

Appendix 2

Study on Establishment and Maintenance of an Arboricultural Works Team Within Ceredigion County Council

Summary

This study seeks to investigate the cost of and impact on the authority of the establishment and ongoing maintenance of a new Arboricultural department within Ceredigion in response to the threat from ash dieback disease, the primary use for this team would be for cutting of trees affected by ash dieback disease.

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2. Introduction

- 2.1. The threat and liabilities from ash dieback disease is well documented in the Ceredigion Ash Dieback Action Plan which contains within it a plan for surveying of trees in areas which pose a risk to the Ceredigion County Council and the greater public and for dealing with any affected trees which are the direct responsibility of Ceredigion County Council by means of a third-party contractor framework which has been drawn up and is currently in procurement.
- 2.2. This study into the costs and practicability issues associated with establishing and running of a dedicated Arboricultural team within Ceredigion County Council, for the purpose of dealing with the responsibilities and liabilities associated with ash dieback is being undertaken at the request of the Thriving communities Overview and Scrutiny Committee.
- 2.3. The proposed Arboricultural department would be primarily responsible for cutting of trees growing on land owned, occupied, or managed by Ceredigion County Council.
- 2.4. In a limited and very small number of cases the proposed Arboricultural department may be called upon to undertake tree cutting on private land, however trees growing on private land are clearly defined in law as the responsibility of the land owner/occupier so this would only be as a last resort in specific circumstances; once all legal routes of compelling a land owner to fulfil their legal responsibilities under section 154 of the Highways Act or section 23 of the Miscellaneous Provisions Act have been exhausted, or if the ownership of any such land cannot be established.

3. Justification

3.1. As detailed in the Ceredigion Ash Dieback Action Plan – ash dieback presents a substantial risk and liability to Ceredigion County Council, it estimates that there are 5000 ash trees which will be the council’s responsibility growing on roadsides and 9960 ash trees growing on other land managed by the council, such as:

- 8 Local Nature Reserves or wildlife sites, Council offices, Cemeteries, Care homes, Allotments,
- Public open spaces, Council farms and Other Council estates.
- Additionally, a survey of Ceredigion’s schools has identified 749 trees (three times the initial estimate) affected by ADB, however the first round of work on these trees in schools will be completed before an Arboriculture department could be brought online.
- Giving an estimate of approximately 15,210 ash trees which are the councils’ direct responsibility, of which 90% = 13,689 trees will be affected by ADB and therefore will likely need cutting.
Current estimates following work to carried out to date is difficult to quantify but data will be updated on an ongoing basis.
- Section of table from the Ash Dieback Action Plan detailing numbers of ash trees which will be Ceredigion’s responsibility:

15210 Trees x 90% mortality = 13689			
Height Category	Percentage category	in	No of Trees
<10m		20%	2738
10-20m		67%	9172
>20m		13%	1880

4. Solution

The proposed establishment of an Arboricultural department as a solution to the challenges presented to Ceredigion County Council in the cutting and making safe of trees which fall within its responsibility necessitate the consideration of several issues around the unique nature of the problem:

4.1. Number of trees and their condition

As detailed in the justification in section 3 it is anticipated that there will be in the region of 15,210 ash trees falling under the primary responsibility of CCC, of which 13,689 are likely to need cutting. While this number of trees alone present no small problem it must be understood that the nature of ADB disease is such that affected trees decay rapidly and in such a manner as to render them unpredictable and consequently of higher risk when cutting or felling than are healthy trees.

4.2. Working methods

The higher risk presented by trees with ADB is going to necessitate the altering of the standard approach to working on these trees and the time these operations are going to take in comparison to conventional Arboricultural operations on healthy trees. This will also necessitate the adoption of more innovative solutions in managing these risks, which will reduce or eliminate as far as is reasonably practical the necessity to climb diseased trees –

such as the use of MEWPS (mobile elevated work platforms) and heavy plant mounted tree cutting equipment.

4.3. The main work methods are as follows:

4.3.1. Tree felling from ground level – Where possible, felling of trees at ground level is more efficient in time and resources and carries the fewest inherent safety risks and would be the most desirable method. It will however not always be possible to use this method, due (though not limited to) issues such as:

- The brittleness of these trees preventing use of conventional directional felling aids such as lifting wedges or pull ropes to guide trees in the preferred direction of felling.
- Insufficient unobstructed space to accommodate the felling of whole trees, the presence of underground utilities or infrastructure which would be damaged by falling trees, or proximity to roads etc.

4.3.2. Sectional dismantling of standing trees by means of aerial rope access – A routine and versatile means of removing trees where felling isn't possible. However, the nature of the decay in and brittleness in trees of affected by ADB means that greater caution and more in-depth risk management in climbing affected trees must be employed. Whilst tree climbing of ADB should be a secondary option to the use of mechanical platforms in the dismantling of trees it will still be a valid, practicable and justifiable method where risks can be managed effectively. The practicability will depend on many issues, such as site access and space constraints & tree condition.

4.3.3. Sectional dismantling of standing trees by means of aerial access via MEWP – A preferred method for the safe dismantling of high-risk trees where access and safe working area for the machinery is possible and practicable.

4.3.4. Sectional dismantling of standing trees by means of excavator, crane or telehandler mounted tree cutting machinery – A preferred method for the safe dismantling of high-risk standing trees where access and safe working area for the machinery is possible and practicable and sufficient trees need cutting to justify the transport and use of heavy plant

4.4. Department size and capacity

With consideration to the following factors:

- The afore mentioned number of ash trees in Ceredigion's responsibility.
- ADB being already well established in Ceredigion, resulting in a backlog of trees from before the establishment of the ADB project which need dealing with.
- The disease is accelerating in its infection rate and will continue to do so until the number of ash trees available to infect dwindle by succumbing to the disease.

