

Talking Harvester Heads

A roundup of what's available.

The stroke processor may be uncommon now in these islands but they are still the favoured option for some contractors in other parts – Scandinavia and Canada to name a couple. There are even some new stroke heads coming onto the market, but, with the huge range of 'conventional' heads available, it is probably in order to deal with the stroke harvesters separately at a later date.

For a very short time I felled timber for a Kockums processor. The knives on the machine's ungainly boom reciprocated incessantly back and forth further down the strake, as if defying the cutter to take a break or relax with a cup of tea. Despite the threatening attitude of the lumbering machine, I happened to last longer than it did. It was sold on and replaced by an excavator fitted with a harvesting head. I was not needed by the Åkerman/Lako 60 combination, but I was not out of a job. I had been assured by the contractor that his price for harvesting and delivering timber to roadside would never fall below £12 a tonne, so there would always be work for the cutters.

That was over 20 years ago and other contractors were not so trustworthy. They upgraded the machinery, fine-tuned the rates and found that they won more contracts. 'My' contractor was forced to follow the trend. Don't feel too sorry for him though; my wife bumped into him in the bank the other day. He may have been depositing, he may have been withdrawing; but he certainly was not booked in to explain away

the rosy tint of his bank balance. The ruddiness in his complexion could only be ascribed to a good dose of Australian summer sunshine.

The harvester head, as we tend to know it, has proven a good traveller as well. It has even made inroads into the big timber of America's Pacific North West. One Oregon contractor had his first experience of the Scandinavian style head in 1997, and speaks very highly of its efficiency. The attachment happened to be a Keto 1000 and came to him through Canadian dealer Hakmet. Despite the felling capability of the 'dangle head' (as they are termed by American loggers), the Keto was used only for roadside processing and the carrier was a Thunderbird – not the 1960s cruising automobile from Ford, of course, but a secondhand Thunderbird 840 log loader constructed by Ross Equipment.

The T-bird was built on a Cat D6-H undercarriage and powered by a Cummins L-10 producing 250hp at 1900rpm. Powerwise, the contractor judged it to be just adequate for the task, although the boom geometry of the log loader gave it a distinct advantage over excavators for handling the big sticks on the landing. The track drive of the Keto was seen as essential for reducing the timber damage occasioned by rollers on the heavy logs. Felling the timber was still done with a chainsaw or 'Rotosaw' – a boom-mounted disc-saw felling head with cutters similar to those seen on some stumpgrinders.

There is a trick used to improve



John Deere H480 – the model number is retained in the Waratah range.

the efficiency of harvester heads employed only for processing, as they are up on Canada's Vancouver Island as well. If it is not necessary to turn the head into upright mode, as when felling, the link to the boom end can be shortened. This is said to reduce swing and oscillation of the dangle head, and considerably increases productivity at the landing. Some manufacturers cater for this option; some contractors modify the linkage themselves.

Just like the British Loglogic harvesting head, the Thunderbird log loader did not stay in production for a long period of time. Prices of imported machinery were undercutting domestic production. Loglogic has survived and thrived by concentrating on different sectors of the forest industry. Ross Equipment persevered with log loaders using less suitable Korean excavator bases and soon disappeared into US 'big iron' manufacturer Madill. Strangely enough some American attachment manufacturers (mainly in Canada) have managed to find

a market for home-built harvester heads despite the ready availability of European (and New Zealand) imports. Quadco, currently Keto dealers for Eastern Canada, now builds its own Ultimate S600 and S660 heads – 5 delimiting knives, feed speed of 4m/s – but felling is by means of a disc saw. The manufacturer of the Rotosaw itself, Risley Equipment of Alberta, now also offers its own Cobra chainsaw cutting and delimiting head with a 70cm cutting capacity and Dasa computer management.

Hahn Machinery Inc also produces a couple of fairly small capacity Scandinavian style 'single grip' harvesting heads, the HSG140 and HSG160. The original Hahn Harvester, however, was designed by Minnesota logging contractor Ray Hahn in the mid-sixties and is said to have been the first North American roadside processor. Combined with a grapple skidder and feller-buncher, the Hahn Harvester made logging operations 'simple, affordable and productive', according to the



Rottne EGS 590 (left), and the new Tigercat TH575 from Canada.



