rescue and has since been disbanded.

COMPONENT SOURCING

The last few years have seen many changes in the structure of domestic production market. JCB's range is the only product now being built in the country and while it underwent a major transformation six years ago, recently the major changes have been restricted to the introduction of the JCB 444 engine

JCB is the leading domestic manufacturer and uses a high proportion of in-house components. The model range now incorporates the new JCB diesel engine where once the Perkins engine was standard, but a Perkins engine is still fitted to the smallest compact model. The smallest model is a hydrostatic model and so has a Bosch Rexroth transmission, rather than the standard JCB transmission that is fitted to the rest of the product range.

Table 11. UK: Component Sourcing for Rough Terrain Lift Trucks, 2009

	JCB
Engines	JCB, Perkins
Transmissions	JCB, Bosch Rexroth
Axles	JCB
Hydraulic Pumps	Ultra
Hydraulic Valves	Commercial, Sauer-Danfoss
Hydraulic Cylinders	JCB
Seats	KAB
Buckets	Sub Contract
Booms and Arms	JCB
Cabs	JCB

Source: Company Information

The introduction of the new Clearview cab means that this is now built in JCB's Rugeley factory, whereas previously cabs were sourced from Airflow in Northampton.

FOREIGN TRADE

The rough terrain lift truck originated in the UK, but for many years the country was a net importer of machines, and the development of the telescopic machines in the late 1970s opened up great opportunities for UK manufacturers to increase exports. The country was the largest producer of rough terrain lift trucks in Europe until the end of 2005, when Caterpillar and Claas both ceased domestic production.

**Table 12. UK: Exports of Rough Terrain Lift Trucks by Manufacturer, 2005-2009
(% of Production)**

	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
JCB	7,200	63	8,300	67	9,000	62	6,750	64	2,000	48
Caterpillar	4,200	87	1,500	75	-	-	-	-	-	-
Total	11,400	70	11,800	82	9,000	62	6,750	64	2,000	48

Source: Off-Highway Research

The above table shows that the volume of exports has fallen sharply as the economic recession began to bite, and the structure of the production base has changed. The leading exporter in terms of volume was always JCB, although Caterpillar exported a far greater percentage of its overall production. The level of exports has fluctuated in recent years, but when more normal trading conditions return, one can expect exports to return to around 65 per cent of production.

JCB is the third largest supplier of telescopic handlers in Europe outside the UK, with an average market share that has risen from 16 to 18 per cent in the last four years. The products are sold successfully in many countries and do notably well in France, where there is strong local competition. Markets are also being developed in Central Europe and the company already does very good business in Poland and the Czech Republic. In North America it sold no fewer than 1,200 units in 2008, giving it an 11 per cent market share and put it in third place, although in 2009 that market collapsed, but the company improved its share to 12 per cent.

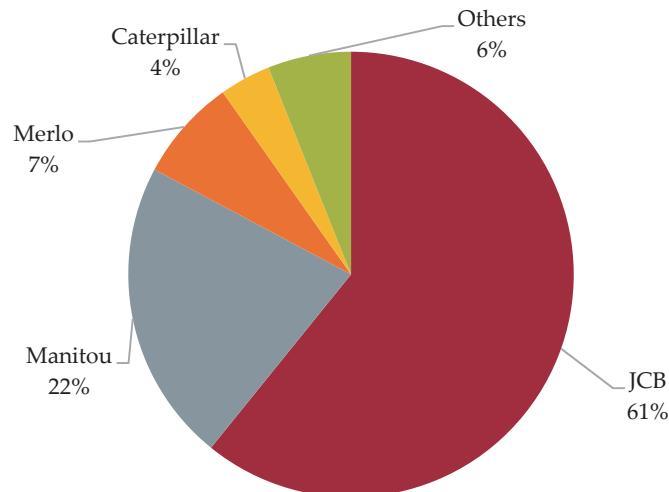
MARKET SHARES

Table 13. UK: Suppliers of Rough Terrain Lift Trucks and Their Market Shares, 2005-2009

	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
JCB	3,790	48	4,075	51	5,714	59	3,885	53	2,448	61
Manitou	1,999	25	2,077	26	2,247	23	1,908	26	885	22
Merlo	550	7	575	7	475	5	650	9	299	7
Caterpillar	600	8	400	5	425	4	325	4	150	4
Claas	125	2	130	2	90	1	150	2	75	2
JLG	70	1	75	1	115	1	90	1	35	1
Bobcat	75	1	85	1	80	1	40	1	35	1
Ausa	60	1	75	1	100	1	70	1	35	1
Terex	-	-	-	-	200	2	70	1	25	1
Dieci	150	2	125	2	120	1	50	1	15	-
New Holland	5	-	20	-	10	-	20	-	10	-
Massey Ferguson	29	-	23	-	9	-	38	1	8	-
Kramer	-	-	2	-	4	-	2	-	4	-
Komatsu	55	1	46	1	43	-	12	-	1	-
Haulotte	60	1	50	1	25	-	-	-	-	-
Case	10	-	7	-	20	-	5	-	-	-
John Deere	350	4	190	2	-	-	-	-	-	-
Others	22	-	25	-	3	-	5	-	-	-
Total	7,950	100	7,980	100	9,680	100	7,320	100	4,025	100

Source: Off-Highway Research

Chart 5. UK: Suppliers of Rough Terrain Lift Trucks and Their Market Shares, 2009



Source: Off-Highway Research

Two companies, JCB and Manitou, have traditionally dominated not only this market but also most other rough terrain lift truck markets throughout Europe. Despite the rapid decline in volumes in the last two years, the overall structure and