The proposed department will need a greater capacity in initial years 1 to 5, with the required capacity reducing over years 6 to 10 of the project.

With all these factors in mind the staffing structure numbers and costings detailed in the next section should be viewed as a minimum recommendation of what will be required.

5. Staff structure and costings

5.1. Structure

The structure of the proposed department would consist of a manager and multiple smaller teams of four persons who would work independently on smaller tasks or be brought together to collaborate on larger or more complex operations as and when needed.

5.2. Staffing

The staffing levels costings used in this document are based on commencing with operating four teams in Year 1 due to anticipated recruitment and logistical issues (*See Recruitment issues section 5.6 and equipment procurement Issues section 6.5*), increasing to five teams in years 2 to 5, four teams in years 6 & 7 and three teams in years 8 to 10 of the ten-year ADB project.

As to how many trees a four-man team can deal with in a day it is advised that the variables are many, for example, size of tree (some are 5m in height, some are greater than 25m), condition, location, weather conditions on the day, etc.

A typical time frame for different sizes of tree are per team per week:

Trees less than 10m in height – tens to even hundreds, however they will not be conveniently packaged in nice groups of many small trees together,

Trees between 10 – 15m in height and trees 15 – 20m in height - between 5 to 20,

Trees between 20-25m & greater than 25m in height - in the region of 2 to 10.

An outline of the roles within the department is as follows:

Manager - Grade 10

- Arboricultural operations planning, work scheduling, and logistics.
- Health and safety issues & compliance.
- Team training (internal and external) compliance & scheduling.
- Stand in for team leaders and rescue climbers during absences.
- Equipment procurement, maintenance, and inspection/certification (internal and external).
- Vehicle and plant procurement and maintenance scheduling in conjunction with transport fleet managers.
- Day to day staffing/HR.
- Daily/weekly equipment maintenance.
- Managing budget and reporting.

Team Leader – Grade 9

- The onsite implementation and dynamic development of the work plan, method statement and risk assessment.
- Supervision of staff and tree cutting operations.
- Lead Aerial operative (climber).
- Designated aerial rescuer when others are working off the ground.
- Daily/weekly equipment maintenance as directed by manager.

- One or two of whom to occasionally undertake role of assistant Department manager to cover for managers holiday and/or absence.

Assistant team leader – Grade 8 (one per team)

- Supervision of on ground staff and tree cutting operations when team leader is working off the ground.
- Aerial operative (climber).
- Designated aerial rescuer when others are working off the ground.
- Other tasks as delegated by manager/team leader.

Operative Grade 7 (one or two per team)

- All tree cutting operations as directed by team supervisor dependant on individuals' qualifications – More advanced technical qualifications than grade 6, and/or additional LGV driving licence and/or plant operation qualifications.

Operative Grade 6 (one or two per team)

- All tree cutting operations as directed by team supervisor dependant on individuals' qualifications – Less advanced technical qualifications than grade 7.

Additionally

In addition to the Arboricultural qualifications relevant to the roles detailed above:

- One member of each team would be required to have or gain an LGV driving licence for the purpose using vehicles detailed to each team or for driving a larger LGV with crane which would be available additionally as required.
- Two or more members of the department (spread across more than one team) would need to have or gain suitable heavy plant operating licence/qualifications for using heavy plant available additionally as required.

5.3. Training

Though there would be strict requirements at the application stage for the minimum required qualifications of workers in specific roles, due to the modular nature of the NPTC (National Proficiency Test Council – City and Guilds) Arboriculture qualifications it isn't possible to forecast exactly how comprehensive individual applicants' qualifications are likely to be. For example, A suitably qualified and experienced tree climber may never have had need to undergo training for felling very large diameter trees & an experienced tree feller from a forestry background may never have had cause to have woodchipper training. As the qualifications staff have will have been tailored to previous roles the training costs detailed in the Appendices are an estimate of £600 per worker per year but are likely to be more concentrated during the commencement/early stages of the workers employment with

Ceredigion though an ongoing need for continuous professional development will also need satisfying.

5.4. Employment costs

A full breakdown of the cost of employing workers of different skill levels, in different roles, based on current Ceredigion pay scales is detailed in the appendix 01, the totals of these costs are detailed in the following table:

Position	Salary	Annual Employment (salary, NI, pensions, admin etc)	Annual training, refresher, CPD (estimated)	Total
Department Manager Grade 10	£32,234.00	£44,947	£626.67	£45,573.67
Team Leader Grade 9 (1 per team)	£28,672.00	£40,385	£626.67	£41,011.67
Assistant team leader Grade 8 (1 per team)	£24,982.00	£35,713	£626.67	£32,190.67
Operative grade 7 (1 per team)	£22,183.00	£31,564	£626.67	£32,190.67
Operative Grade 6 (1 per team)	£20,092.00	£27,877	£626.67	£28,503.67

5.5. Employment costs over the ten-year duration of the ADB project

The Table and chart Below Illustrate the total annual staffing costs over a ten-year period and ten-year total, detailed costings can be found in Appendix 01.