(Left) Valmet 370.1 showing the advantages of 'EcoOiling'. (Right) AFM 65 Combi, with a durable built-in grapple.

manufacturer. 'Big iron' constructor Tigercat offers a large range of forestry attachments along those traditional trans-Atlantic lines, such as feller-bunchers (both shear and disc-saw fitted). The Ontario-based company has also seen the need for its own Scandinavian style cut-to-length attachments in the form of the 650 and more recently the new TH575 head.

The newer Tigercat TH575 has a maximum cutting capability increased from 65cm to 70cm. The weight, however, of the 'dangle head' is increased by over 1000kg, despite the fact that one of the moving knives has been dispensed with. The feed force and feed speed have both been increased and refinements made to the options available, but given the power of the Tigercat carriers, it may be suspected that the head's chassis has undergone some upgrading, too.

While fellow American producer John Deere is also still producing 'drive to tree' attachments such as disc-saw feller-bunchers for its

domestic market, Waratah-OM Oy, a joint venture established in 2004 between John Deere and Outokummun Metalli Oy, produces all HTH 200 and HTH 400-series harvester heads for John Deere Forestry for factory installation, and for Waratah Forestry Attachments for loose distribution. The HTH 200-series was originally manufactured by Timberjack in Sweden, and the HTH 400-series by Outokummun Metalli Oy in Finland. Waratah New Zealand manufactures the HTH 600-series harvester heads.

New from Waratah is the FL85 felling head, availability of which has recently been extended to all markets. The SuperCut 300 saw unit has a nominal cutting width of 85cm with a maximum gripping width of 1100cm. The head has no delimiting capability and its main area of challenge will be the timberlands where the disc-saw fitted felling heads are currently working. Without doubt it will be seriously considered by logging companies and contractors in New Zealand.

Waratah NZ is now a subsidiary of John Deere, but South Waikato Precision Engineering Ltd (SWPE) retains ownership of Waratah Forestry Services. The team from the timber town of Tokoroa, North Island, are still available to 'Enzed' logging businesses and contractors for repair or service of Waratah harvesting heads. One special service offered by SWPE is the exchange system for repairs of larger components.

Back in the northern hemisphere, Swedish forest machine producer Rottne offers a similar parts service. In this case reconitioned components across the range are offered at repair cost price and delivered with the original warranty. The Rottne 'twin grip' processor, which delimited and crosscut felled stems across the back of the machine, was a huge success in its time, but Rottne's dedicated harvester range is now fitted with harvesting heads manufactured in the company's works at Stensele in the north of Sweden. The range is available only for fitment to Rottne harvesters.

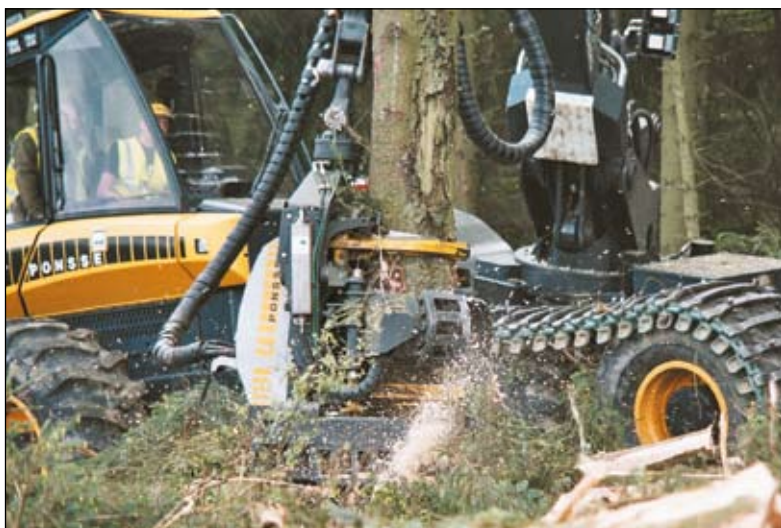
Komatsu Forest's Valmet harvesting heads have traditionally been associated with the Swedish-built wheeled harvesters, but the acquisition of US 'big iron' constructor Timbco a few years ago saw the company make a move into the American way of working. It is worth noting that the heavyweight heads are often considered to work at their best in processing mode when dealing with big timber; the task of felling is often better left to a comparatively lighter 'felling only' attachment, such as Valmet's 1.5t 233 bar saw felling head (83cm maximum cut). As it happens, neither has the lightest Valmet head, the 330.2 (also available in the Duo