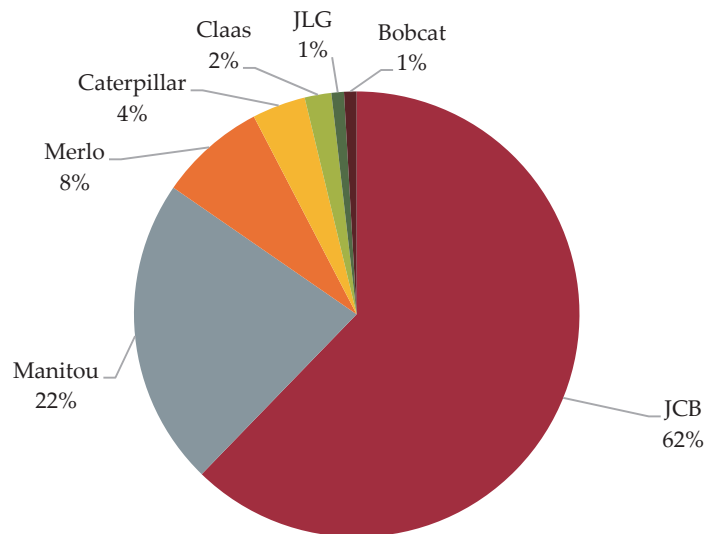
market positioning has remained relatively similar. The two leading companies have slightly strengthened their positions, and now account for over 80 per cent of the total market. The other 15 companies have maintained similar market shares but, with such greatly reduced volumes, must all be in weaker positions.

Table 14. UK: Suppliers of Telescopic Rough Terrain Lift Trucks and Their Market Shares, 2005-2009

	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
JCB	3,625	48	3,950	51	5,428	59	3,675	53	2,403	61
Manitou	1,900	25	2,000	26	2,141	23	1,817	26	863	22
Merlo	550	7	575	7	475	5	650	9	299	8
Caterpillar	600	8	400	5	425	5	325	5	150	4
Claas	125	2	130	2	90	1	150	2	75	2
JLG	70	1	75	1	115	1	90	1	35	1
Bobcat	75	1	85	1	80	1	40	1	35	1
Terex	-	-	-	-	200	2	70	1	25	1
Dieci	150	2	125	2	120	1	50	1	15	-
New Holland	5	-	20	-	10	-	20	-	10	-
Massey Ferguson	29	-	23	-	9	-	38	1	8	-
Kramer	0	-	2	-	4	-	2	-	4	-
Komatsu	55	1	46	1	43	-	12	-	1	-
Haulotte	60	1	50	1	25	-	-	-	-	-
Case	10	-	7	-	20	-	5	-	-	-
John Deere	350	5	190	2	-	-	-	-	-	-
Others	21	-	22	-	-	-	1	-	-	-
Total	7,625	100	7,700	100	9,185	100	6,945	100	3,923	100

Source: Off-Highway Research

Chart 6. UK: Suppliers of Telescopic Rough Terrain Lift Trucks and Their Market Shares, 2009



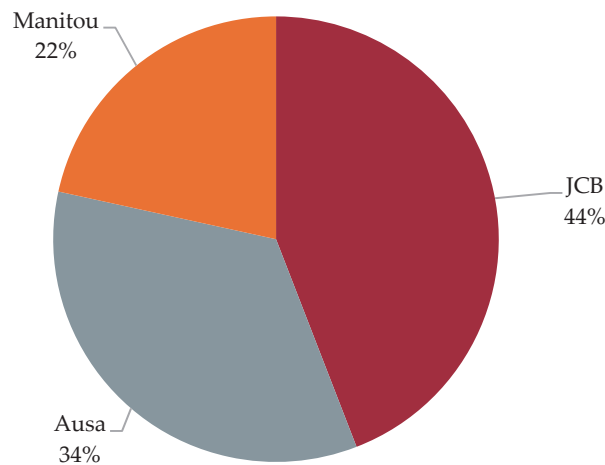
Source: Off-Highway Research

Table 15. UK: Suppliers of Masted Rough Terrain Lift Trucks and Their Market Shares, 2005-2009

	2005		2006		2007		2008		2009	
	Units	%	Units	%	Units	%	Units	%	Units	%
JCB	165	51	125	45	286	58	210	56	45	44
Ausa	60	18	75	27	100	20	70	19	35	34
Manitou	99	30	77	28	106	21	91	24	22	22
Others	1	-	3	1	3	1	4	1	-	-
Total	325	100	280	100	495	100	375	100	102	100

Source: Off-Highway Research

Chart 7. UK: Suppliers of Masted Rough Terrain Lift Trucks and Their Market Shares, 2009



Source: Off-Highway Research

JCB is the dominant supplier in the market. It has a very strong agricultural dealer network and this has allowed it to exploit the growth opportunities in the sector over the last couple of years. The number of large volume deals involving plant hire companies in recent months has been extremely limited, but the few that have occurred have largely been won by JCB. The company enjoys a close working relationship with many of the leading rental companies, and is one of the few manufacturers that have the ability to increase production quickly to take any advantage of a growth in demand. This could well be an important factor in the next couple of years.

Manitou is the world’s largest producer of rough terrain lift trucks, and this market has always played an important role in sustaining that position. Its extensive product range ensures it can compete successfully in all sectors of the market, and is strong in both end-user sectors of the telescopic market. It has increased its strength in the agricultural sector by picking up a few of the dealers who previously

represented John Deere and wanted to represent a premium brand when it ceased production.

Merlo has been represented in the market since 1989, but it was only with the launch of its subsidiary in 1993 that sales began to develop strongly. Merlo has maintained a steady market share, but is one of the few companies in the construction sector not governed by market share. The company is committed to offering an excellent service but only where it is beneficial to both customer and dealer. This was highlighted in 2007 when sales rose dramatically, and the success of Merlo UK would suggest it has now achieved a balance between volume and profit.

The company has been one of the innovators in this market, launching the Roto machines and being at the forefront of the drive towards machines with a high reach capacity. The marketing strategy has developed a financially strong business that has earned Merlo an excellent reputation in the country.

The company is equally strong in both the construction and agricultural sectors, and its future strategy will be to develop sales volumes slowly. Market share is less important as long as the company develops its financial strengths.