Year	Five teams	Four teams	Three Teams
Year 1		£597,892.33	
Year 2	£735,970.00		
Year 3	£735,970.00		
Year 4	£735,970.00		
Year 5	£735,970.00		
Year 6		£597,892.33	
Year 7		£597,892.33	
Year 8			£459,814.67
Year 9			£459,814.67
Year 10			£459,814.67
Total over 10 years			£6,117,001.00



5.6. Recruitment issues

In the current post Brexit and post Covid employment environment, there are well publicised recruitment difficulties across all fields, both authority and nationwide, currently and which look likely to continue for the foreseeable future.

While arboriculture is an attractive career path for those with a passion for trees, it is a very niche industry with a limited pool of qualified workers to draw upon. Any workers we were seeking to employ would be required to have highly specialised skills, qualifications & training, this coupled with a high attrition rate among new entrants could make it difficult to recruit and retain staff in the numbers required.

Also, the greatly increased demands for staff across the industry that Ash Dieback has created further exacerbates this issue. Therefore, though difficult to quantify it is envisaged that we are likely to encounter the same recruitment difficulties that are being faced across the entire Arboricultural industry.

6. Equipment and costings

The distribution of equipment across the department is divided into two categories: Equipment issued to each team.

Additional Equipment – Specialised, heavier duty or extra equipment - held in storage for utilisation by individual or combined teams as the need arises.

An outline description of these equipment types is as follows while more details and individual costings can be found in the attached appendix A.

6.1. Equipment issued to each team

Vehicles - Single cab pickup truck - 4x4 3.5 tonne gross with high sided tipping body. Single cab tipper truck - 7.2ton gross; same size vehicle & load volume as a 3.5 tonne truck, with additional weight carrying capacity required to operate legally (LGV licence required).

High sided tipping trailer – 3.5 tonne.

Plant - Tracked woodchipper (200mm capacity) & bespoke transport trailer.

Tools - All tools required by a four-person team.

PPE - All Personal protective equipment required by a four-person team.

Climbing equipment -

Climbing equipment sufficient for one primary aerial operative working by aerial rope access, and one designated secondary/rescue climber).

Rigging equipment –

Rigging equipment sufficient for use by a team of four with one operative working off ground, where there is a requirement to lower tree sections in a controlled manner when inappropriate to free drop sections.

Miscellaneous – Miscellaneous equipment required to support work.

6.2. Additional equipment

Vehicles - 12ton LGV 2x4 High sided tipper lorry with Farsi F65 crane & rotating grab – for the mechanical loading and transportation of large quantities timber and/or woodchip from worksites.

Plant:

- Merlot Roto 50-26 - A 26-meter reach telehandler which rotates through 360 degrees, which can be fitted with a work platform allowing it to be used as a MEWP
- GMT grapple saw/Felling head for Merlot 50-26 **For more information of merlot roto and grapple saw see section 6.3 -“Mechanisation and innovation” below.*
- Tracked MEWP 18-meter reach, and bespoke transport trailer.
- 4x4 Pickup mounted MEWP 13-meter reach.
- 2x4 Chassis mounted MEWP 18-meter reach.
- Avant 600 series compact wheeled loaders – for moving and loading timber.

Tools - Specialist and larger tools for occasional use.

PPE – Additional PPE required by department manager & spares.

Climbing equipment - Additional climbing equipment required by department manager & spares high wear items.

Rigging equipment – Additional heavier duty rigging equipment, extras and spares high wear items.

Miscellaneous – Miscellaneous equipment required to support work.

6.3. Mechanisation & Innovation

As previously discussed, the issues around the increased risks when working on ADB trees will necessitate the adoption of more innovative solutions in managing these risks. Part of this approach will be the utilisation of specialised plant mounted tree cutting equipment that while reducing risk will also increase efficiency. In addition to this, the adoption of timber handling equipment (lorry mounted cranes and compact wheeled loaders) will greatly reduce health risks associated with manual handling whilst also increasing efficiency. Details of these are as follows:

Merlo Roto 50-26 – see Appendix 02

This is a large(16,600kg) road going telehandler that revolves through 360°, has a 26-meter reach, can be used with a working platform as a MEWP, or with cutting attachments for dismantling trees. It can be driven on the road at up to 40kph but for long distances may be more efficient to transport by lorry.

GMT grapple saw - for attachment to the above telehandler.

A combined mechanical grab and saw which is used to grab sections of tree, cut them free then place them on the ground or directly into a chipper, lorry, or trailer.

Please right click on the link below for a video of this grapple saw in use on a telehandler.

<https://www.youtube.com/watch?v=9swvf1nYUag>

Avant 500/600 series mini loader

These are a small four wheeled articulated mechanical loaders; with a tree grab attached they are used for moving and loading large pieces of timber – reducing the need for manual handling and the work required cutting larger tree sections into smaller pieces for handling. They can be towed on a plant trailer of up to 3500kg on a standard driving licence.

N.B.

The use of a large (circa 30,000 – 40,000kg) 360° extra-long reach wheeled excavator/materials handler for use with a tree cutting grab was investigated – These machines are manufactured to order and manufacturers order books are currently closed due to difficulties in their supply chains, dealers are therefore unable to provide a quotation of cost, however such a machine would be in excess of £600,000 for the base machine and have a circa £60,000 cost for tree cutting attachments, based on 2020 price. This machine would also require transportation to site by low loader and would likely be too large to operate in confined spaces such as single lane roads.