harwarder version) found its niche in mainstream timber harvesting in the UK and Ireland. It must be a compliment to the design and durability of the popular Valmet harvesting heads that the range has changed little in recent years.

Harvesting heads from the Danish manufacturer Silvatec are commonly seen on the company's own eight-wheeled harvesters, but their use on excavator bases is certainly not unknown. They have proven to be particularly well suited to the requirements of contractors in the Republic of Ireland, for example. French machine producer Sogedep also favours Silvatec heads as standard equipment for its harvesters.

Over in Finland, Ponsse's range has recently been augmented by the introduction of the H8 for the new Bear harvester. Following its success, a lighter version (H7) is being introduced for mid-range harvester applications. Three other standard design harvester heads make up the series, together with a shear head designed specifically for harvesting energy crops – a feller-buncher in American terminology. It may be no coincidence that Ponsse has also taken a 92% share in dedicated Finnish head manufacturer Lako Oy in the last year. The H8 and H7 are said to be of radically different design to the previous Ponsse harvesting heads.

(Lako Oy, by the way, was founded in 1985 in Finland and produced the Premio series of harvester heads, almost exclusively for export – mainly to the North American and UK markets. The Lako 60, so often seen teamed with Åkerman excavator bases when mechanised harvesting was taking hold in the UK and Ireland, was the product of Lako Forest Oy Ltd, which was set



Ponsse H8: the lighter H7 is on the way.

(Left) A New Log Max head ready for work in Scotland. (Right) Kesla 20RH and the 'Xtender' for excavator booms.



up in 1979. The latter company's products – in recent years the Lako 43, 53, 63 and 83 harvesting heads – later took the name 'Original'.)

Logset has moved in a different direction to other manufacturers. The company was founded specifically to manufacture harvesting heads. The F-series forwarders came a few years later and the Titan harvesters later still. It comes as no surprise, then, that Logset's range has always included heads of a robust chassis design specifically for use on the booms of excavator bases.

Those specialist harvesting attachment manufacturers who have not taken the financial risk, like Logset did, of complementing their range with purpose-built carriers and forwarding machinery, may be at an advantage in initial investment terms... but their product will not be sold as part of an expensive package. They have to target a wider market and respond to the consumer's demands and price constraints. Such is the case with Finnish attachment constructor Kone-Ketonen Ltd.

The Oregon contractor was impressed by the Keto tracked feed system, but, for the harvesting of birch for plywood manufacture,

reduction of damage to the timber is also paramount. The hallmark of Keto harvesting heads has always been their strength and durability, but in a lightweight design. The Keto 1000 that so impressed the Oregon contractor can handle trees up to 5t, but itself weighs about 2.5t. The latest generation of 'Supreme' branded Ketos (in the 100 and 150 models) features the innovation of curved track feeding. The Keto Forst is becoming well respected as a thinning head – the extremely lightweight unit can even be worked by a 70hp agricultural tractor – and there is another new design in the pipeline; the Keto 655.

The range available from AFM-Forest Ltd has built a reputation in export markets, mainly on excavator carriers. Apart from the AFM Magnum (which is produced for tracked forestry machines or excavator conversions) there are heads suitable for wheeled harvesters across the AFM spectrum. The AFM 50 (L or Corona version) has just one pair of moving knives and copes well with crooked stems and hardwoods; the AFM 58 Husky, with its two pairs of moving knives, is extremely efficient at delimiting

softwoods. One speciality of the selection is the AFM 60/65 Combi. Kenny Dobson of Forest Machine Services explains that, as well as its use in conventional mode, the head has a dedicated grapple for handling tree lengths and sorting produce. The newly arrived AFM75, he continues, has a cutting capability of 94cm.