Caterpillar is the only other supplier to have sold more than 100 units in the last year. There is little doubt that the decision to stop local production, and the decision of its dealer's parent company to dispose of Hewden Plant, have both had a negative impact on its sales.

None of the other 12 current suppliers has a market share above two per cent, and many do not register more than one per cent. The exception is Claas, which has slightly increased its share of the market because of its strong representation in the agricultural sector. One would expect New Holland and Case to have a significant share of the agricultural sector, but both were relatively late entrants into the market, and many of their agricultural dealers represented other leading suppliers, and had established a strong presence that they were unwilling to give up. It must also be remembered that Manitou did supply some of the original New Holland machines, and that the leading New Holland dealers also represent Manitou.

The small volumes now being obtained by an increasing number of suppliers must put a question mark against their long term viability in the sector. Already Komatsu has ceased production and has withdrawn from the sector.

The economies of scale enjoyed by the two leading companies give them such a strong competitive advantage that new entrants will immediately be at a distinct disadvantage, and the longer the agricultural sector remains the more dominant of the two, the greater the likelihood that the three leading suppliers will increase their share of this market.

MARKETING AND DISTRIBUTION

**Table 16. UK: Distribution Systems of Leading Telescopic Handler Suppliers,
2010**

Manufacturer	Company Subsidiary	Independent Importer	No. of Construction Outlets	No. of Agricultural Outlets
Ausa	Yes	No	35	-
Case	Yes	No	18	30
Caterpillar	No	Yes	24	-
Claas	Yes	No	-	79
Dieci	No	Yes	25	15
Genie	Yes	No	2	-
Haulotte	Yes	No	1	-
I-R Bobcat	No	Yes	18	-
JCB	Yes	No	45	63
JLG	Yes	No	1	-
Kramer	Yes	No	17	-
Liebherr	Yes	No	6	-
Manitou	Yes	No	31	46
Merlo	Yes	No	16	63
New Holland	Yes	No	40	170

Source: Company Information

All the companies interviewed during the research programme emphasised the importance of the distribution network to the success of their operations in the country. The last few years have seen many changes in the structure of demand, and this is well reflected in the distribution networks that are shown above. The early to mid-1990s was a period of stability in the networks of telescopic handler suppliers, whereas the late 1990s was a period of enormous change. The last three years have seen a smaller number of changes, but stability has still not genuinely returned to the sector.

The construction dealer networks tend to be smaller because there are fewer potential customers. The dilemma of what constitutes the ‘ideal’ dealer network to market telehandlers has been taxing every supplier for a number of years, and has yet to be satisfactorily answered. The belief amongst some suppliers is that between 15 and 20 outlets are needed to enable a company to compete competitively nationwide. Nearly all suppliers have this number, and some like JCB have considerably more, with 40 outlets. This “ideal” number has been thrown further into doubt by the changing customer base for fewer, larger hire companies would suggest fewer outlets are needed to give a full national coverage.

Additionally, an increasing level of business is being generated directly between the customer and supplier. This particularly applies to the large national and regional hire companies, and reduces the need for a large number of full sales, service and parts dealerships. What is required is national coverage from a customer support aspect. Many of the full dealerships will be in the country’s more remote regions,

where a local presence is very much appreciated, but where sales volumes are relatively low.

The companies best served are those that have been in the market the longest and found good dealers at an early stage, or already had an established network selling other products within the company's range.

The last few years have seen many companies make adjustments to their networks, as one or two dealers have succumbed to the financial pressures of the recession. However, the resilience of many dealers is underscored by the fact that there have been no widespread changes in dealer networks, despite the worst recession in over 70 years that has seen the market halve in less than two years. The dominant, very large hire companies tend to deal directly with the manufacturer or importer, rather than with the local dealer when purchasing. This reduces the need to have an extensive dealer network because all that is required is to offer service support, which could be undertaken by an agent rather than a full dealership.

The battleground for all suppliers in the future is going to be in the agricultural sector, for the farmer is conservative and is loyal to relationships built up over the years. He is also inevitably a very shrewd businessman. New customers of telescopic handlers will often seek demonstrations from a large number of suppliers, thereby having much of his work carried out cheaply, before settling on whatever telescopic handler might be supplied by his tractor distributor.

The problem facing any potential new supplier is in attracting a dealer network that will give coverage equal to that of the established suppliers. This is highlighted by the fact that companies such as Manitou have been able to retain New Holland's agricultural dealers, despite the fact that New Holland itself entered the sector. The construction sector is slightly easier to cover, but with large potential volumes in the agricultural market where long term relationships are very important, dealerships are less easy to establish. The withdrawal of John Deere from the market four years ago opened up the potential for new suppliers in this sector, but most of the good John Deere dealerships were taken up by the three leading suppliers who already had the most extensive network.

Those companies that have been well established in the UK, or new entrants with a relationship to an existing tractor supplier, are the most likely to exploit the potential that exists in the agricultural sector. To ensure comprehensive coverage, a network with over 100 outlets is required to cover the whole country. This is often beyond the means of a new entrant and as a result, many of them have chosen to ignore the agricultural market completely, and concentrate solely on the construction sector.

Merlo, as a late entrant, tried to establish a restricted network that would grow in line with sales and the improved availability of product from the Italian factory. Merlo believes that the results would suggest this to be accurate, and that a strong

reputation for after sales support will ensure future sales. Both Manitou and Merlo have changed many of their dealers over the last decade. Initially both sought small companies that would hopefully develop a long term relationship with the supplier. However, some of these companies were not financially secure enough to compete in the competitive sector when demand declined. As a result, many of their new dealers are larger companies with many franchises, and this means that both Manitou and Merlo do not control their dealer networks. However, the quality of the product and customer support from the manufacturer has ensured the dealer represents the product in a very supportive manner, and for most dealers the product has proved to be a welcome financial benefit.