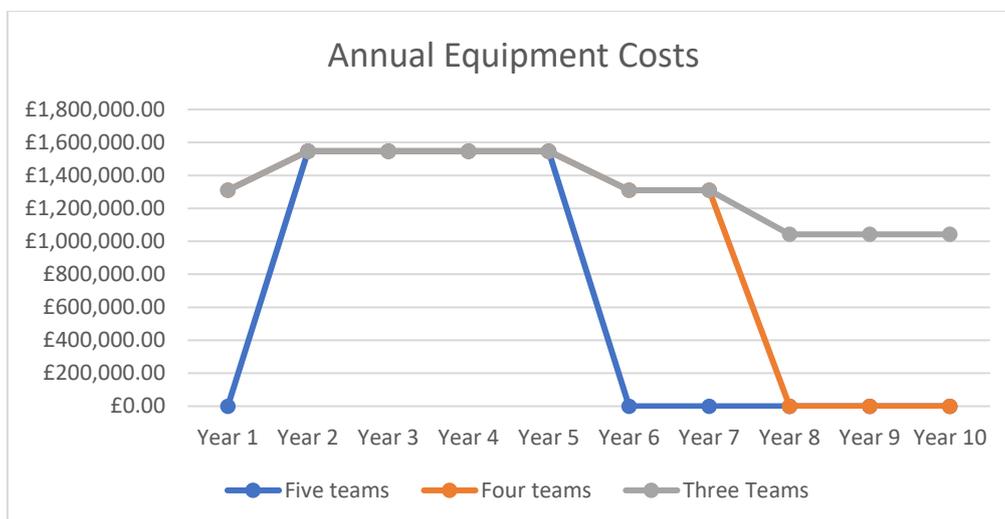
6.4. Equipment costs over the ten-year duration of the ADB project

Purchase, servicing/inspection & insurance (insurance costs exclude vehicles, which would fall under an existing policy at no extra cost), based on current prices.

Full itemised equipment costs can be viewed in Appendix A.

The Table and chart Below Illustrate the total annual equipment costs over a ten-year period and ten-year totals:

Year	Five teams	Four teams	Three Teams
Year 1		£1,309,254.04	
Year 2	£1,546,723.66		
Year 3	£1,546,723.66		
Year 4	£1,546,723.66		
Year 5	£1,546,723.66		
Year 6		£1,309,254.04	
Year 7		£1,309,254.04	
Year 8			£1,042,353.90
Year 9			£1,042,353.90
Year 10			£1,042,353.90
		Total over 10 years	£13,241,718.45



6.5. Equipment procurement issues

6.5.1. Supply logistics

Current global supply chain issues are causing extended delays in delivery of vehicles and machinery, current lead times for most items range from 8 to 18 months from the date of ordering, while some order books are closed for the next 6 to 9 months or in some cases an indefinite period; some dealers can't confirm now, what will be available in future.

These delays are difficult to quantify before a procurement process has been followed more accurate delay figures would only be available at the point of placing orders but are likely to cause significant delays in the establishment of an Arboricultural department.

6.5.2. Costs

Uncertainty over raw material & manufacturing costs mean it hasn't been possible to obtain quotations for vehicles and plant, therefore all costs for these are current retail prices, all dealers expect these prices to increase over the coming months/years making it virtually impossible to cost things accurately at this stage. Accurate costs would of course be available on placing orders but would likely be based on forecast of prices on the delivery date – if ordering in quarter one or two of 2022, for delivery in quarter one or two of 2023 prices would be based on 2023 prices. Having consulted with Ceredigion fleet management on procurement it is expected that current prices are likely to increase by as much as 40% by the time purchases of vehicles and plant can be made resulting in an additional cost of £5,030,638, bringing total costs for vehicles and plant to £17,607,233.

This will obviously have a substantial impact on the cost of establishing an Arboricultural department.

6.6. Additional costs

Whilst servicing (by Ceredigion fleet services) and replacement purchasing based on current prices is included in the equipment costings, it has not been possible to provide accurate figures on the following items. All of which will depend on usage – with the spread of ash trees across all parts of Ceredigion and the spread of ADB affecting all areas equally vehicles will be accumulating considerable milage but until the project is underway it isn't possible to accurately estimate.

6.6.1. Repairs and parts

Usage will to a great extent how frequently spare parts are needed, but as mentioned with vehicle and plant purchasing, spare part supply chains are facing the same uncertainties in both supply and costs.

6.6.2. Tyres

Accurate milage estimates will not be possible until the project has commenced, and tyre prices are linked to the global oil market so current prices cannot be relied upon and accurate future estimates cannot be made at this time.

6.6.3. Fuel

Accurate milage estimates will not be possible until the project has commenced, and at the time of writing global fuel prices are facing unprecedented increases making accurate future estimates impossible.

6.6.4. Traffic Management

All roadside trees which require work from the road will require traffic management. While the equipment costings include road signage and stop-go signs for temporary interruptions, all extensive work conducted from roadways will require the use of outside contractors to provide traffic management.

