EQUIPMENT ANALYSIS:
BACKHOE LOADERS – ITALY
NOVEMBER 2003

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INTRODUCTION

This report concerns the market for backhoe loaders referred to in Italian as “terne”, and is an update on the subject which was last covered in Off-Highway Research’s European Service in November 1999. Historically the backhoe loader has been developed from the modification of an agricultural or industrial tractor, to which has been added a front bucket of approximately 0.75 m^3 capacity, and a rear hydraulic backhoe with a bucket of around 0.2 m^3 capacity.

The backhoe loader has long been a favourite tool for small excavation works and one of the most popular machines available on Italian construction sites. The machine owes its success to its versatility and flexibility which ideally suit it to the work of Italian jobbing contractors, often owner operators – *padroncinis* – who are able to adapt quickly to the specific requirements of each job. With the continuing emphasis on repair, restoration and maintenance, Italian contractors still depend on the backhoe loader as their basic tool, although in recent years they have begun to move towards the use of other compact machines.

The product covered in this report includes rigid, articulated and all-wheel-steer types of purpose-built backhoe loaders ranging from 40 to 120 horsepower. Small, under 40 horsepower, machines represented by Benny, Kubota, Foredil, Fiori, Eurocomach and Amog are excluded from this report. Also this report does not cover wheeled loaders, skid-steer loaders and agricultural and industrial tractors to which a backhoe attachment has been fitted.

The findings are based on Off-Highway Research’s International Database Service, and on information collected during an extensive interview programme in Italy undertaken in August 2003 which included all leading manufacturers, importers and distributors.

SUMMARY

Since the last report in 1999 sales of backhoe loaders in Italy have decreased by just over one per cent and stood at 3,156 in 2002. Demand for articulated machines, which now accounts for 20 per cent of total sales, declined by two per cent whereas sales of all wheel steer (4WS) units increased by 53 per cent in 2002, and now account for 28 per cent of the total backhoe loader market in Italy.

Table 1. Italy: Statistical Summary of Backhoe Loaders, 2002

Number of Suppliers	13
Number of Domestic Manufacturers	8
Market Leader	JCB
Production (Units)	8,982
– Rigid	6,380
– Articulated	757
– 4WS	1,845
Sales (Units)	3,156
– Rigid	1,644
– Articulated	634
– 4WS	878
Importer's Penetration (%)	50
Population (Units)	28,100
Sales Forecast 2007 (Units)	2,300

Source: Off-Highway Research

There are still eight manufacturers and CNH, trading under the New Holland, Fiat Kobelco and Case brand names, with an annual output of 6,000 units, is the largest producer followed by Komatsu.

The market is a battleground for no fewer than 13 suppliers. **JCB** continues to lead the market with more than one-third of the total sales. Most backhoe loaders sold in Italy are fitted with turbo-charged engines in the 90 to 100 horsepower band. They are side-shift with four wheel drive and are equipped with extendable dipper backhoe used for digging, which accounts for about 65 to 75 per cent of backhoe functions.

With strong competition from alternative machines the outlook for the sector is worse than many supplies had initially anticipated. Sales are expected to decline by 35 to 40 per cent in the next two years, and in the following three years the market should settle at a level of between 1,900 to 2,300 units per year.

ECONOMIC AND CONSTRUCTION ACTIVITY

Economic Activity

Table 2. Italy: Key Economic Indicators, 1998-2002

(% Annual Change)

	1998	1999	2000	2001	2002
Real GDP	1.3	1.2	2.3	2.5	1.9
Private Consumption	1.7	1.7	1.8	1.9	1.7
Public Consumption	1.3	2.0	1.3	1.5	1.3
Total Domestic Demand	1.9	2.5	1.8	2.4	2.2
Industrial Production	1.3	0.1	3.2	3.0	2.8
Export Volume	8.6	0.4	10.9	9.5	9.0
Import Volume	9.1	3.4	7.1	7.5	7.2
Current Account (US$ bn)	20.0	13.0	15.2	22.7	21.4
Unemployment Rate	11.9	11.4	11.1	10.8	10.4
Short Term Rate	5.0	2.9	3.6	4.0	4.9
Inflation	1.7	1.7	2.0	1.9	2.0

Source: OECD

Italy has the fourth largest economy in Europe in terms of both population and total domestic output (GDP) – after Germany, the United Kingdom and France. It nevertheless comes only 12th among the 15 EU countries in terms of real GDP per head – above only Spain, Portugal and Greece.

After slowing down through much of the 1990s, the economy improved markedly towards the end of the decade. Annual GDP growth, well below the average rate for the euro area, accelerated from 1.3 per cent in 1998 to 2.5 per cent in 2001, close to double the annual growth rate over the decade of the 1990s. Industrial production, helped by booming exports, reached its highest level for seven years, while the unemployment rate declined to below 11 per cent. Domestic demand was robust, with private consumption expanding and fixed investment growing thanks to relatively low interest rates, new tax incentives and strong business confidence.

However, signs of weakness emerged towards the end of 2001 and these were confirmed in 2002. The downturn is primarily attributable to external factors such as a sharp slowdown in world trade and an increase in oil prices, caused by the September 11 terrorist attacks in the United States. Because of higher oil prices, consumer price inflation increased which, in turn, weakened consumer spending. The slowdown of world demand depressed export markets and led businesses to delay investment plans for the foreseeable future. For the rest of the economy the picture is uniformly gloomy. Confidence has been declining, public finance suffering and the GDP growth rate in 2002 fell below 2.0 per cent from the 2.5 per cent registered in the previous year.

Construction Activity

After a high level of construction activity in the last two years, overall construction output in 2002 increased by a moderate 1.4 per cent compared with 2001 and reached €153.7 billion, which makes it the third largest in Europe.

Table 3. Italy: Investment in Construction, 1999-2003

(% Annual Change)

	1999	2000	2001	2002	Forecast 2003
New Construction					
– Residential	1.9	6.2	8.5	4.0	-0.4
– Private Non-Residential	2.1	7.6	8.0	3.0	-1.0
– Public Non-Residential	7.2	2.5	8.5	3.0	0.8
Civil Engineering	7.0	2.8	8.6	4.5	2.0
Total	**3.5**	**5.6**	**8.4**	**3.8**	**0.0**
Renovation					
– Residential	8.0	6.9	0.3	-1.5	-3.1
– Private Non-Residential	2.0	4.8	2.0	-2.5	-2.0
– Public Non-Residential	9.0	4.0	4.0	1.0	0.7
Civil Engineering	8.0	4.6	7.7	3.5	2.0
Total	**6.5**	**5.8**	**2.1**	**-0.8**	**-1.7**
Total Investment	**5.0**	**5.7**	**5.1**	**1.4**	**-0.8**

Source: Cresme

In 2002, the new construction sector, which was very dynamic during 2000 and 2001, has shown a slower rate of growth and gained 3.8 per cent compared with the previous year. The workload in residential and non-residential sectors increased by 4.0 and 3.0 per cent respectively, and considerable efforts were made to further improve the country's infrastructure. Environmental projects such as new river banks and coastal protection works, as well as the high-speed railway line along the Turin-Milan-Bologna corridor and a motorway linking the Tirreno and Brennero passes have all contributed to strong civil engineering activities and a high demand for asphalt finishers in the last two years. In the next few years several investment projects, including new works associated with the Florence-Bologna motorway and new roads within Rome and Turin in preparation for the 2006 Winter Olympic Games, will undoubtedly receive multi-billion euro funding and will also create further demand for asphalt finishers.

After high levels of maintenance and refurbishment activity, investment in the renovation sector declined by 0.8 per cent in 2002, primarily due to the withdrawal of government tax incentives for property renovation. However, the civil engineering repair and maintenance sector, assisted by a high level of EU funding, increased by 3.5 per cent compared with the previous year.

In common with many other Italian manufacturing industries, the construction sector, which employs 1.62 million people, is still highly fragmented and the country, with an estimated 20,000 construction companies, does not boast the same number of giant contracting companies as Germany, France or the United Kingdom. The performance of the 20 largest firms is shown below.