A major change for Merlo was the appointment of CBL to cover most of the south of England from its seven depots. To some CBL is a controversial choice as it clearly operates as both a retail outlet as well as a plant hirer. This may upset some hire companies in the area but CBL has an excellent reputation both for sales and support and it will obviously increase Merlo's potential in the hire sector when the market recovers. Merlo is slightly different from others in that it operates the construction and farming sectors almost as two separate businesses, with a regional sales manager in charge of each dealer network.

As mentioned earlier, Genie, Haulotte and JLG see the telescopic handler largely as an additional product to their existing product ranges, and are currently operating a direct sales policy to leading rental companies.

PRICING

Pricing of any product in the UK market can be contentious, and the telescopic handler is no different, although it has not experienced some of the problems seen in other product sectors. The plant hire sector dominates demand in the construction sector, and as a result price plays a very important role in the final purchasing decision. The agricultural market is less price sensitive and consequently prices are higher but often the expenses, such as frequent demonstrations, incurred in achieving the eventual order can be much higher and this can lead sometimes to the net prices being similar.

As stated earlier, the specification of agricultural machines in the UK is the highest in the world, and this consequently affects pricing. The strong growth in the agricultural market over the last four years has resulted in the highest upward movement in prices seen in this market.

Table 17. UK: Selected Telescopic Handler Transaction Prices by Weight Classification, 1999-2010 (£'000)

Tonnes	Metres	1999	2002	2006	2010
2.5	6-7 (Agricultural Spec)	27-31	28-35	29-35	45-50
2.5-2.8	6-7 (Construction Spec)	28-30	28-30	29-31	29-32
3.0	9-10	32-33	29-30	28-31	30-32
3.0	13-14	37-39	37-40	36-42	36-42
4.0	16-21	-	48-50	50-55	45-55

Source: Off-Highway Research

The construction sector is as competitive as ever, and the decline in demand has increased the price competition in the race to obtain some sales volume. In real terms, the price of a telehandler has fallen steadily over the last decade, and this can only increase the difficulties for those suppliers that are not achieving significant volumes.

Currently, prices of the larger lift machines are higher because the level of competition is slightly less intense, while the plant hirer is currently able to achieve better rates. The sector is following a similar path to that seen in other sectors, where the small machine sector became saturated and new entrants and hire rates suffered. This resulted in the larger suppliers attempting to move the market upwards in terms of machine size, so that a better price could be obtained and the hirer could be assured of a better return. However, nearly all the major suppliers have expanded their machine range and every niche and volume sector is very well served.

The weakness of Sterling over the last couple of years has seen many plant hire companies dispose at least some of their fleets into other European markets. The

weakness has now been stabilised and so exports of new, nearly new machines have now generally disappeared.

Pricing in this market is very competitive but in the telescopic handler sector, the quality of the product and support given is equally important. The market is dominated by JCB, so it is seen as the pricing benchmark for many customers.

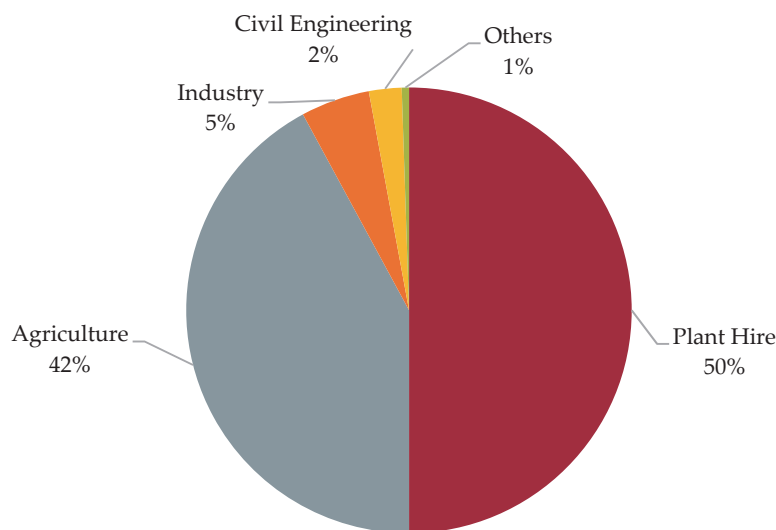
POPULATION AND END-USERS

Table 18. UK: Population of Rough Terrain Lift Trucks by End-User, 1999-2010

	1999		2003		2006		2010	
	Units	%	Units	%	Units	%	Units	%
Plant Hire	16,000	49	18,350	51	22,000	55	19,000	50
Agriculture	13,000	40	14,000	39	15,000	37	16,000	42
Industry	2,000	6	2,250	6	2,100	5	1,900	5
Civil Engineering	1,200	4	1,200	3	1,100	3	900	2
Others	400	1	200	1	100	-	200	1
Total	32,600	100	36,000	100	40,300	100	38,000	100

Source: Off-Highway Research

Chart 8. UK: Population of Rough Terrain Lift Trucks by End-User, 2010



Source: Off-Highway Research

The last decade has been one where the population and popularity of the rough terrain lift truck has continued to grow, but the global financial crisis of 2008 and the subsequent recession brought all that to an end. Rental companies suddenly saw that their fleets were way too large to meet the expected demand and many of them disposed of large number of their new and nearly new machines to Continental Europe, where the recession did not begin before the last quarter of 2008.

Consequently, the number of machines held by hire companies has declined significantly. The population is now more than sufficient to meet the current needs of the market, but the population has changed significantly from being a young one to a much older one almost overnight, for it was the machines that were bought in 2007 that were primarily disposed of to customers in Europe. The belief now is that whilst demand from the construction sector remains low, the fleet will continue to become older, and that when the sector picks up in a couple of years there could be a sudden rush to replace these old machines.

The recession has brought about the return of the trade-in with each new machine sold, and quite often customers are seeking to exchange more than one machine for each new machine purchased. The farming sector is rather different, and quite often it is a like-for-like replacement or an additional machine on the farm.