The number of instances where traffic management will be required will depend on many variables such as the location of diseased trees, but an estimate has been made as in the following table:

Traffic Management	
Estimated roadside trees of CCC responsibility	5000
Estimated No work sites at 4x trees per site where 66.6% of sites require contracted TM	825
Estimated total cost at £400 per site	£330,000.00

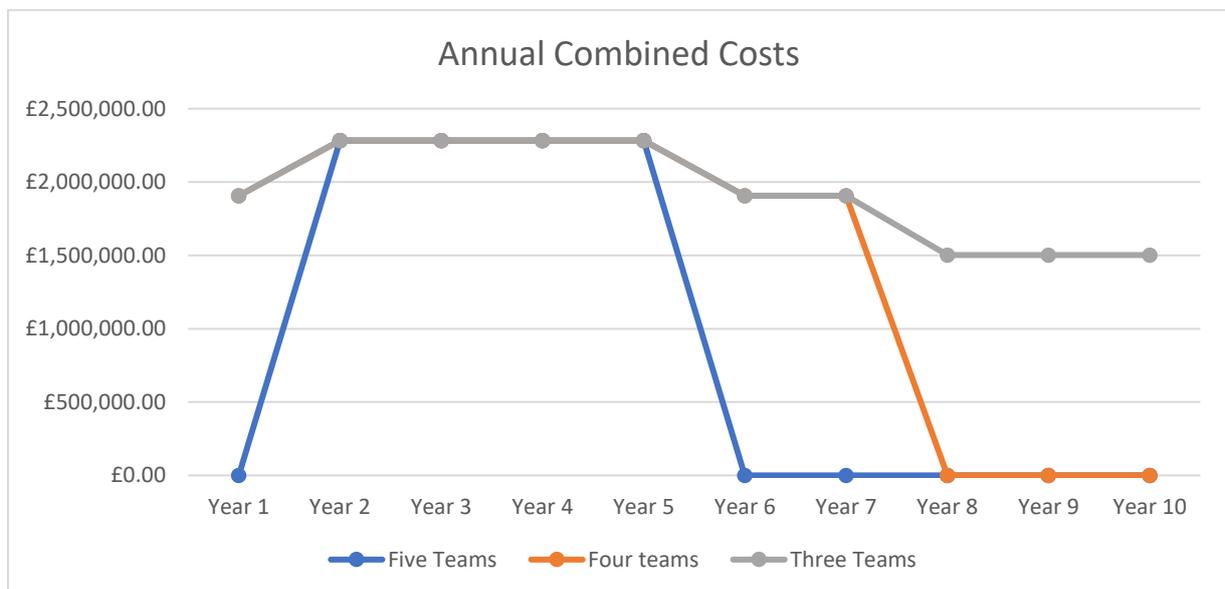
At £400 per site per day for two-way staffed traffic management, this gives a project total of £333,000

7. Total costings

7.1. Combined total costings

A summary of combined total costings – staffing & equipment is shown in the table and chart below, detailed costings can be found in Appendix 01.

Year	Five Teams	Four teams	Three Teams
Year 1		£1,907,146.37	
Year 2	£2,282,693.66		
Year 3	£2,282,693.66		
Year 4	£2,282,693.66		
Year 5	£2,282,693.66		
Year 6		£1,907,146.37	
Year 7		£1,907,146.37	
Year 8			£1,502,168.57
Year 9			£1,502,168.57
Year 10			£1,502,168.57
Traffic management ten-year total			£330,000.00
		Total over 10 years	£19,688,719.45



8. Cross Service Impact

8.1. Fleet Management

8.1.1. Servicing

The added workload placed on the fleet management team of servicing vehicles and plant for an arboricultural department would require recruiting additional fleet technicians and place an additional workload on fleet management administration.

Additional grade 7 technicians cost the authority £31,568 per year to employ, this cost is included in the servicing charges.

8.1.2. Operator's licence

The additional number of large goods vehicles brought to the service by an arboriculture department would exceed the capacity of the fleet operator's licence, this would result in the need to apply to VOSA for an extension to Ceredigion's operator's licence, while this is possible it will present an increased administration workload for fleet management.

9. Comparison with using arboricultural contractors

9.1. Estimated cost of using contractors

The table below, from Ceredigion Ash Dieback Action Plan shows the estimated costs to the council of using arboricultural contractors for cutting of trees which are the councils responsibility, based on costs incurred by other authorities.

Estimate cost of removing diseased Ash trees					
15210 x 90% mortality				13,689	Trees
Height Category	Percentage in category	Unit cost to fell	No of Trees		Cost
<10m	20%	£150	2738		£0.41M
10-20m	67%	£500	9172		£4.58M
>20m	13%	£800	1880		£1.5M
				Total	£6.49M

Total cost of works coming to £6.49M where contractors are used, whereas the cost of the establishment and running of an arboricultural department within the council based on the same estimates of the number of trees Comes to almost £19.7M.

Whilst the ADAP is 13 months old and current issues around increased fuel costs would likely increase the contractor estimate, fuel costs do not form part of the arboriculture department costs for afore mentioned reasons so the two costs should remain comparable.

9.2. Logistical & Supply issues

Whilst the logistical and supply issues which are likely to pose an obstacle to establishing an arboricultural department in a timely manner and to inflate further the costs of doing so over a prolonged equipment delivery period, would also be an impediment to any arboricultural contractor sourcing equipment or staff in the same market place, a contractor that is already established would be in a position to protect themselves from these obstacles in ways such as extending the life of their existing equipment whilst waiting for extended delivery delays of new equipment and only facing the challenge of retaining staff rather than recruiting in large numbers.

9.3. Scheduling Flexibility

The long-term strategy of the ADB project is to survey trees during early summer whilst trees should be in leaf (at this time of year ADB is most easily & reliably identified), then commission any work to trees identified in the surveys the following autumn & winter –

outside of bird nesting season. This strategy is more easily achievable when using contractors as we can use them at will and have no obligation to keep them occupied/employed during the spring and summer.