Table 4. Italy: Financial Performance of Major Construction Companies, 2001

Company	HQ Location	Number of Employees	Turnover (€ Mn)
Impregilio	Milan	26,222	1,432.2
Astaldi	Rome	6,080	655.5
Coopsette	Reggio Emilia	1,045	377.6
Condotte d'Acqua	Rome	1,976	372.4
Coopcostruttori	Argente FE	2,283	334.8
CMC	Ravenna	4,236	296.5
Bonatti	Parma	737	265.3
Pizzarotti	Parma	1,837	264.4
CMB	Carpi MO	711	259.8
Unieco	Reggio Emilia	510	214.3
Grandi Lavori Fincosit	Rome	684	180.3
Baldassini-Tognozzi	Calenzano Fi	540	179.6
Cesi	Imola	450	160.5
Garboli-Conicos	Rome	471	160.1
Rizzani de Eccher	Udine	823	154.9
Vianini Lavori	Rome	158	136.9
Orion	Reggio Emilia	343	136.1
Pavimental	Rome	576	125.4
Coop.di Costruzioni	Bologna	674	124.5

Source: Costruire

MARKET SIZE AND TRENDS

Table 5. Italy: Sales of Backhoe Loaders by Type, 1994-2002

	Rigid		Articulated		4WS		Total	
	Units	%	Units	%	Units	%	Units	%
1994	1,225	55	708	31	317	14	2,280	100
1995	1,469	53	770	28	515	19	2,754	100
1996	1,777	58	758	25	548	17	3,083	100
1997	1,994	63	591	19	577	18	3,162	100
1998	1,780	59	667	22	573	19	3,020	100
1999	1,850	58	640	20	710	22	3,200	100
2000	1,680	54	620	20	814	26	3,114	100
2001	1,783	53	670	20	898	27	3,351	100
2002	1,644	52	634	20	878	28	3,156	100

Source: Off-Highway Research

The size of the backhoe loader market in Italy as described in this report is based on personal interviews with manufacturers and supplies, and does not necessarily reflect the data provided in the official exchange amongst suppliers. This exchange does not include all industry participants, and consequently consistently underestimates the actual size of the market by between 100 and 200 units per year.

The backhoe loader market has always been one of the largest and most stable sectors of all construction equipment types in Italy. Throughout the 1970s and the early 1980s, sales of backhoe loaders generally varied between 1,500 and 2,100 machines per year, and followed the fluctuating pattern of the Italian economy.

In the second half of the 1980s the trends towards renovation of the Italian road network and expansion of utility and maintenance projects, played an important role in expansion of the backhoe loader market which accelerated to 3,000 units in 1987 and soared to a record level in 1991 when 4,450 machines were sold.

The economic slowdown experienced after 1991, and the government cuts in public expenditure since then, have resulted in a slackening in construction work, which in turn caused a decline in demand for construction equipment including backhoe loaders. In 1993 the deepening economic recession and the construction crisis caused by corruption scandals amongst Italian construction companies seriously affected demand for backhoe loaders; as a result their sales declined to 2,170 units, a fall of 51 per cent compared with the peak demand in 1991.

The improvement in the economy since 1994 and a growing confidence amongst the more optimistic contractors, particularly in the North, has helped the backhoe loader market which increased to 2,754 units in 1995, reached 3,162 in 1997, only to ease by four per cent in 1998. A buoyant 1999 together with a successful promotion from Fiat-Hitachi and JCB brought the total backhoe loader demand up by six per cent to a level of 3,200 units.

After a slowdown in 2000, caused by government cuts in construction and a suspension of building projects prior to the election, the backhoe loader market recovered again in 2001 to reach 3,351 units. The dynamic level of sales can be traced in part to the relaunch of suspended pre-election works and in part to the tax incentives for replacing old machines, introduced by the new government.

The following year, 2002, was the best ever year for construction machinery sales in Italy, although the backhoe loader market began to show signs of overheating and sales started to falter by the end of the year. This trend has continued relentlessly in 2003 with a strong likelihood that future demand will be forever lower.

Several factors contributed to the fall in backhoe loader sales, including the withdrawal of government tax incentives and the crushing burden of over capacity and low utilisation as a large population of relatively new backhoe loaders chase declining work. Equally, it is difficult to witness the recent very high sales of mini and midi excavators, telescopic handlers, skid-steer loaders and compact wheeled loaders without feeling that they have taken away replacement sales from backhoe loaders. The easily manoeuvrable mini excavator with dedicated digging abilities is cheaper and much simpler to operate and is a mainstay of the owner operator sector; the telescopic handler is a very versatile tool in building construction and far better at handling than the 1.0 m^3 bucket of the backhoe loader; and the low-powered loader can do small repair and maintenance jobs far quicker.

In contrast to the European market as a whole, Italy has always shown a strong demand for locally produced articulated machines, which some manufacturers claim are more versatile, and offer better manoeuvrability and greater loading and handling abilities over the rigid units.

Despite a 15 to 20 per cent price difference between articulated and rigid units, the appeal of articulated machines has been strong and many small jobbing companies are willing to pay this premium because it enables them to work on a greater variety of job sites, thus offering a better earning potential. However, since 1994 the market for articulated machines has been eroded by the growing acceptance of all-wheel-steer (or 4WS) backhoe loaders which have very tight turning circles and thus good manoeuvrability, and are claimed to have improved stability and traction over competitive articulated machines when working in loading and handling operations. These machines have been actively promoted, particularly by JCB, and in 2002 sales of all-wheel-steer units reached 880 machines, or 28 per cent of the total backhoe loader market.

The backhoe loader in Italy is utilised approximately 70 per cent of the time in its excavator mode, and 30 per cent as a wheeled loader or tool carrier, a feature which has been unchanged over the last 10 years, despite the increase in horsepower of the standard machine and the improvement in loading applications.

Table 6. Italy: Sales of Backhoe Loaders by Horsepower Category, 1994, 2002

	1994		1998		2002	
Horsepower	**Units**	**%**	**Units**	**%**	**Units**	**%**
40-60	275	12	340	11	321	10
60-80	520	23	630	21	348	11
80-100	1,445	63	1,985	66	2,368	75
Over 100	40	2	65	2	119	4
Total	**2,280**	**100**	**3,020**	**100**	**3,156**	**100**

Source: Off-Highway Research

Backhoe loader demand extends over a wide spectrum of sizes, with engines ranging from 16 to 115 horsepower. Small, **under 40 horsepower** machines, which are not covered in this analysis, are often referred to as micro backhoe loaders, and are offered primarily by the domestic manufacturers such as Benny, Dalla Bona, Eurocomach, Amog and some importers including Kubota. It is estimated that in 2002 total sales of these machines did not exceed 100 machines.

The **40 to 60 horsepower** mini backhoe loader sector is mainly represented by several domestic suppliers, although JCB with its 47 horsepower 1CX model, incorporating the front end of its Robot skid-steer loader and the back end of a 2 tonne mini excavator, sells, on average, between 100 and 150 units per year, mainly to the Italian Army.

Compact, **60 to 80 horsepower** backhoe loaders have met with no great success and after initial interest the market has now fallen to about 350 units. Compact machines are aimed at the municipality and utility market in Southern and Central Italy where they are utilised on major repairs in urban areas as well as cable and pipe laying contracts.

The **80 to 100 horsepower** sector is still by far the most important in the Italian backhoe loader market, and in 1998 accounted for three-quarters of all sales. The standard backhoe loader sold in Italy now has a turbo-charged diesel engine of approximately 98 horsepower, an extendable dipper, a six-in-one loader bucket and a quick attach hitch system. Engine horsepowers have risen since the last report in response to the extra equipment needed to meet the emission standards of Euro II, but they do not affect what the customer will actually receive in the form of net horsepower to drive the hydraulic circuits. These machines represent the biggest sales category and they are particularly popular with single owner operators – *padroncini* – who use them on a variety of construction job sites. In 2002 the most popular backhoe loader models were the JCB 3CX, Komatsu WB93R with powershuttle transmission, Fiat-Hitachi FB110 and Venieri 7.23 and 5.23.