Kesla Oy has produced a wide range of forestry equipment since 1960. The current harvester head offering includes four basic roller-driven attachments, as well as two-stroke models. A notable innovation in the Kesla range of harvesting head accessories is the 'Xtender' boom-end fitment for excavators. Slewing and lifting power of these bases has never been doubted, yet the boom geometry is such that accessing and reaching to make the felling cut has not been one of their strong points. The 'Xtender', according to Kesla, overcomes many of these shortcomings.

Harvester heads available from Swedish firm Loggtech are marketed under the Viking brand. The range currently consists of only five models, two of which are geared for eucalyptus harvesting. One new feature in the three softwood heads is

twin-speed roller motors. Export marketing is precisely targeted as well; there are dealers abroad only in Canada, Portugal and the UK (where Phil Cooper handles sales and service). Simplicity and reliability are said to be the real assets of Viking heads.

Log Max harvesting attachments, on the other hand, span the full range of logging requirements, with the massive 12000 (available with a 1.1m cut option) seeing regular use for processing big timber. The four-wheeled harvester of Swedish contractor Peter Larsson, however, is fitted with the lightweight Log Max 4000, and the company has provided him with a solution for increasing efficiency in even the smallest timber. Investment in a Log Max accumulation kit allows the head to be converted into feller-buncher mode as Peter moves through the wood. Smaller stems destined for biomass energy production can be cut, held in the head, and then processed together.

The SP451 and SP551 are maybe best known in the UK and Ireland as the standard fitting for Gremo harvesters. Producer SP-Maskiner AB has been around for some time now; even making the bold claim that it



(Left to right) Logset 8L, Waratah's recently released HTH 624C, and a Keto 500.

actually invented the harvester head as we know it. The newer versions of its heads are LF (low friction) models. This gives the head the ability to efficiently handle surprisingly coarse and large trunks. The big-cutting SP 751LF has recently been upgraded to the SP 761LF model and a new mid-ranger, primarily for eucalyptus harvesting has appeared in the form of the 591LX.

There is some debate as to whether eucalyptus will ever appear in the British Isles; and, if it does, in what form. The technological developments of harvesting heads designed for the species may, nevertheless, have applications elsewhere. Complex stem measurement systems are not usually required, but the ability to debark is seen as essential. Oblique drive ridges on the feed rollers to spin the stem through the knives are one of the commonest options. A compact build allows the head to conform to stem irregularities.

The Austrian Woody 50 and 60 heads from Konrad Forsttechnik have a unique feature in their knuckled chassis. The strong grapple-configuration delimiting knives can be used for handling and sorting timber while the saw unit is hydraulically swung up into a clear position. The units have proved their durability handling big timber at roadside in the Austrian mountains and have performed well in hardwood windthrow in France. The South African logging industry, too, is one of Konrad's successful markets.

French manufacturer Equip'Forêt has one interesting development as well. The Sifor 450 and 650 harvesting heads are fairly conventional attachments for dealing with small/medium and medium/large timber respectively. Each is equipped with two pairs of moving knives and two fixed knives. The pairs of moving knives in the lightweight Sifor 350, however, can move independently and the fixed knives are both double-edged. The feed speed may not be the fastest, but the cutting capacity is adequate (47cm) and the head has been extremely well tested, not only amongst smaller conifers but also in the most challenging and difficult of French forests' Sweet chestnut coppice. It is possibly just the attachment to have if your challenge is to bring the neglected Sweet chestnut coppices of Kent or Sussex back into production. Then again, one of the stroke harvesters may be just what is required. More about them at a later date.