Using an Arboriculture department within the council tree cutting work would need to be scheduled all year round, which would involve carrying out tree cutting during the bird nesting season. Whilst it is legal, possible and on occasion essential to undertake tree cutting operations during the bird nesting season, this practice would place a much greater workload of surveying for bird nests both before commissioning work and again before commencing the work, it is also a far lengthier process relative to autumn & winter surveying to survey for bird nests during the months of the year that trees are in leaf. In short, the use of outside contractors would give the council more flexibility in planning works when it is best suited for the work to take place and a reduced workload in the commissioning process.

10. Conclusion

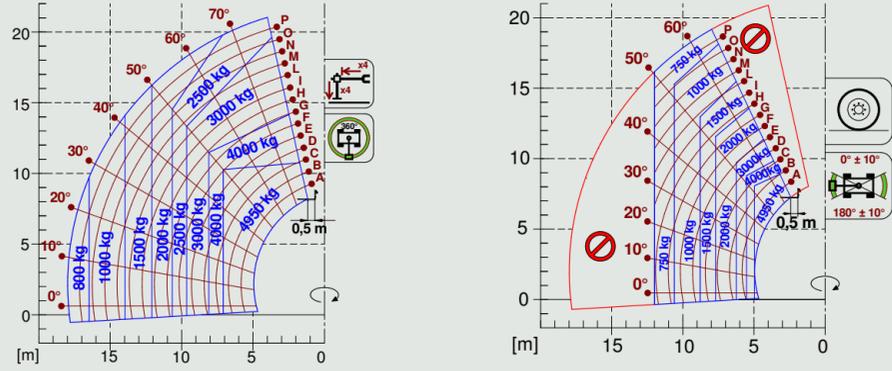
- 10.1. It's been shown in this study that financial and logistical implication for CCC of the establishment and maintenance of an arboricultural department are complex, varied and dependant on wide ranging factors, some of which will not of been encountered before; such as the unprecedented complications related to global supply chain disruption and its impact on equipment supply and costs.
- 10.2. At the time of writing the total ADB project budget over its 10-year duration is £10M of which £6.49M is allocated for the cutting of trees which the council is responsible for by outside contractors, the costs of bringing the work in house, detailed in this study far exceed this figure.
- 10.3. The recovering of some costs from cutting trees affected by ADB by utilising the timber and chip arising from the cutting of trees affected by ash dieback has been mooted by various stakeholders – Whilst there may be some value to be obtained from this, any benefits from it will be equally available to the council weather tree cutting is undertaken directly by the council or by outside contractors as the current contractor framework which is in the procurement process allows for the retention by CCC of any chip or timber arising from these works. Meaning this process has no impact on this study, so has been omitted. A further study on this could be undertaken.

11. Appendices

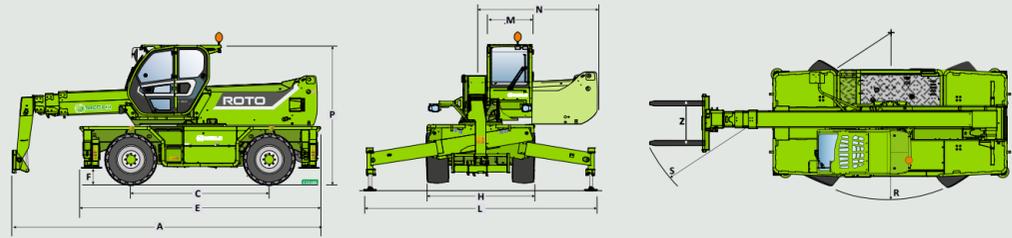
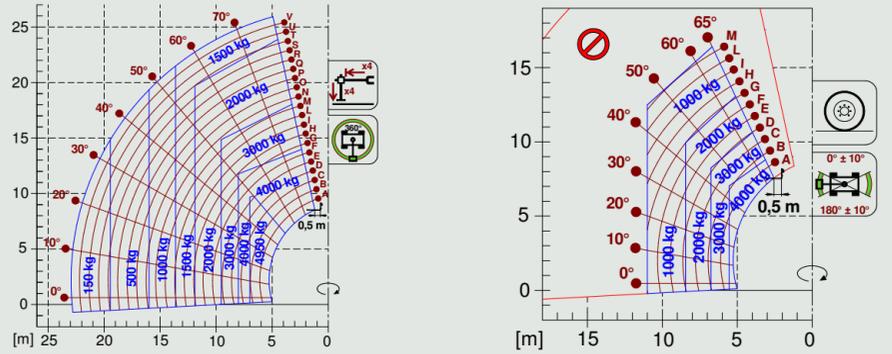
- Merlot Roto 26-50 Brochure
- Avant 600 series Brochure
- Billennium Tracked MEWP Brochure
- Tracked MEWP tree work illustration Image
- Tracked MEWP tree work illustration Image
- 4x4 Pickup Mounted MEWP Brochure
- Chassis mounted MEWP Brochure

Load Chart

ROTO 50.21 Entry | 50.21 S-Class | 50.21 S-Plus



ROTO 50.26 Entry | 50.26 S-Class | 50.26 S-Plus



Dimensions

Model	A	C	E	F	H	L	M	N	P	R	S	Z
ROTO 50.21	6830	3070	5370	370	2430	5010	1010	2600	3120	3850	6100	850
ROTO 50.26	7150	3070	5370	370	2430	5010	1010	2600	3120	3850	6310	850