As a result, each new machine currently sold invariably involves a trade-in which is now sold to smaller hire companies, but most importantly to suppliers it remains in the country so the valuable parts business is retained.

Whilst the use of the rough terrain lift truck is not declining in civil engineering, machines now tend to be hired when required. Hence the volume of sales to the plant hire sector should technically increase when market conditions return to something approaching normality. The same reasoning applies to the decline in use by local authorities. The market is now segmenting strongly into two end-user sectors: agriculture and plant hire, with a small but significant niche in industry.

The average first life of a machine varies depending upon the user. The agricultural customer will work his machine hard and, while he may replace it every four to five years, it will have recorded a significant number of hours. In the plant hire sector large companies were replacing their machines after 18 months to three years, but they have now extended this to three to five years, while the smaller rental companies will tend to replace their fleets every four to five years. The net effect is a smaller but older population. This is acceptable in the short term but could potentially create a 'boom and bust' situation, so often the scourge of the market, and bring back many problems on pricing, and delivery times.

Due to specification differences, second-hand agricultural machines can only be sold to the agricultural sector, whilst construction machines are rarely sold outside that sector. However, demand is greater for a second-hand machine in the agricultural sector and is likely to remain so in the future.

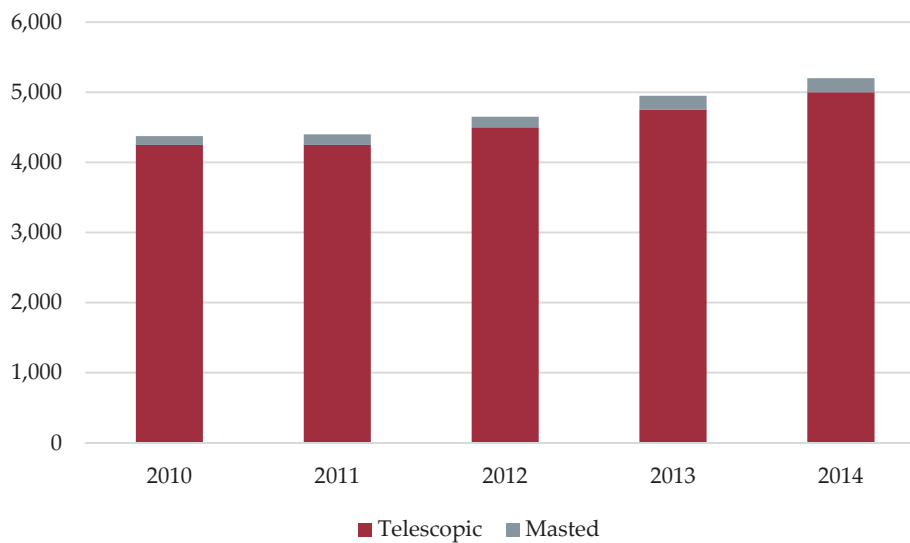
FORECAST

Table 19. UK: Forecast Sales of Rough Terrain Lift Trucks, 2010-2014(Units)

	2010	2011	2012	2013	2014
Telescopic	4,250	4,250	4,500	4,750	5,000
Masted	125	150	150	200	200
Total	4,375	4,400	4,650	4,950	5,200

Source: Off-Highway Research

Chart 9. UK: Forecast Sales of Rough Terrain Lift Trucks, 2010-2014(Units)



Source: Off-Highway Research

Table 20. UK: Forecast Sales of Rough Terrain Lift Trucks By End-User, 2010-2014 (Units)

Year	Construction	Agriculture	Total
2010	1,425	2,950	4,375
2011	1,600	2,800	4,400
2012	1,900	2,750	4,650
2013	2,200	2,750	4,950
2014	2,400	2,800	5,200

Source: Off-Highway Research

Chart 10. UK: Forecast Sales of Rough Terrain Lift Trucks By End-User, 2010-2014 (Units)



Source: Off-Highway Research

It has often been stated that forecasting sales where the plant hirer is such a prominent customer poses a difficult task. When that is added to a farming sector whose future is largely determined by the EU and not by what is happening in the country itself, forecasting exactly what will happen, and when it will occur, is almost impossible. However, what can be said is that given the depth to which the construction sector has fallen, the next few years will see a return to growth. However, nobody is yet willing to predict the rate of return, or precisely when it will happen.

The construction sector is currently suffering from a severe overdose of pessimism, and this is not surprising given the speed and depth of the recession over the last two years. In addition, the Government is currently warning about the austerity measures ahead, and that many construction projects will be axed or delayed. Uncertainty breeds uncertainty and with many customers caught with too many machines when the collapse occurred in 2008, they are understandably reluctant about adding to their fleets again.

The one certainty is that growth is likely to occur over the next few years, but at a much lower rate than in the past, and will be certainly below what the sector has been used to over the last decade. However, the rate of growth could accelerate at any time given some good news, although nobody is currently expecting this to occur prior to 2012. The situation is fluid and the forecast shown in table 19 represents the current outlook, which may well change in the short term.

The agricultural market is much more difficult to forecast because of the degree decision making is being taken outside the country, but the general drive towards

larger farms has meant that the telescopic rough terrain lift truck has greater appeal today than previously. It is believed that the potential market for rough terrain lift trucks in the agricultural sector is now approximately 3,000 machines a year, with an average of just over 2,800 units very likely to be achieved over the next five years.

The long term potential for the telescopic rough terrain lift truck is largely dependent upon one factor, housebuilding which is currently at its lowest historical level. Local authorities need to expand the level of social housing but currently do not have the budget to implement the change needed. The private housebuilding sector is hampered by the banks restricting the amount of finance available for mortgages. Consequently, the levels seen as little as two years ago are unlikely to be achieved in the foreseeable future, if ever again. However, the forecast for 2,400 units by 2014 is still on the low side and one can anticipate volumes once again reaching 3,000 units when the market fully recovers.