The national preference for four-wheel-drive side-shift backhoe loaders has remained unchanged. Although some models are offered with a centre post, sales of these machines are rare and the market remains dominated by four wheel drive side-shift units.

The main changes in product design in the last five years have occurred in improvements to the machines' working cycles and on-road performance, and to the operator's working environment. The greater use of electro hydraulic controls in both loading and digging positions, and the uprating of hydraulic systems have not raised the performance of machines, but have made their operations much more user friendly. Most backhoe loaders now feature quieter, more comfortable and better appointed ergonomic cabs fitted with suspension seats, tilt-adjustable steering columns and often air conditioning as standard. Although the design of loading and digging arms remains principally unchanged, they now offer better visibility and load control in both working and travelling modes. A quick change attachment mechanism – often hydraulically operated from the cab – and piping for a hydraulic hammer, are all being increasingly specified by Italian customers.

Finally, the travel performance of backhoe loaders between job sites has received much more attention, and the inherent vibration imposed on a driver has been reduced by the introduction of a boom suspension system which allows the operator to drive faster without being bounced around. Several backhoe loader models, fitted with powershift transmissions, are now being offered with a top travelling speed of up to 40 km/hr.

The regional pattern of backhoe loader sales is as wide as ever. The North and Central regions still represent the best markets, and in 2002 they accounted for 64 per cent of demand. Lombardia, Veneto, Piemonte and Emilia Romagna, with their large number of reconstruction, refurbishment and maintenance projects, are the best markets. The south of Italy (i.e. south of

Rome) takes 36 per cent of backhoe loader sales, and here the best selling regions are Compania, Sardinia, Puglia and, most recently Calabria.

Table 7. Italy: Sales of Backhoe Loaders by Geographical Region, 1998, 2002

(Units)

	1998				2002			
Region	**Rigid**	**Articulated**	**4WS**	**Total**	**Rigid**	**Articulated**	**4WS**	**Total**
North Centre								
Valle D'Aosta	4	-	1	5	1	2	1	4
Piemonte	178	82	68	328	117	59	54	230
Lombardia	317	118	119	554	294	75	115	484
Trentino	5	39	9	53	1	18	5	24
Veneto	179	77	46	302	216	74	62	352
Friuli-Venezia	98	13	29	140	111	12	43	166
Liguria	9	9	4	22	3	4	5	12
Emilia Romagna	137	58	41	236	134	48	50	232
Tuscany	85	27	20	132	65	37	39	141
Marche	54	25	27	106	50	9	35	94
Umbria	64	5	9	78	15	37	9	61
Lazio	120	49	27	196	142	28	42	212
Mezzogiorno-South								
Abruzzi	53	16	15	84	29	32	32	93
Molise	5	-	4	9	1	-	5	6
Campania	79	42	46	167	75	70	74	219
Puglia	123	13	25	161	116	22	49	187
Basilicata	29	5	8	42	40	5	18	63
Calabria	67	35	25	127	67	58	85	210
Sicily	84	43	24	151	76	34	57	167
Sardinia	90	11	26	127	91	10	98	199
Total	**1,780**	**667**	**573**	**3,020**	**1,604**	**634**	**878**	**3,156**

Source: Off-Highway Research

PRODUCTION

It is a constant source of wonder to many in the construction business that Italy, a relatively small market in world terms, can sustain such a large number and variety of construction equipment manufacturers. Production of backhoe loaders is no exception and there are at least eight Italian manufacturers operating in the sector, but only CNH, Komatsu and Venieri manufacture them in any significant volumes.

Table 8. Italy: Production of Backhoe Loaders, 1998-2002

(Units)

	1998	1999	2000	2001	2002
CNH	7,088	6,965	6,963	8,400	6,065
Komatsu	1,610	2,600	2,650	2,000	2,000
Venieri	554	563	567	556	532
Foredil	210	280	160	140	150
Palazzani	45	90	100	60	100
Fiori	50	40	40	75	75
Eurocomach	50	70	50	40	50
Amog	35	30	20	10	10
Total	**9,642**	**10,638**	**10,550**	**11,281**	**8,982**

Source: Off-Highway Research

Since the entry of New Holland (now referred to as CNH in the table below) in 1996, production of backhoe loaders has been dominated by rigid machines which in 2002 accounted for more than 70 per cent of total output. Articulated backhoe loader production has been on the decline since 1999 when Komatsu decided to move its production first to Turkey and, then in 2001 to the Czech Republic. Production of 4WS machines has almost doubled since the last report and now accounts for 20 per cent of total output.

Table 9. Italy: Production of Backhoe Loaders by Type, 1998, 2002

(Units)

	Rigid		Articulated		4WS		Total	
	1998	2002	1998	2002	1998	2002	1998	2002
CNH	6,288	4,880	-	-	800	1,185	7,088	6,065
Komatsu	1,230	1,500	380	-	-	500	1,610	2,000
Venieri	21	-	378	402	155	130	554	532
Foredil	-	-	210	150	-	-	210	150
Palazzani	-	-	33	70	12	30	45	100
Fiori	20	-	30	75	-	-	50	75
Euromach	-	-	50	50	-	-	50	50
Amog	-	-	35	10	-	-	35	10
Total	**7,559**	**6,380**	**1,116**	**757**	**967**	**1,845**	**9,642**	**8,982**

Source: Off-Highway Research

CNH is the leading manufacturer of backhoe loaders in Italy by a considerable margin, and accounts for about 22 per cent of European output. Its production plant in Imola, based on the site of the former Benati factory, was acquired by Fiat in 1991 and after a $25 million refurbishment began production of backhoe loaders in 1996. In 2002 the plant was extended by an additional 4,000 m^2 building to accommodate production of mini excavators for the CNH

Group. The overall site encompasses at present 114,000 m^{2}, including 27,000 m^2 of manufacturing space and employs 320 people, including 75 office and management staff.

The plant has an annual capacity of about 10,000 backhoe loaders but the production volume fell from 8,400 in 2001 to just over 6,000 in 2002 after the management decision to reduce exports to North America, which in the past accounted for two-thirds of production volumes, and to concentrate production on the side shift backhoe loaders for the European market. As part of this strategy CNH moved production of the Case backhoe loaders from France to the Imola plant where it joined the New Holland and Fiat-Hitachi brands.

The current production resources consist of a steel fabrication hall and an assembly hall linked by an overhead conveyor system. The steel fabrication hall has three separate fully automatic welding lines for producing booms, dipper arms, loader arms, and the two types of frame necessary for centre pivot and side shift rear ends. At the end of the welding lines components are taken through a process of sandblasting and painting, using an electrostatic powder paint process.

Backhoe loaders are presently assembled in a single shift (two shifts for steelwork) at a rate of about 30 machines per day. The assembly line has been developed along a conveyor system with 15 sub-assembly stations for components such as frames and axles, operating controls, and power trains. After about four hours on the assembly line, completed backhoe loaders are driven off to the testing area and then outside to the delivery area.

Table 10. CNH: Production of Backhoe Loaders by Model by Destination, 2002 (Units)

Brand	New Holland	New Holland	New Holland	Fiat-Hitachi	Case	
Destination	**North America**	**Europe**	**Others**	**Europe & Others**	**Europe**	**Total Production**
Horsepower						
75	LB75	-	LB75	-	-	615
84	-	LB85	LB85	-	-	147
89	-	-	-	-	580 Super M	1,731
92	LB90	LB95	LB95	FB90	-	490
99	-	-	-	-	590 Super M	237
110	LB110	LB110	LB110	FB100/110	-	1,660
110	-	LB115	LB115	FB200	695 Super M	1,185
Total	**1,140**	**1,160**	**215**	**1,150**	**2,400**	**6,065**
%	**19**	**19**	**3**	**18**	**40**	**100**

Source: Off-Highway Research

The current production range consists of 10 models in the 89 to 110 horsepower range under the Case, New Holland and Fiat Kobelco brand names.