Model	ROTO Entry		ROTO S-Class		ROTO S-Plus	
	50.21	50.26	50.21S	50.26S	50.21S-Plus	50.26S-Plus
Performance						
Turret rotation	600°	600°	Continuous 360°	Continuous 360°	Continuous 360°	Continuous 360°
Unladen weight (kg)	15800	16600	15800	16600	16500	17300
Maximum load capacity (kg)	4950	4950	4950	4950	4950	4950
Lift height (m)	20,8	26	20,8	26	20,8	26
Maximum reach (m)	18	23	18	23	18	23
Load capacity at max. lift height (kg)	2500	1500	2500	1500	2500	1500
Load capacity at max. reach (kg)	800	150	800	150	800	150
Frame levelling (%)	-	-	+/-12, +/-4	+/-12, +/-4	+/-12, +/-4	+/-12, +/-4
Powertrain						
Engine	Deutz TCD3.6	Deutz TCD3.6	FPT NEF45	FPT NEF45	FPT NEF45	FPT NEF45
Range/Cylinders	3600/4	3600/4	4500/4	4500/4	4500/4	4500/4
Engine power (kW/HP)	55/75	55/75	125/170	125/170	125/170	125/170
Maximum speed (km/h)	25	25	40	40	40	40
Automatic parking brake	Yes	Yes	Yes	Yes	Yes	Yes
HYDRAULIC						
Hydraulic pump	LS + FS	LS + FS	LS + FS	LS + FS	2 - LS + FS	2 - LS + FS
Delivery / pressure (l / min-bar)	103 - 250	103 - 250	135 - 250	135 - 250	140+100 - 250	140+100 - 250
Auxiliary hydraulic service on boom	Yes	Yes	Yes	Yes	Yes	Yes
Cab						
Cab finishing	PREMIUM	PREMIUM	PREMIUM	PREMIUM	PREMIUM	PREMIUM
Cabina FOPS LIV II e ROPS	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Electronic joystick control					
Tilting cab	NO	NO	NO	NO	Yes	Yes
Reverse shuttle	Dual reverse					
Configuration						
Hydropneumatic Suspension EAS Merlo	NO	NO	Yes	Yes	Yes	Yes
Tac-lock	Yes	Yes	Yes	Yes	Yes	Yes
Pre-arrangement for aerial work platform	Yes	Yes	Yes	Yes	Yes	Yes
Standard tyres	18-22.5	18-22.5	18-22.5	18-22.5	18-22.5	18-22.5
Hydraulically controlled stabilizers	Multiposition	Multiposition	Multiposition	Multiposition	Multiposition	Multiposition

MERLO MOBILITY

Always Connected

The Merlo range of telehandlers offers the possibility of using an exclusive technology to make the telescopic handlers even more intelligent and connected. Using the MerloMobility 4.0 CONNECTIVITY SYSTEM, the customer can make the most of the information detected by the machines and gathered in a portal. Merlo Mobility is a flexible tool to optimise the monitoring of your machines as they carry out their various operations.



The data, features and illustrations contained in this document are for indicative purposes only, and are not binding. Merlo S.p.A. pursues a policy of continual research and development, and as such, our products may feature characteristics that differ from those described or may be subject to modification without prior notice. The products illustrated may include optional equipment.

masterstudio



Roto 21-26M



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Roto

A NEW CONCEPT OF MOVEMENT

Great innovations start with simple ideas, like that of the ROTO Range, which has changed the approach to telehandler movement by introducing a revolving turret system capable of rotating 360°, with no need to reposition the machine. The ROTO Range was launched in 1991, and from that moment onward this new concept became increasingly popular on a global scale, to the point that Merlo Group soon became an industry leader.

The new ROTO family marked a new era by introducing new standards in the field of telehandlers for the construction sector, and the product offering was expanded to include three different ranges with different features designed to be increasingly well-adapted to the needs of the various users, such as easy-to-use models for the Rental segment, and Top-of-the-line models equipped with every feature the customer could possibly desire. Today's new ROTO models stand out for their new cabs featuring exceptional comfort, their new "Modular" design concept, and their use of technologies designed to ensure greater safety, improved performance, and unparalleled efficiency.



The Roto Range

The 6 key points

- 1 Practicality
- 2 Precision
- 3 Comfort
- 4 Safety
- 5 Versatility
- 6 Efficiency

1 – Practicality
Ease of use and ergonomics are the key words according to which the machine's new controls and management system were developed. The innovative multi-function armrest, made with automotive-style materials, is extremely intuitive to use, and is equipped with automatic systems for positioning the stabilisers. The ROTO model can even be manoeuvred effectively by less experienced operators.

2 – Precision
Everything within hand's reach: the Load Sensing and Flow Sharing hydraulic circuit allows for multiple simultaneous boom movements and rapid turret rotation, without compromising the accuracy of the movements themselves, for precision load positioning. Moreover, the hydrostatic transmission guarantees millimetric precision during machine movements.

3 – Comfort
The ideal work place: the new spacious cab can be anchored to a structure capable of being tilted upwards by 20°, thereby allowing the operator to effortlessly oversee the loading movements. The lower part of the cab is connected using Silent blocks to drastically reduce noise and vibrations. Operational comfort is further improved by the tac-lock system, which allows the tools to be hydraulically clamped with no need to leave the driver's seat.

4 – Safety
Not just sensations: the turret is capable of rotating in continuation (limited to 600 degrees for the "Entry" version). The standard ASCS automatic load management system, which is equipped with a high definition digital display for viewing the operational and safety parameters, guarantees maximum performance without altering the ROTO model's stability. The S-Classic and S-Plus ROTO models are equipped with an active suspension system designed to compensate for sloping terrain, thereby allowing the materials to be lifted in complete safety.