The telescopic rough terrain lift truck will remain the dominant force in the market. The masted truck has a potential market of up to 225-275 machines a year, depending on which hire companies are due to replace their fleets, but they are not expected to renew in significant numbers over the next five years. The product is now very much a niche machine that has great longevity, and as a result hire companies are not currently in a rush to replace them.

MACHINES AVAILABLE

Table 21. UK: Rough Terrain Lift Trucks Available, (Telescopic) 2010

Type/ Manufacturer	Model	HP	Manufacturer	Operating Capacity (Tonnes)	Maximum Lift (m)	Product Source	
Bobcat	T2250	75	Kubota	2.2	5.0	France	
	T2556	100	Perkins	2.5	5.6	France	
	T2566	100	Perkins	2.5	6.5	France	
	T3571/L	100	Perkins	3.5	7.1	France	
	T35100/L/SL	100	Perkins	3.5	10.0	France	
	T35120L/SL/MP	100	Perkins	3.5	11.6	France	
	T40140	100	Perkins	4.0	13.6	France	
	T40170	100	Perkins	4.0	17.2	France	
	TR35160	102	Iveco	3.5	15.5	Italy	
	TR45190	144	Perkins	4.5	18.4	Italy	
	TR50210	144	Perkins	5.0	20.3	Italy	
	TR40250	144	Perkins	4.0	21.1	Italy	
	Case	TX130-33	99	Iveco	3.3	13.0	Italy
		TX130-40	118	Iveco	4.0	12.45	Italy
TX130-45		118	Iveco	4.5	12.3	Italy	
TX140-40		118	Iveco	4.0	13.6	Italy	
TX170-40		118	Iveco	4.0	16.6	Italy	
Caterpillar	TH255	84	Caterpillar	2.5	5.0	Belgium	
	TH336	100/127	Caterpillar	3.3	6.1	Belgium	
	TH337	100/127	Caterpillar	3.3	7.3	Belgium	
	TH406	100/127	Caterpillar	3.7	6.1	Belgium	
	TH407	100/125	Caterpillar	3.7	7.3	Belgium	
	TH414	125	Caterpillar	3.7	13.7	Belgium	
	TH417	100	Caterpillar	4.0	17.0	Belgium	
	TH514	100	Caterpillar	5.0	13.7	Belgium	
Claas	6030 CP	80/100	Deutz	3.0	6.1	Germany	
	7030	120	Deutz	3.3/3.5	7.1	Germany	
	7040	120	Deutz	4.0/4.4	7.1	Germany	
	7045	140	Deutz	4.4	7.1	Germany	
	9040	120/140	Deutz	4.0	9.0	Germany	
Dieci	Apollo 25.6	85	Iveco	2.5	5.8	Italy	
	Dedalus 26.6TC	82/101	Iveco	2.6	6.0	Italy	
	Dedalus 28.7TC	82/101	Iveco	2.8	6.4	Italy	
	Dedalus 30.7H TC	82/101	Iveco	3.0	6.4	Italy	
	Zeus 37.7	101/128	Iveco	3.7	7.4	Italy	
	Runner 35.8	101/128	Iveco	3.5	7.9	Italy	
	Samson 45.8	101/128	Iveco	4.0	7.9	Italy	
	Runner 30.9	101/128	Iveco	3.0	8.8	Italy	
	Dedalus 30.9TC	101	Iveco	3.0	8.7	Italy	
	Samson 70.10	101/128	Iveco	7.0	9.5	Italy	
	Zeus 35.10	101/128	Iveco	3.5	9.8	Italy	
	Zeus 33.11	101/128	Iveco	3.3	11.0	Italy	
	Pegasus 70.11	144	Iveco	7.0	11.0	Italy	
	Samson 40.11	101/128	Iveco	4.0	11.2	Italy	
	Runner 40.13	101/128	Iveco	4.0	12.4	Italy	
	Icarus 40.14	101/128	Iveco	4.0	14.0	Italy	
	Pegasus 35.16	102	Iveco	3.5	15.7	Italy	
Pegasus 60.16	144	Iveco	6.0	15.7	Italy		
Pegasus 40.17	144	Iveco	4.0	16.8	Italy		

Source: Off-Highway Research

(Continued)