The Case 580 Super M series of three models began to come off the Imola production line in Spring 2002. The Super M, which is a development of the Super L, has a modified rear hydraulic system which is progressive and more controllable than its predecessor.

The new cab has a new control system incorporating an onboard computer. The change of series has given an opportunity to install a larger fuel tank and a hydraulic oil reservoir in a moulding holding the tool box and the battery compartment. Finally, the loader geometry has been redesigned to give 18 per cent greater breakout force. At the same time the company launched the 695 Super M, a Case version of a CNH "common platform" machine. This gives Case an entry into the top end of the market, with four wheel steer and an engine of over 100 horsepower.

The New Holland three model range and the Fiat-Hitachi (now Fiat Kobelco) four model range were launched simultaneously in 1996 and updated in 2001. The latest introduction to the Fiat Kobelco range, the FB95 Evolution model, launched in Spring 2003 to replace the FB90 machine, features a new Tier 2 CNH diesel engine.

All backhoe loader rigid models carry a synchromesh transmission while the all-wheel-steer machines, launched in 1998 feature electronically controlled full powershift transmission with an automatic or manual gearbox and are now manufactured using "common platforms" and component sharing to reduce purchasing and manufacturing costs. All backhoe loader models will eventually be produced using the same, or similar, capital intensive components, such as diesel engines, transmissions or final drives, yet will have different brand features, such as styling, paint, or controls to appeal to different customers.

The roots of **Komatsu**'s manufacturing operation in Italy go back to 1988 when it contracted FAI, best known for production of backhoe loaders and skid-steer loaders, to manufacture construction equipment for distribution in Europe. The deal was strengthened in 1991 when Komatsu bought 10 per cent of the shares of FAI which led to full acquisition of the company in 1996.

The 130,000 m^2 plant in Este near Padova benefited from Komatsu's financial and technological strengths and now serves as the manufacturing base for Komatsu's compact (or utility) lines which are sold primarily in Europe.

The company now operates under the name of Komatsu Utility Europe SA, to reflect its core products, and within the 50,000 m^2 of covered factory space there are three assembly lines – one for rigid and all-wheel-steer backhoe loaders, one for both mini excavators and skid-steer loaders and the third for wheeled and crawler midi excavators. The production lines are formed into u-shaped configurations to allow greater flexibility of product mix on each line. Part of this flexibility is that the workers can more easily move to where they are most needed, depending on the size of the machines on the line, and complexity of operations carried out at each assembly station. Annual production is currently running at some 7,000 machines, and the factory complex (which includes fully robotised work stations for welding frames and a hydraulic cylinder assembly line) provides employment for 700 people.

Table 11. Komatsu: Production of Construction Equipment by Type, 1998-2002 (Units)

	1998	1999	2000	2001	2002
Backhoe Loaders	1,610	2,600	2,650	2,000	2,000
– Rigid	1,230	2,500	2,370	1,500	1,500
– Articulated	380	40	-	-	-
– 4WS	-	60	280	500	500
Mini Excavators	2,195	2,565	3,200	3,100	3,000
Skid-Steer Loaders	800	820	500	780	1,450
Crawler Excavators	425	460	700	650	490
Wheeled Excavators	330	285	460	330	225
Wheeled Loaders	25	-	-	-	-
Total	**5,385**	**6,730**	**7,510**	**6,860**	**7,165**

Source: Off-Highway Research

Backhoe loaders have traditionally been the company's core business, and in spite of successful diversification into mini excavators, the product still accounts for 28 per cent of total production.

The current line comprises six models. The two articulated WB70A and WB98A models are now assembled at the PBS plant in the Czech Republic at the rate of 220 units per year. In 1999 Komatsu introduced its first all-wheel-steer machine, the 98 horsepower WB97S model which features three steering modes – 2-wheel steering, 4-wheel and crab steering-controlled electronically. The 3 model range of Dash2 rigid backhoe loaders features the exclusive Syncro-System load sensing hydraulic system and the powershuttle transmission, which equips the WB91R-2 and WB93R-2, and the full powershift transmission fitted on the WB97R-2 model.

In 2002, Komatsu made an important strategic move and opened a new backhoe loader assembly plant in Newbury, South Carolina to serve the large American market. The factory assembles two standard models, the 86 horsepower WB140 and the 98 horsepower WB150 powered by Komatsu engines with Carraro axles and transmissions. It is thought that the Newbury plant will eventually take over the production of Komatsu's other utility equipment lines destined for the North American market.

Venieri, a family-owned company established in 1947, manufactures its range of construction equipment at the 20,000 m^2 plant in Lugo, near Ravenna. The company, which has a very good reputation on the domestic market but a very modest presence outside Italy, employs 110 people and in 2002 reported sales of €28 million. The plant has a capacity of 1,500 units per year and in the last five years production output has averaged between 800 and 1,000 units per year, divided between backhoe loaders(65 per cent) and wheeled loaders (35 per cent).

Table 12. Venieri: Production of Construction Equipment by Type, 1998-2002

(Units)

	1998	1999	2000	2001	2002
Backhoe Loaders	554	563	567	556	532
– Rigid	21	-	-	-	-
– Articulated	378	348	349	368	402
– 4WS	155	215	218	188	130
Wheeled Loaders	410	343	319	262	300
– Under 80 hp	290	230	219	172	180
– Over 80 hp	120	113	100	90	120
Total	**964**	**906**	**886**	**818**	**832**

Source: Off-Highway Research

Venieri has always considered itself to be a pioneer in modern backhoe loader design, having built its first four-wheel-drive backhoe loaders with equal sized wheels in 1973. The company introduced an articulated model in 1984 and in 1994 implemented the four-wheel steering (4WS) concept on its models. Production of rigid backhoe loaders was phased out in early 1999.

Venieri's six model range, from 52 to 115 horsepower and operating weights from 3.3 to 8.5 tonnes, was updated in 2002 and features a hydrostatic transmission with an automatic power regulation on all models. The range is divided into two parts; the articulated machines take up to two-thirds of the backhoe loader production programme which reflects the continuing importance and acceptance of the articulated concept in Italy and the company's commitment to the domestic market. The three four-wheel-steer models, in the 52 to 105 horsepower category, account for about 30 per cent of production output, with the 1.33 mini backhoe loader model being the most popular.

In the past Venieri branded its articulated backhoe loaders for other companies including MF Industrial and Case.

Foredil, a private company owned by the Paccagnella family, has been manufacturing backhoe loaders since 1972. Its current range of four articulated models from 57 to 114 horsepower is manufactured at the Casselle di Selvazzano plant near Padova. This facility also accommodates a small production of hydrostatic wheeled loaders.

There are several other companies manufacturing backhoe loaders, primarily for the domestic market. Their combined production output, however, excluding backhoe loaders below 40 horsepower does not exceed 250 units per year. The more important of these include **Palazzani**, also known for production of small hydrostatic wheeled loaders and overhead aerial platforms; **Fiori**, better known for production of self-loading mobile mixers and site dumpers; **Eurocomach**, which used to trade under the Baraldi name and, finally, **Amog** which in the past produced crawler loaders and rigid frame wheeled loaders for Benati and since 1990 has been making a small quantity of articulated backhoe loaders and wheeled loaders.

COMPONENT SOURCING

One of the most significant changes in the Italian backhoe loader industry over the last 10 years has been the move from pure manufacturing to what are essentially assembly operations, relying on specialist component suppliers to deliver their products on a just-in-time basis. In this way backhoe loader manufacturers do not have to commit large human or financial resources to running component production or stock expensive materials. This in turn reduces business risks and the overall production cost of backhoe loaders and makes the product more competitive in both domestic and export markets. However, most Italian manufacturers still have a high degree of self-sufficiency in low technology components such as frames, booms and other major steelwork which are invariably produced in their workshops or are sub-contracted locally.

Table 13 summarises the component sourcing policies of the leading manufacturers, but some additional comments are necessary.