Hilary Burke

Harvesting Head Specifications

Make / Model	Weight kg	Felling Diam (cm) Single cut	Delimb Diam (cm) Tip to Tip	Knives Fixed, Movable	Feed Type	Feed Force (kN)	Feed Speed m/sec
AFM 45 Corona	790	50	35	2,4	3 rollers	18-22	0-5.5
AFM 45L	710	50	35	1,2	3 rollers	18-22	0-5.5
AFM 50 Corona	890	50	40	2,4	3 rollers	18-22	0-5.5
AFM 50L	630	56	40	1,2	3 rollers	18-22	0-5.5
AFM 58 Husky	1330	65	55	2,4	3 rollers	27	0-5.5
AFM 60	1400	70	55	1,2/3	3 rollers	25	0-6.0
AFM 60HD	1600	70	55	1,2/3	3 rollers	25-40	0-6.0
AFM 60L	1080	70	55	1,2/3	3 rollers	25	0-6.0
AFM 60 Combi	1550	70	55	1,2	3 rollers	23	0-5.0
AFM 65 Combi	2000	80	55	1,2	3 rollers	35	0-6.0
AFM 75	1860	94	75	1,4	3 rollers	32	0-5.0
AFM 80 Magnum	2500/2600	85/90	75/78	2,4	3 rollers	35-42/50	0-5.0
John Deere H742	680	47	35	1,3	2 rollers	15.4-18.4	0-5.0
John Deere H752	865-965	57	41	2,4	2 rollers	18.2-24.4	0-5.0
John Deere 762C	1270	65	43	2,4	2 rollers	23.4-28	0-4.5
John Deere H270	1145-1205	65	48	1,1,4	2 rollers	25.1-30.1	0-5.0
John Deere H290	1850	75	51	1,4	2 rollers	31.2/41.6	0-4.6
John Deere 745	730-780	55/62	40	1,3	4 rollers	16.0-25.2	0-5.0
John Deere H754	820-870	55/62	40	1,4	4 rollers	16.0-25.2	0-5.0
John Deere 758HD	1080	65/71	48	2,4	4 rollers	24.5 / 30	0-4.7
John Deere H480	1190-1250	65/71	48	1,4	4 rollers	23.7-30.2	0-5.0
Kesla 18 RH	440	45	33	1,2	2 rollers	13.5	0-5.0
Kesla 18 RHS	440	45	33	1,2	2 rollers	18	0-5.0
Kesla F20RH	570	45	33	1,4	2 rollers	18	0-5.0
Kesla F20RHS	560	45	33	1,4	2 rollers	14.5	0-5.0
Kesla F25RH	790	67	55	1,4	2 rollers	23	0-5.0
Kesla F25RHS	790	56	39	1,4	2 rollers	19	0-5.0
Kesla F30RH	1400	67	48	1,4	3 rollers	30	0-5.0
Kesla F30RHS	1400	67	48	1,4	3 rollers	27	0-5.0
Keto Forst	280	30	25	1,2	2 tracks	10	0-5.0
Keto 51	390	37	32	1,2	2 tracks	15	0-3.8
Keto 51 LD	495	37	32	1,4	2 tracks	15	0-3.8
Keto 100	600	37	32	1,2	2 tracks	15	0-3.8
Keto 100 LD	680	45	40	1,2	2 tracks	18	0-3.8
Keto 150	690	45	40	1,2	2 tracks	18	0-3.8
Keto 150 HD	1040	55	45	1,4	2 tracks	24	0-3.8
Keto 150 LD	890	55	45	1,4	2 tracks	24	0-3.8
Keto 500HS	1080	60	60	1,2	2 tracks	30	0-3.8
Log Max 4000	640	50	40	1,3	2 rollers	20	0-4.2
Log Max 5000	924	66	54	1,3	2 rollers	20.5 / 24.7	0-5.0
Log Max 6000	1294	65 (72)	62	1,3	2 rollers	28	0-5.0
Log Max 7000	1573	69	70	1,3	2 rollers	39	0-5.1
Log Max 9000	1652	70 (80)	72	1,4	2 rollers	41.5	0-5.1
Log Max 12000	4400	89 (110)	82	1,4	2 rollers	50	0-5.0
Logset 4M Hamster	700	45	40	2,4	3 rollers	17	0-5.0
Logset 5M	980	55	55	2,4	tracks / rollers / wheels	19	0-5.0
Logset 6M	1000	65	55	2,6	tracks / rollers / wheels	19	0-5.0