Table 21. UK: Rough Terrain Lift Trucks Available, (Telescopic) 2010,

Type/ Manufacturer	Model	HP	Manufacturer	Operating Capacity (Tonnes)	Maximum Lift (m)	Product Source	
Dieci (Continued)	Pegasus 45.19	144	Iveco	4.5	18.7	Italy	
	Icarus 40.17	101/128	Iveco	4.0	19.9	Italy	
Genie	Pegasus 50.21	144	Iveco	5.0	20.5	Italy	
	Pegasus 45.21	140	Iveco	4.5	20.5	Italy	
	Pegasus 40.25	144	Iveco	4.0	24.5	Italy	
	GTH-2506	63	Deutz	2.5	6.0	Italy	
	GTH-3007	82	Perkins	3.0	6.9	Italy	
	GTH-4010	82	Perkins	4.0	10.0	Italy	
	GTH-3512	82	Perkins	3.5	12.1	Italy	
	GTH-4013/SX	99	Cummins	4.0	13.0	Italy	
	GTH-4514	101	Perkins	4.5	14.0	Italy	
	GTH-4016	101	Perkins	4.0	16.0	Italy	
	GTH-4017	101	Perkins	4.0	17.0	Italy	
	GTH-4518ER	102	Deutz	4.5	17.3	Italy	
	GTH-4018	101	Perkins	4.0	18.0	Italy	
	GTH-4020ER	102	Deutz	4.0	19.6	Italy	
	GTH-5022R	152	Perkins	5.0	21.8	Italy	
	GTH-6025ER	166	Cummins	6.0	24.8	Italy	
Haulotte	HTL4014	102	Deutz	4.0	14.1	Spain	
	HTL4017	102	Deutz	4.0	17.2	Spain	
JCB	520-40	50	Perkins	2.0	4.0	UK	
	524-50	85	Perkins	2.4	5.0	UK	
	531-70	85/100	JCB	3.0	6.8	UK	
	541-70	102	JCB	4.1	6.8	UK	
	536-60	100/125	JCB	3.6	6.2	UK	
	535-95	85/100	JCB	3.5	9.5	UK	
	533-105	85/100	JCB	3.3	10.5	UK	
	535-125	85/100	JCB	3.5	12.5	UK	
	535-140	85/100	JCB	3.5	13.8	UK	
	540-140	121	JCB	4.0	14.0	UK	
	540-170	102	JCB	4.0	16.7	UK	
	- Agricultural	515-40	60	Perkins	1.5	4.0	UK
		520-40	51	Perkins	2.0	4.0	UK
524-50		83	Perkins	2.4	5.3	UK	
527-55		82/100	JCB	2.7	5.5	UK	
526		85/100	JCB	2.6	5.0	UK	
526S		85/100	JCB	2.6	5.0	UK	
527-58		100	JCB	2.7	6.8	UK	
536-60/Plus/Super		100/130/130	JCB	3.6	6.2	UK	
531-70/S/Plus/Super/Xtra		100/100/130/130/130	JCB	3.1	7.0	UK	
536-70/Plus/Super/Xtra		100/130/130/130	JCB	3.6	7.0	UK	
541-70/Super/Xtra		100/130/130	JCB	4.1	7.0	UK	
535-95 Plus/Super		130	JCB	3.5	9.5	UK	
TM 310/Max		130/145	JCB	3.0	5.0	UK	
536-70/Plus/Super/Xtra		100/130/130/130	JCB	3.6	7.0	UK	
JLG		2505	84	Perkins	2.5	5.6	Belgium
		266	102	Deutz	2.6	5.8	Belgium
		307	102	Deutz	3.0	6.9	Belgium
	3507H	102	Deutz	3.5	7.0	Belgium	
	3508PS	100	Perkins	3.5	8.0	Belgium	
	3509PS	100	Perkins	3.5	9.0	Belgium	

Source: Off-Highway Research

(Continued)

Table 21. UK: Rough Terrain Lift Trucks Available, (Telescopic) 2010

Type/ Manufacturer	Model	HP	Manufacturer	Operating Capacity (Tonnes)	Maximum Lift (m)	Product Source
JLG (Continued)	3512PS	100	Perkins	3.5	12.0	Belgium
	3513PS	100	Perkins	3.5	13.0	Belgium
	4008PS	100	Perkins	4.0	8.0	Belgium
	4009PS	100	Perkins	4.0	9.0	Belgium
	4012PS	100	Perkins	4.0	12.0	Belgium
	4013PS	100	Perkins	4.0	13.0	Belgium
	4017PS	100	Perkins	4.0	16.7	Belgium
Kramer	1245	31	Deutz	1.2	4.3	Germany
	2506	68	Deutz	2.5	4.5	Germany
	3307	120	Deutz	3.3	7.1	Germany
	4507	120	Deutz	4.4	7.1	Germany
	4009	120	Deutz	4.0	9.0	Germany
Liebherr	TL435-10	114	Deere	3.5	9.8	Austria
	TL435-13	114	Deere	3.5	13.0	Austria
	TL445-10	114	Deere	4.5	9.8	Austria
	TL442-10	114	Deere	4.2	9.8	Austria
Manitou	BT420	51	Perkins	2.0	4.0	France
	BT425	51	Perkins	2.5	4.0	France
	MT523	58	Perkins	2.3	5.0	France
	MLT523 T	75	Kubota	2.5	4.9	France
	MT620	60	Kubota	2.0	4.9	France
	MLT627	101	Perkins	2.7	5.5	France
	MLA628-120LSU	123	Perkins	2.8	5.2	France
	MLT630T	101	Perkins	3.0	6.1	France
	MLT634	124	Perkins	3.4	6.1	France
	MHT860L	132	Perkins	3.0	8.1	Italy
	MT1030S/ST	84/100	Perkins	3.0	10.0	France
	MLT731T	101	Perkins	3.1	6.9	France
	MLT735	123	Perkins	3.5	7.0	France
	MLT741	123	Perkins	4.1	6.9	France
	MLT742	101	Perkins	4.2	6.9	France
	MLT1035LTLSU	101	Perkins	3.5	9.6	France
	MLT845HT-LSU	101	Perkins	4.5	7.55	France
	MLT845-120LSU	120	Perkins	4.5	7.55	France
	MLT940L-120LSU	123	Perkins	4.0	9.0	France
	MT940LT	101	Perkins	4.0	9.0	France
	MVT628T	101	Perkins	2.8	6.3	France
	MVT665T	101	Perkins	2.8	6.0	France
	MVT675T	124	Perkins	6.5	6.0	France
	MHT860T	132	Mercedes	8.0	6.0	Italy
	MHT10120L	175	Mercedes-Benz	12.0	9.6	Italy
	MHT7140	175	Mercedes-Benz	14.0	7.0	Italy
	MHT10160L	175	Mercedes-Benz	16.0	9.7	Italy
	MT732	95	Perkins	3.2	6.9	France
	MT932	95	Perkins	3.2	9.0	France
	MT1033HLT	95	Perkins	3.0	9.6	France
	MT1030S/ST	101	Perkins	3.3	9.98	France
	MT1235S/ST	95	Perkins	3.5	12.0	France
MT1435HSLT	101	Perkins	4.0	13.5	France	
MT1436R	87	Perkins	3.6	13.5	France	
MT1440/A	101	Perkins	4.0	13.5	France	

Source: Off-Highway Research

(Continued)