Table 13. Italy: Component Sourcing for Backhoe Loaders, 2003

	CNH					
	Case	**Fiat Kobelco/ New Holland**	**Komatsu**	**Venieri**	**Foredil**	**Palazzani**
Engines	Case	CNH	Komatsu	Perkins	Perkins, Yanmar, Deutz	PB30: Yanmar, Other: Perkins
Transmissions	Carraro, Spicer	Powershift: Spicer Powershuttle: Turner	Carraro, Spicer	Hydrostatic: Bosch-Rexroth	Hydrostatic: Bosch-Rexroth	Hydrostatic: Bosch-Rexroth
Hydraulic Pumps	Parker	Casappa	Commercial, Bosch-Rexroth	Bosch-Rexroth	Bosch-Rexroth	Bosch-Rexroth
Axles	Carraro	Carraro	Carraro	1.3: EME Modena Artic: Carraro 4WS: Spicer	Carraro, Spicer	Spicer
Cabs	CNH Croix	CNH Modena	Italcab	Brieda, Lochman	Italcab	Brieda
Seats	Various	Various	Klepp	Grammer	Italcab	Grammer
Steelworks	In-house, sub-contracted	In-house, sub-contracted	In-house	Venieri	Foredil	Palazzani
Tyres	Goodyear, Michelin	Goodyear, Titan, Michelin	Various, mainly Goodyear	Michelin	Dunlop, Bridgestone, Mitas	Various

Source: Off-Highway Research

CNH relies heavily on the just-in-time concept. The company has installed a highly sophisticated handling system within the plant for the sub-assemblies which are built to precede the final assembly process.

Engines for Case branded machines come from the Case-Cummins joint venture. The whole transmission, that is to say, both axles, the torque converter and the gearbox, is sourced from Cararro. A powershift gearbox from Spicer also features on some models. New Holland and Fiat Kobelco branded models continue to source their engines from the CNH plant in Basildon in the UK. Powershuttle transmissions are from Turner, powershift boxes are sourced from Spicer whereas axles are from Carraro. Hydraulic pumps are now out-sourced to Casappa from Italy whereas previously these were supplied by Ultra from the UK. All steelwork components are made at the plant or sourced from local suppliers.

Komatsu continues to use its own engines whilst transmissions and axles are sourced from Cararro or, for the WB97 model, from Spicer. Cabs are now supplied by Italcab where previously they were outsourced to Brieda and Lochmann. The company makes a point of fabricating in-house as many of the steelwork components as it can, arguing that since the basic machine is subject to severe price competition because of the nature of the construction equipment industry, it has to maximise its retained profit by making these in-house.

Venieri uses exclusively Perkins diesel engines on its models. For economic reasons the company ceased production of dry disc brake axles in 2001 and now draws them from specialist suppliers. Hydrostatic transmissions with automatic power regulation are now fitted on all models and incorporate Bosch-Rexroth components.

Foredil makes nearly all structural elements including chassis and arms in-house. It uses Deutz engines, although on the small, under 40 horsepower models, it utilises Perkins and Yanmar engines. Hydrostatic transmissions with Bosch-Rexroth variable displacement pumps and motors are used in all models, whilst axles are from Carraro or Spicer.

Palazzani sources its diesel engines from Perkins, although its smallest PB model, is experimenting with Yanmar. Hydrostatic components, including hydrostatic drives, are mainly from Bosch-Rexroth, while axles are sourced from Spicer.

FOREIGN TRADE

Table 14. Italy: Exports of Backhoe Loaders by Manufacturer, 1998-2002

	1998		1999		2000		2001		2002	
	Units	**%**	**Units**	**%**	**Units**	**%**	**Units**	**%**	**Units**	**%**
CNH	6,690	94	6,500	93	6,400	92	7,850	93	5,500	91
Komatsu	1,140	71	1,950	75	2,200	83	1,650	82	1,600	80
Venieri	190	34	210	37	200	35	190	34	195	36
Others	185	-	200	39	160	43	90	28	100	26
Total	**8,205**	**85**	**8,860**	**83**	**8,960**	**85**	**9,780**	**87**	**7,395**	**82**

Source: Off-Highway Research

Historically Italian production of backhoe loaders has been primarily aimed at the domestic market with **exports** accounting for as little as 40 per cent of local output. However, the entry of CNH's production in Italy, together with the dynamic expansion of Komatsu's export trade, helped to increase the export rating from 85 per cent in 1998 to 87 per cent of the total production in 2001. The CNH decision to transfer a great proportion of its production from Imola to Burlington, to assist Case and New Holland performances in the USA, reduced the overall export ratings from Italian plants to 82 per cent in 2002.

In 2002 **CNH** exported 5,500 machines with Europe being the most important export destination. Case dealers took over 1,700 backhoe loaders with France and the Iberian peninsula being the strongest destinations. The Fiat Kobelco dealers were at their best in Spain and France, while the best markets for New Holland branded backhoe loaders were in Spain, France, Denmark and the United Kingdom.

Komatsu now builds 2,500 units a year at its Este plant, over 80 per cent of which was exported in 2002 including 600 units to other European countries. The main export markets included Spain (280 units), France (160 units) and Portugal (95 units).

Venieri exported 36 per cent of its backhoe loader production mainly to France, Spain and Tunisia.

The major **import** source of backhoe loaders to the Italian market has been the United Kingdom with the three major manufactures JCB, Caterpillar and Terex-Fermec accounting for some 99 per cent of total Italian imports in 2002.

MARKET SHARES

Table 15. Italy: Suppliers of Backhoe Loaders and Their Market Shares, 1998-2002

	1998		1999		2000		2001		2002	
	Units	**%**	**Units**	**%**	**Units**	**%**	**Units**	**%**	**Units**	**%**
JCB	976	32	1,029	32	1,071	34	1,080	32	1,065	34
Komatsu	460	15	445	14	510	16	530	16	458	15
Caterpillar	355	12	374	12	320	10	500	15	456	14
Fiat-Hitachi	395	13	455	14	465	15	473	14	398	13
Venieri	348	12	344	11	351	11	354	11	288	9
Case	172	6	191	6	154	5	122	4	149	5
Foredil	77	3	94	3	46	1	90	3	106	3
Palazzani	35	1	65	2	80	3	46	1	70	2
Fermec/Terex-Fermec	77	3	83	3	37	1	62	2	46	2
Fiori	30	1	30	1	25	1	50	1	50	2
Eurocomach	40	1	50	2	40	1	34	1	41	1
Volvo	-	-	-	-	-	-	-	-	15	-
Amog	25	1	20	1	15	-	10	-	10	-
Hidromek	-	-	-	-	-	-	-	-	4	-
CGT	30	1	20	1	-	-	-	-	-	-
Total	**3,020**	**100**	**3,200**	**100**	**3,114**	**100**	**3,351**	**100**	**3,156**	**100**

Source: Off-Highway Research

Since Off-Highway Research's last report on the Italian market, the relative positions of the leading suppliers have remained largely unaltered. JCB has consolidated its dominance in the sector whilst Komatsu, Caterpillar and Fiat-Hitachi have achieved a similar performance. The only other two suppliers of note are Venieri and Case, although they have been unable to penetrate the market effectively.

JCB, with its strong image and imaginative packaging of the mass-produced machine, still leads the overall market by a considerable margin, and in the last nine years its share of the market has never fallen below 32 per cent.

Over the last three years the company has developed a new generation of 2CX, 3CX and 4CX models bringing the total backhoe loader range to 11 models which greatly helped to retain its high share of sales in Italy.

The new version of the compact 2CX has styling in line with bigger machines and features better visibility from the cab and a 4-speed synchro shuttle transmission. The side shift frame has been widened and various improvements were made to increase machine's durability and performance. In Italy JCB directs its efforts towards building work and sells a version with hydraulic attachment linkage and a 4-in-1 bucket.