Logset 7L	1080	65	60	2,6	tracks / rollers / wheels	19	0-5.0
Logset 7X	1300	65	60	2,6	tracks / rollers / wheels	19	0-5.0
Logset 8L	1150	73	68	2,6	3 rollers	18/24	4.5-5.5
Logset 8X	1370	73	68	2,6	3 rollers	18/24	4.5-5.5
Ponsse EH25	490	25	-	-	-	-	-
Ponsse H53	850-900	52	55	1,4	3 rollers	18	0-5
Ponsse H60	880-900	52/64	60	1,2,4	2 tracks / rollers	24	0-5
Ponsse H60 BW	930-970	52/64	60	1,3	2 rollers	24 (18)	0-5 (6)
Ponsse H60E	910-940	52/64	60	1,3,5	2 tracks / rollers	24	0-5
Ponsse H73E	1100-1150	64/72	70	1,2,4	3 rollers	26	0-5
Ponsse H7	1200-1280	64/72	75	1,2,4	3 rollers	30	0-5
Ponsse H8	1300	64/72	74	1,2,4	3 rollers	36	0-5
Ponsse HW 60	970-1000	52/64	60	1,3	2 rollers	24 (18)	0-5 (6)
Rotne EGS 402	490	46	040	1,4	2 rollers	14.3	0-3.7
Rotne EGS 590	1100	65	060	1,4	3 rollers	25	0-4
Rotne EGS 700	1500	75	070	1,4	5 rollers	27	0-3.7
SP 551LF	940	60	43	1,4	2 rollers	25	0-6.0
SP 751LF	1950	90	54	1,4	4 rollers	41.4	0-6.0
Silvatec 235 MD35	600	45	035	2,4	2 rollers	18	0-5.0
Silvatec 335 MD40	700	50	040	2,4	2 rollers	19.48	0-5.0
Silvatec 445 MD50	1024	55	050	2,4	2 rollers	29.14 / 37	0-5.0
Silvatec 560	1350	65	060	1,1,4	2 rollers	37	0-5.0
Silvatec 665 MD70	1850	80	070	2,4	2 rollers	32.8 / 44.97	0-5.0
Tigercat 650	1325	65	60	2,4	2 rollers	28	0-5.3
Tigercat TH575	2350	70	70	2,3	2 rollers	38.6	0-6
Valmet 350.1	950	60	60	1,3	3 rollers	16.5-25.3	0-5
Valmet 360.2	1245	65	50	1,3	2 rollers	25.3	0-5
Valmet 370.2	1470	70	50	1,4	2 rollers	28.2-30.7	0-5
Valmet 370E	1600	70	50	1,4	2 rollers	21-30.7	0-5
Viking 525.3	925	55	42	1,4	2 rollers	18.4/20.4/22.4/24.4/26.5	0-5.3
Viking 625.3	925	65	42	1,4	2 rollers	18.4/20.4/22.4/24.4/26.5	0-5.3
Viking 650.3	1200	75	53	1,4	2 rollers	21.5/23.9/24.4/26.4/28.7	0-5.3
Waratah HTH240	680	47	35	1,1,3	2 rollers	15.4-18.4	0-5.0
Waratah HTH250-HD	865-965	57	41	2,4	2 rollers	18.2-24.4	0-5.0
Waratah H270	1145-1205	65	48	1,1,4	2 rollers	25.1-30.1	0-5.0
Waratah H290	1850	75	51	1,4	2 rollers	31.2/41.6	0-4.6
Waratah HTH450	730-780	55/62	40	1,3	4 rollers	16.0-25.2	0-5.0
Waratah HTH460	820-870	55/62	40	1,4	4 rollers	16.0-25.2	0-5.0
Waratah HTH470-HD	1080	65/71	48	2,4	4 rollers	24.5 / 30	0-4.7
Waratah H480	1190-1250	65/71	48	1,4	4 rollers	23.7-30.2	0-5.0
Waratah HTH616	1550	50	52	1,2	3 rollers	23.1	0-6.3
Waratah HTH622 B	2120	76	64	1,2	3 rollers	38.1	0-6.1
Waratah HTH624 C	3386	75	76	1,2	3 rollers	47.5	0-5
Waratah HTH626	4720	85	88	1,2	3 rollers	59.2	0-3.7
Waratah FL85	1550	85	Felling head only with SuperCut 300 saw unit				

Note: Not every model on this list may be immediately available.