Table 21. UK: Rough Terrain Lift Trucks Available, (Telescopic) 2010

Type/ Manufacturer	Model	HP	Manufacturer	Operating Capacity (Tonnes)	Maximum Lift (m)	Product Source
Manitou (Continued)	MT1840R/A/EP	101	Perkins	4.0	17.5	France
	MRT1432	100	Perkins	3.2	13.82	Italy
	MRT1542	101	Perkins	4.2	14.8	Italy
	MRT1635	100	Perkins	4.2	16.3	Italy
	MRT1742	101	Perkins	4.2	17.3	Italy
	MRT1850	150	Mercedes-Benz	5.0	17.9	Italy
	MRT2150	150	Mercedes-Benz	5.0	20.6	Italy
	MRT2540	150	Mercedes-Benz	5.0	24.6	Italy
	MRT3050	216	Perkins	5.0	29.7	Italy
	Massey Ferguson	MF8925 Xtra	99	Perkins	2.5	5.6
MF8926 Xtra		99	Perkins	2.5	6.5	France
MF8947 Xtra		99	Perkins	3.5	7.2	France
MF89410 Xtra		99	Perkins	3.5	10.2	France
Merlo	P28.8	101	Deutz	2.8	8.2	Italy
	P32.6	101	Deutz	3.2	6.4	Italy
	P34.7	102	Deutz	3.4	7.0	Italy
	P34.10	102	Deutz	3.4	9.7	Italy
	P36.7	102	Deutz	3.6	7.0	Italy
	P36.10	102	Deutz	3.6	9.7	Italy
	P37.12	101	Deutz	3.7	11.6	Italy
	P38.12	101	Perkins	3.8	11.6	Italy
	P38.13	101	Perkins	3.8	12.6	Italy
	P38.14	101	Perkins	3.8	13.6	Italy
	P40.9	101	Iveco	4.0	9.0	Italy
	P40.16	101	Iveco	4.0	15.6	Italy
	P40.17	102	Deutz	4.0	16.7	Italy
	P45.18	145	Iveco	4.5	17.8	Italy
	P55.9	140	Deutz	5.5	8.6	Italy
	P60.10	101	Perkins	6.0	9.5	Italy
	P65.14	145	Iveco	6.5	13.9	Italy
	P72.10	101	Perkins	7.2	9.5	Italy
	P80.9	145	Iveco	8.0	9.1	Italy
	P101.10	145	Iveco	10.0	9.8	Italy
- Multifarmer	27.8	102	Deutz	2.8	8.2	Italy
	29.6	102	Deutz	2.9	6.4	Italy
	30.6	115	Deutz	3.0	6.0	Italy
	30.9	115	Deutz	3.0	8.6	Italy
- Roto	50.10	102	Deutz	5.0	10.4	Italy
	38.14	102	Deutz	3.8	13.8	Italy
	38.16	102	Deutz	3.8	15.7	Italy
	50.16	145	Iveco	5.0	16.4	Italy
	45.21	145	Iveco	4.5	20.8	Italy
	45.19	145	Iveco	4.5	18.7	Italy
	40.25	145	Iveco	4.0	25.0	Italy
New Holland	LM1330	82	CNH	3.0	12.7	Italy
	LM1333	97	CNH	3.3	13.0	Italy
	LM1340	112	CNH	4.0	12.3	Italy
	LM1343	112	CNH	4.3	12.45	Italy
	LM1345	112	CNH	4.5	12.45	Italy
	LM1443	112	CNH	4.3	13.55	Italy
	LM1445	112	CNH	4.3	13.55	Italy

Source: Off-Highway Research

(Continued)

Table 21. UK: Rough Terrain Lift Trucks Available, (Telescopic) 2010

Type/ Manufacturer	Model	HP	Manufacturer	Operating Capacity (Tonnes)	Maximum Lift (m)	Product Source
New Holland (Continued)	LM1745	112	CNH	4.5	16.6	Italy
	LM415A	95/110	CNH	2.9	5.9	France
	LM425A	95	CNH	3.3	5.9	France
	LM435A	95/110	CNH	3.1	6.8	France
	LM445A	95	CNH	3.0	8.9	France

Source: Off-Highway Research

Table 22. UK: Rough Terrain Lift Trucks Available, (Masted) 2010

Type/ Manufacturer	Model	HP	Manufacturer	Operating Capacity (Tonnes)	Maximum Lift (m)	Product Source
AUSA	C150H	35	Isuzu	1.5	4.0	Spain
	C200H	51	Isuzu	2.0	5.4	Spain
	C250H	51	Isuzu	2.5	5.4	Spain
	C300H	65	Isuzu	2.8	6.8	Spain
	C350H	65	Isuzu	3.2	6.8	Spain
JCB	C150H	35	Isuzu	1.5	4.0	Spain
	926	84	JCB	2.6	6.5	UK
	930	84	JCB	3.0	6.5	UK
Manitou	940	84	JCB	4.0	6.5	UK
	M26.2/4	81	Perkins	2.6	3.7	France
	M30.2/4	81	Perkins	3.0	3.7	France
	M40.4	81	Perkins	4.0	3.7	France
	M50.4	81	Perkins	5.0	3.7	France
- Semi-Industrial	MA460	106	Perkins	6.0	4.0	France
	MA470	106	Perkins	7.0	4.0	France
	MSI20	51	Perkins	2.0	3.7	France
	MSI25	51	Perkins	2.5	3.3	France
	MSI30	51	Perkins	3.0	3.3	France
- Yard Trucks	MSI35	60	Perkins	3.5	3.3	France
	MSI40	81	Perkins	4.0	3.7	France
	MSI50	81	Perkins	5.0	3.7	France
	MC30T	81	Perkins	3.0	3.7	France
	MC40T	81	Perkins	4.0	3.7	France
	MC50T	81	Perkins	5.0	3.7	France
	MC60T	106	Perkins	6.0	4.0	France
MC70T	106	Perkins	7.0	4.0	France	

Source: Off-Highway Research

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BOBCAT	
Direct Import through independent dealers	Doosan Infracore Route de Nantes BP 71 44160 Pontchateau France Tel: +33 40 00 73 50 www.bobcat.com
CASE	
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DIECI	
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Importer's Location	Manufacturer's Head Office
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