Table 16. Italy; Suppliers of Backhoe Loaders and Their Market Shares by Type, 2002

	Rigid		Articulated		4WS		Total
	Units	%	Units	%	Units	%	Units
JCB	704	66	-	-	361	34	1,065
Komatsu	239	52	123	27	96	11	458
Caterpillar	264	58	-	-	192	42	456
Fiat-Hitachi	252	63	-	-	146	37	398
Venieri	-	-	246	85	42	15	288
Case	130	87	-	-	19	13	149
Foredil	-	-	106	100	-	-	106
Palazzani	-	-	58	83	12	17	70
Fiori	-	-	50	100	-	-	50
Terex-Fermec	36	78	-	-	10	22	46
Eurocomach	-	-	41	100	-	-	41
Volvo	15	100	-	-	-	-	15
Amog	-	-	10	100	-	-	10
Hidromek	4	100	-	-	-	-	4
Total	**1,644**	**52**	**634**	**20**	**878**	**28**	**3,156**

Source: Off-Highway Research

All new 3CX and 4CX models feature new style automotive quality cabs, built by the company at its modern Rugeley plant, with seat mounted controls and new four and six speed powershift transmissions. All powershift models have a higher maximum speed of 25 mph whereas the top speed with the synchro shuttle remains at 22 mph. New style front loader arms and bigger hydraulic cylinders helped increase loader tearout and lift capacity by a considerable margin.

The 3CX turbo-charged machine remains the company's best selling model and accounted for 52 per cent of JCB's sales in 2002. The 4CX has moved up to occupy 26 per cent of units sold in 2002. Its equal sized wheel, four-wheel-steer models with good floatation tyres and large hydraulic output for hammer work are aimed at the owner operator sector working in tough ground conditions. The hydrostatically driven 49 horsepower 1CX model has also found plenty of customers and took 14 per cent of JCB's sales in 2002. Italy remains the best market for these small machines and since its introduction in January 1994 more than 1,000 units have been delivered, mainly to Italian utility and building companies working in central and southern parts of the country.

Komatsu, trading in the past under the name FAI, has been marketing backhoe loaders under its own name since 1998. After initial problems related to an unimpressive product range and inefficient distribution network, the introduction of the new Dash2 rigid and four-wheel-steer models featuring the load sensing hydraulic system, and the formation of a fully owned sales subsidiary, Komatsu Italy SpA, have helped the company to achieve a stable penetration in this prestigious market.

The 98 horsepower WB93R-2 rigid model was the best selling machine in 2002, although the WB975S-2 four-wheel-steer model has also proved popular with Italian owner operators. The company also markets two articulated models now sourced from the Czech Republic. These machines are declining in popularity and in 2002 accounted for 27 per cent of Komatsu sales, down from 49 per cent in 1998.

Caterpillar overtook Fiat-Hitachi and progressed to third place in 2001 when its market share reached 15 per cent. Caterpillar's strength in Italy lies in its comprehensive dealer network represented by CGT and MAIA and the good resale value of its equipment, while a new line up of five D-series rigid and four-wheel-steer backhoe loader models has helped to improve sales in the last two years.

The D-series has a much wider angle of rotation for the backhoe on its pin, now up to 205 degrees. The backhoe has a 10 per cent increase in boom and stick forces over the C-series. Pilot controls are now standard for the stabilisers; and pilot controls for the entire system are now offered on the two top of the range machines. The 438 and 442 models can be specified with all-wheel-steering and the 424 and 428 are available in narrow frame version to allow transport within an enclosed truck.

The majority of sales are of the 428 model with hydraulic controls, but it is on the 432 and 442 with the pilot controls that Caterpillar is pinning much of its hopes. Despite initial reluctance, Italian customers are increasingly specifying machines with pilot controls.

Fiat Kobelco is the new brand name given to the former Fiat-Hitachi products since August 2002. When Fiat-Hitachi was dissolved, the backhoe loader models that were formerly part of the Fiat-Hitachi Compact Line adopted the new name.

Fiat-Hitachi started selling a badged New Holland range in 1996, and its immediate success has been due almost entirely to its comprehensive and high quality dealer network combined with a strong brand image. After strong sales which lasted until 2001, the 2002 performance was doubtless affected by the uncertainty arising from the ending of the Fiat-Hitachi relationship.

Given the strong corporate commitment to the new company together with the introduction of new backhoe loader models in 2003, Fiat Kobelco has great potential to improve its market share within the next two to three years.

Venieri lost market share in 2002 mainly because of strong competition, a decline in the general demand for articulated units, and the lack of an aggressive approach to the domestic market by some of its dealers.

The 92 horsepower 5.23 and the 102 horsepower 7.23 articulated models have traditionally accounted for the majority of Venieri's sales, although the ultra-compact 1.33 model, featuring a 52 horsepower Perkins engine, and four-wheel-steering, has also proved popular with jobbing contractors working on sites where operating space is at a premium.

Case offers a limited product range although, over the years, the company has attracted a small but loyal customer base which favours the French designed machines with their Servopower or Powershift transmission options. The transfer of production from Crepy-en-Valais to the CNH plant in Imola in 2001 has had minimal impact on Italian sales and the company has maintained a steady market share of about five per cent.

Foredil with its range of articulated machines has been present on the domestic market for 30 years. Its best selling models remain the 20.13 and the 30.13 articulated machines, which are popular amongst building companies working in the mountainous regions of Bolzano, Trento and Pescara.

Fermec, a well established name on the Italian market, after the takeover by Case in 1996 and then by Terex in 2000, has suffered a decline in market share. However, the company still provides a limited range of high spec, high power machines to its loyal customers and in the last two years accounted for two per cent of the market.

Finally, at the end of 2002 **Volvo** began selling its single model produced in Poland and hopes to sell at least 100 units in 2003.

MARKETING AND DISTRIBUTION

Since the last Off-Highway Research report was published in 1999 the distribution networks of the major suppliers have remained relatively stable, although there have been some important changes which are detailed below.

Table 17. Italy: Distribution Networks of Leading Backhoe Loader Suppliers, 2003

Manufacturer	Importer or Dealer	Sales and Service Branches	Sub-Dealers and Agents
Case	18 independent dealers	No	Yes
Caterpillar	CGT SpA	24	No
	MAIA SpA	20	No
Fiat Kobelco	19 independent dealers	No	Yes
Foredil	-	1	18
JCB	JCB SpA	1	32
Komatsu	Komatsu Italia SpA	2	48
Palazzani	-	-	Yes
Venieri	Venieri Commerciale SpA	1	4
	Macchine Industriali MAIA SpA	18	No
Volvo	Volvo Construction Equipment Italy	No	Yes

Source: Company Information

In 2001 **Case** closed its subsidiary company in Milan and its dealership network is co-ordinated from the CNH headquarters in Turin.

Caterpillar's distribution system has always been considered to be one of the best and most comprehensive in Italy. Because of the geographical structure of the country, the company operates through two well established independent dealer importers, Compagnia Generale Trattori (CGT) which covers northern Italy, and Macchine Agricole Industriali Automezzi (MAIA) which covers central and southern regions of the country.

CGT, which in 2002 delivered about 215 backhoe loaders is based in Milan and utilises 24 sales and service branches from Aosta to Ancona and Perugia. It employs about 1,000 people and in 2001 had a turnover of €43.2 million. Sales of Caterpillar industrial and earthmoving products are supplemented by several other franchises including Locatelli mobile cranes, Hyster industrial lift trucks as well as growing activity in the plant rental division.

- Bolzano
- Padova
- Milan
- Verceli
- Genova
- Bologna
- Arezzo
- Trento
- Turin
- Cuneo
- Sandrio
- Mosca
- Carraro
- Rimini
- Ancona
- Monterotondo
- Udine
- Treviso
- Verona
- Livorno
- Florence
- Perugia
- Aosta

MAIA, through its 20 branches including two overseas locations in neighbouring Malta and Albania employs 700 people, including 200 service mechanics and in 2001 had a turnover of €25.1 million. The company has also become active in the rental business market while sales of non-Caterpillar machines, including Venieri, Yanmar, Terexlift and Thomas products, are handled through the recently established MAIA National Line company.

- Rome
- Orte
- Frosinone
- Abruzzo
- Caserta
- Potenza
- Bari
- Oristano
- Foggia
- Cosenza
- Catanzaro
- Catania
- Messina
- Palermo
- Cagliari
- Sassari
- Albania
- Malta

Fiat Kobelco has taken over the former **Fiat-Hitachi** network. It sells its compact line, including backhoe loaders, through 18 independent regional dealers co-ordinated by the sales and marketing organisation of Fiat Kobelco in Turin.

Table 18. Fiat Kobelco: Distribution Networks in Italy, 2003

Distributor	Location	Heavy Line	Compact Line
Ben Mach c/o MAIE	Ravenna		X
Bottegoni	Palermo	X	X
C.A.I. Milano	Milan	X	X
Car Toscana	Migliarino Pisano		X
CMO Centro Macchine Operatrici	Curno (BG)		X
Comes	Magione (PG)		X
C.O.M. IN	Rende (CS)	X	X
HTM Maschinen	Salorno (BZ)		X
Mac. In. Tek	Rome		X
MAIE	Ravenna	X	
Maier Sud	Caserta (CE)	X	X
Maren	Curno	X	
M.C.	Pescara	X	X
Miart	Potenza	X	X
Miniello Nicola	Campabasso		X
O.R.M.I.	Reggio Calabria	X	
Saccomandi	Surbo (Le)		X
Salomoni	Campoformido (UD)		X
Sogemac	Borgovercelli (VC)	X	X
Uniter	Zoppola (PN)		X

Source: Company Information

Ben Mach, part of the MAIE organisation based in Ravenna is by far the most important dealer for Fiat Kobelco. MAIE, the €200 million distribution company has operated since 1971, covers five regions, has five branches and 20 sub-dealers, including 15 authorised service dealers and sells, on average, 1,000 Fiat machines per year. In addition, the company acts as an I-R Bobcat regional dealer and with annual sales of 2,000 machines is the largest Bobcat dealer in Europe. MAIE also represents O&K and Wirtgen products in several regions of Italy and has a rental fleet of about 700 machines.

JCB, the leading supplier of backhoe loaders, has benefited throughout the 1990s from having a powerful and stable network of 32 independent dealers supported by three area managers.

The large presence at Assago, the headquarters of JCB Italy in Milan, is a major asset to the sales effort. On the modern site the company has a stock of spare parts, a training facility as well as marketing and administration offices. Overall, the company employs 38 people and in 2002 had a turnover of €124 million.

Komatsu has its sales and distribution of backhoe loaders co-ordinated by Komatsu Italia SpA formed in April 2002 and located at modern offices in Noventa Vicentina with administration and technical staff of 81. In addition to its two branches located in Milan and Imola, the company operates through a network of 48 dealers with Paccani Macchine in Bergamo and Bauma Edil Service in Udine being the most important in 2002. The technical support to Komatsu machines working in Italy comes from 80 authorised service stations.

Palazzani sells directly from its plant near Brescia as well as through a small network of dealers and commission agents.

In the south of Italy, **Venieri** backhoe loaders are handled through the recently established Macchine Industriali MAIA SpA, whereas in northern and central Italy Venieri Commerciale in Bagnacavallo is run by the Venieri family, and account for about 60 per cent of total Venieri sales in Italy. Venieri’s most effective sub-dealers are Paniero in Turin, Mara in Genoa and CAM in Milan.

PRICING

The subject of pricing policies is a very complex and sensitive issue in much of the Italian construction equipment industry, and the backhoe loader market is no exception.

Table 19. Italy: List Prices of Selected Backhoe Loaders, 2003

(€'000)

Manufacturer	Model	Type	Engine HP	List Price
JCB	1CX	Rigid	49	44.0-50.0
	2CX	4WS	66	58.0-64.0
	3CX	Rigid	89/98	64.0-78.0
	3CX	4WS	98	80.0-90.0
	4CX	4WS	98	83.0-97.0
Komatsu	WB93R-2	Rigid	98	62.0
	WB97R-2	Rigid	98	64.0
	WB97S-2	4WS	98	71.0
	WB790A-1	Articulated	71	57.0
	WB98A-2	Articulated	96	79.0
Venieri	1.33	4WS	52	40.0
	6033	4WS	67	61.5
	10.33	4WS	105	79.0
	5.23D	Articulated	92	70.5
	7.23B	Articulated	102	78.7
	9.23	Articulated	115	97.8

Source: Off-Highway Research

Generally, manufacturers of backhoe loaders sell their machines to dealers at discounts of between 32 to 42 per cent of their list price, although dealers can earn extra discounts for exceeding sales quotas, or for machines which are used for demonstration purposes. In turn, dealers add their own mark up of usually 10 to 15 per cent, and then give discounts to customers in the process of negotiating a final transaction price.

Most customers expect discounts of 25 to 40 per cent on list prices and are prepared to pay between €40,000 and €50,000 for a standard machine depending on the commercial considerations involved. At the very least the buyer will expect two to three digging buckets in the deal but he will also be looking for features like a telescopic boom, a 6-in-1 bucket or pilot controls.

POPULATION AND END-USERS

There are no official statistics for the population of backhoe loaders in Italy, but Off-Highway Research estimates, based on the average level of sales since 1991 and taking into account the 20 to 30 per cent annual scrappage rate, that the population by the end of 2002 had reached 28,100 units.

Table 20. Italy: Population of Backhoe Loaders by Manufacturer, 2003

	Units	%
JCB	8,350	30
Komatsu/FAI	5,200	19
Venieri	3,300	12
Caterpillar	3,000	11
Fiat-Hitachi	2,600	9
Case	1,400	5
Fermec/MF	750	2
Foredil	700	2
Others	2,800	10
Total	**28,100**	**100**

Source: Off-Highway Research

The leading two suppliers make up almost half of the field population with 13,550 units. JCB has the largest population of 8,350 machines or 30 per cent, followed by Komatsu (FAI) with 5,200 machines or 19 per cent of the population.

The productive life of a backhoe loader varies enormously according to the nature of its application, but on average is estimated to be between six and eight years.

However, the average annual utilisation is low and 600 to 700 hours is now the industry standard with some machines recording less than 300 hours per year.

Table 21. Italy: Population of Backhoe Loaders by End-User Sector, 2003

	Units	%
Owner Operators	12,300	46
General and Building Contractors	4,850	17
Public Utilities	4,300	15
Local Authorities	2,100	7
Plant Rental	1,450	5
Industry	1,400	5
Agriculture	700	2
Others	1,000	3
Total	**28,100**	**100**

Source: Off-Highway Research

Without doubt the largest and most important users of backhoe loaders, accounting for 46 per cent of the population, remain the small owner operators – padroncini – who work as sub-contractors on a variety of projects. They undertake fairly basic work for larger contracting companies or do jobs requiring trenching, digging and excavating for most types of utility.

The majority of backhoe loaders in Italy are used on road work and housebuilding sites, with the result that the second most important category of buyers are the small jobbing contractors and small building firms, which will utilise these machines on a number of different sites. They account for 17 per cent of the total population.

Public utility companies with large numbers of gas, electricity, water and telephone and maintenance contracts have become increasingly important buyers of backhoe loaders and in the last five years their share of the population advanced from 12 to 15 per cent. However, they still employ owner operators or small jobbing firms.

In contrast to the United Kingdom, rental of backhoe loaders has not really advanced at all in the last five years, although some suppliers now estimate that as much as five per cent of the total population is used by the rental sector. Some backhoe loader suppliers are now building rental fleets with Caterpillar, Komatsu and Fiat Kobelco dealers being the most prominent among them. Rental rates depend on the duration of rental contract and the type of the machine. On average a 90 horsepower rigid backhoe loader attracts a daily rate of about €175, while a month's rental daily rates are reduced to €125.

FORECAST

Table 22. Italy: Forecast Sales of Backhoe Loaders, 2003-2007

(Units)

2003	2004	2005	2006	2007
2,300	1,900	2,000	2,200	2,300

Source: Off-Highway Research

The last seven years have been one of the most successful periods in the Italian backhoe loader market with annual demand remaining at 3,000 units. However, with a large population of relatively new machines chasing declining levels of work, the withdrawal of government tax incentives under the Tremonti Law and a strong demand for alternative machines such as mini and midi excavators, compact wheeled loaders and telescopic lift trucks, one can no longer expect a sustainable demand.

In the first six months of 2003 sales of backhoe loaders were reported to be 25 per cent lower compared with the previous year and the belief amongst many interviewees is that the market will decline 27 per cent in 2003 and a further 17 per cent in 2004. In the following years the market should settle at what may be considered a replacement level of between 2,000 and 2,300 units per year.

As far as the product mix is concerned, rigid models will continue to dominate the market. The interest in four-wheel-steer backhoe loader, will continue to grow further, mainly at the expense of articulated units. The articulated models will not disappear but volumes will remain at about 250-350 units per year and this market will stay in the hands of domestic manufacturers.

MACHINES AVAILABLE

The types of machine in the table below are:

- R – Rigid chassis
- 4WS – Four-wheel-steer
- A – Articulated chassis

Service weights are approximate, as the choice of backhoe can increase the weight by 200 kilogrammes or more.

Table 23. Italy: Backhoe Loaders Available, 2003

Manufacturer	Model	Type	Engine HP	Engine Manufacturer	Service Weight (Tonnes)	Product Source
Amog	DKT304.1	A	50	Perkins	3.1	Italy
	DKT404H	A	57	Perkins	4.8	Italy
	DKT600H	A	80	Iveco	6.6	Italy
Case	580 Super M	R	89	Case	7.8	Italy
	590 Super M	R	99	Case	8.2	Italy
	695 Super M	4WDS	110	Case	8.7	Italy
Caterpillar	424D	R	74	Perkins	7.1	United Kingdom
	428D	R	80	Perkins	7.4	United Kingdom
	432D	R	85	Perkins	7.6	United Kingdom
	438D	4WS	93	Perkins	6.3	United Kingdom
	442D	4WS	97	Perkins	7.5	United Kingdom
Fiat Kobelco	FB95 Evolution	R	95	CNH	8.1	Italy
	FB100.2	R	110	CNH	8.4	Italy
	FB110.2	R	110	CNH	8.4	Italy
	FB200.2	4WS	110	CNH	8.7	Italy

(continued)

Table 23. Italy: Backhoe Loaders Available, 2003 (continued)

Manufacturer	Model	Type	Engine HP	Engine Manufacturer	Service Weight (Tonnes)	Product Source
Fiori	TA450	A	42	Yanmar	3.1	Italy
	TA700	A	61	Perkins	4.8	Italy
Foredil	1.13	A	28	Perkins	1.9	Italy
	5.13	A	36	Yanmar	3.2	Italy
	30.13	A	100	Deutz	7.2	Italy
	40.13	A	100	Deutz	7.6	Italy
Hidromek	HMK102B	R	100	Perkins	8.0	Turkey
	HMK102S	4WS	100	Perkins	8.5	Turkey
JCB	1CX	R	49	Perkins	2.8	United Kingdom
	2CX	4WS	66	Perkins	5.6	United Kingdom
	3CX	RE	89/98	Perkins	8.1	United Kingdom
	3CX Super	4WS	98	Perkins	8.4	United Kingdom
	4CX	4WS	98	Perkins	8.6	United Kingdom
	4CX Super	4WS	98	Perkins	8.9	United Kingdom
Komatsu	WB70A-1	A	71	Komatsu	5.6	Czech Republic
	WB91R-2	R	82	Komatsu	7.5	Italy
	WB93R-2	R	98	Komatsu	7.5	Italy
	WB97R-2	R	98	Komatsu	7.6	Italy
	WB97S-2	4WS	98	Komatsu	8.0	Italy
	WB98A-2	A	96	Komatsu	8.3	Czech Republic
Palazzani	PB30	4WS	52	Yanmar	3.3	Italy
	PB50	4WS	67	Perkins	5.5	Italy
	PB60	A	71	Perkins	6.1	Italy
	PB70	A	102	Perkins	6.5	Italy
	PB80.2	A	110	Perkins	8.2	Italy
	PB90.2	A	115	Perkins	8.5	Italy
Terex-Fermec	760	R	80	Perkins	7.3	United Kingdom
	860	R	91	Perkins	7.3	United Kingdom
	960 Elite	4WS	91	Perkins	7.8	United Kingdom
Venieri	1.33	4WS	52	Perkins	3.3	Italy
	6033	4WS	67	Perkins	5.8	Italy
	10.33	4WS	105	Perkins	8.1	Italy
	5.23D	A	92	Perkins	6.5	Italy
	7.23B	A	102	Perkins	7.2	Italy
	9.23	A	115	Perkins	8.5	Italy
Volvo	BL71	R	94	Volvo	8.1	Poland

Source: Company Information

DOMESTIC MANUFACTURERS

Amog

Amog Srl
Via Travi, 25
80040 Cercola (Na)

Tel: +39 081 7331588
Fax: +39 081 5551300
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CNH

CNH Construction Equipment
SS 610 Selice, 43/A
40026 Imola, Bo

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Fax: +39 0542 640 304
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Fiori

Fiori Spa
Via per Ferrara, 7
41034 Finale Emilia Mo

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Fax: +39 0535 90960
Website: www.fiori.com

Foredil

Foredil Macchine Srl
Via E. Fermi, 1
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Padova

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Fax: +39 049 897 7217
Website: www.foredilmacchine.com

Komatsu

Komatsu Utility Europe
Via Atheste, 4
35042 Este
Padova

Tel: +39 0429 616111
Fax: +39 0429 6000434
Website: www.komatsuitalia.com

Venieri

VF Venieri SpA
Via Piratello 106
48022 Lugo
Ravenna

Tel: +39 0545 904411
Fax: +39 0545 30389
Website: www.vf-venieri.com

Palazzani

Palazzani SpA
Via del Pavione, 4
25050 Paderno FC Brescia

Tel: +39 030 6857073
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IMPORTERS

Importer's Location	**Manufacturer's Location**
Case	
CNH Construction Equipment via Botticelli, 151 10154 Turin Tel: +39 011 0077861 Fax: +39 011 0077899 Website: www.casece.it	CNH Construction Equipment Via Botticelli, 151 10154 Turin Italy Tel: +39 011 0077 Fax: +39 001 0077 Website: www.casece.com
Caterpillar	
CGT SpA SS Padana Superiore, 19 20090 Vimodrone Milan Tel: +39 02 274271 Fax: +39 02 274274554	Caterpillar Overseas SA PO Box 456 76, Route de Frontenex 1211 Geneva 6 Switzerland Tel: +41 (0) 22 737444 Fax: +41 (0) 22 413323 Website: www.cat.com
MAIA SpA Via Nomentana 995 00137 Rome Tel: +39 06 82601 Fax: +39 06 8260338 Website: www.maiaspa.it	
Hidromek	
All dealers import directly from Turkey	Hidrolik Mekanik Makina Imalat ve Tikaret Sincom Organize Sanaya Bolgesi Osmanli Cadd. No. 1 06935 Ankara Turkey Tel: +90 (0) 312 267 1260 Fax: +90 (0) 312 267 1239 Website: www.hidromek.com

Importer's Location	**Manufacturer's Location**
JCB	
JCB SpA Via E. Fermi, 16 20090 Assago Milan	JCB Sales Rocester Staffordshire ST14 5JP UK
Tel: +39 02 4886501/48866401 Fax: +39 02 4880378 Website: www.jcb.com	Tel: +44 (0) 889 590312 Fax: +44 (0) 889 591222 Website: www.jcb.co.uk
Volvo	
Volvo Construction Equipment Srl Via Giovanni da Udine, 34 20156 Milan	Volvo Polska Sp.z.o.o ul. Mydlana 2 51-502 Wroclaw Poland
Tel: +39 02 380 93222 Fax: +39 02 380 93305 Website: www.volvoce.com	Tel: +48 71 34 50 700 Fax: +48 71 34 50 330 Website: www.volvo.com