5 – Versatility
Completely compatible with the wide range of equipment specially designed for Merlo telehandlers and interfaced with the exclusive automatic recognition system. The system for remotely managing the machine's movements via a radio control unit developed by Merlo allows the ROTO models to be operated under various conditions, thereby increasing their versatility.

6 – Efficiency
Simpler and smarter: the range is equipped with engines compliant with the latest emission regulations and with power ratings ranging from 75 to 170HP, as well as an electronically controlled Eco Power Drive (EPD) hydrostatic transmission for reducing the engine's speed whenever high power levels aren't required. Moreover, the dry disc brakes limit the absorption of energy, thereby reducing the machine's fuel consumption.

Roto 21-26 m range

• The **ENTRY** range provides you with all the essentials

ROTATION600°

The models in the ENTRY range offer you simple power and essential features. Developed to meet the needs of every construction site, of rental companies and large construction companies, ensuring performance and operational savings at the highest levels. ROTO ENTRY 50.21 and 50.26 are easy-to-use machines, ensuring reliability and performance. The 600° rotation, the new high visibility cab, the four wheel drive and steering and the 55 kW - 75 hp engine offer excellent results without compromising performance, comfort and safety.

• The **S-CLASSIC** range Power and style have a new icon

CONTINUOUS360°

A captivating style with aggressive lines defined by the new Modular design and the new high-comfort cab on which it is possible to install up to 6 LED headlights for uninterrupted operation. The engine complies with the stringent Tier 4B emissions regulations and produces power of 125 kW - 170 hp while maintaining low fuel consumption, as is the tradition for MERLO telescopic handlers. The active suspensions of the front and rear axles make road travel more comfortable and safe even on rough terrain, and ensure perfect levelling of the machine during lifting.

• The **S-PLUS** range, Comfort and performance that make work easy

CONTINUOUS360°

The models of the S-PLUS series have been designed to offer the maximum technology in terms of efficiency, performance and versatility of use, satisfying even the most demanding operators. The range is made unique by exclusive characteristics like the continuous 360° rotation that allows uninterrupted operation, the calibrated hydraulic system with dual variable displacement pump ("Load Sensing" system), the generous, comfortable cab that incorporates the patented Merlo system for vertical inclination that ensures maximum visibility and ergonomics. The Power train has a 125 kW - 170 hp engine with high power and torque combined with the exclusive Hydrostatic transmission with "EPD" electronic management system that provides the required performance with minimum consumption. The active suspensions of the front and rear axles make road travel more comfortable and safe even on rough terrain, and ensure perfect levelling of the machine during lifting.

Complete machine management

The large 10.1" colour display shows all the machine's operating information. The screens are navigated using the wheel control positioned on the armrest, which can be used to configure the machine's settings, like adjustment of the maximum movement speeds and geometric limitation of the work areas. The information related to machine management is displayed in a simple, intuitive manner. The load diagram screen is updated in real time according to the operating conditions, allowing the instantaneous display of information on safety and stability.



Stabilisers

The stabilisers of the ROTO 21-26 m range are structured to facilitate rapid and safe deployment that can be adjusted based on the operational conditions of the site. The exclusive design of the telescopic stabilisers guarantees the stabilisation from the totally retracted position to maximum extension, managed independently for each of the stabilisers. The load diagram automatically adjusts based on the position and consequent stabilisation area. The standard equipment includes self-stabilisation with automatic levelling that ensures correct positioning of the machine without operator intervention.





AVANT[®]

600 Series



New concept – top class features

Forerunner in design and technology

Once again AVANT can bring you cutting edge design and innovative technical features in their new concept machine.

AVANT designers listened to our customer requests and have produced a compact, powerful and versatile machine for professional use. We have been successful in incorporating the best lift capacity and hydraulic output for machine and attachments in this class. In tests, the **AVANT 600** series has already proven its capabilities in all working conditions.



AVANT 600 series offers all this, in right proportions:

- **Size** - enough to handle heavier loads
- **Smoothness** – does not damage lawns, pavings and other sensitive surfaces
- **Efficiency** – both for lifting and attachments
- **Maneuverability** – always needed when working in the yards and gardens
- **Power** – is useful in any work
- **Versatility** – you can do the job by using just one machine



Ergonomics and visibility



Well thought-out AVANT ergonomics

- Ample space even for larger operators
- Easily operated, well-positioned controls
- Excellent feel on both drive and hydraulics controls
- Unrestricted visibility – no need to reach out to see forward or to the side
- Safe and easy access to driver's seat



AVANT driver can see what he is doing and where he is going

Positioned in the front part of the machine, the operator's seat is as close to the attachment as it can safely be.

This, combined with the off center loader boom construction and the low front chassis design, provide wider field of vision, giving unrestricted view of the attachment working.

This great AVANT design improves work efficiency, precision and safety.



AVANT has the lifting capabilities of



AVANT 600 Series – all the advantages of a telescopic handler

The familiar AVANT qualities are excellent lift capacity and strong, robust construction. In addition, AVANT offers unbeatable features:

- Telescopic loader boom gives more lift height and outreach
- Modern off center boom construction guarantees excellent, unrestricted visibility
- Boom self levelling makes load handling quicker and more precise
- Joystick with electric control of telescopic boom and auxiliary hydraulics speeds up work and gives extra comfort
- More safety thanks to the overload warning system
- Articulated design allows precise sideways moving of the load in tight situations

a telescopic loader



Even lifting force in all positions of the loader boom

Thanks to the design of the bucket tilt mechanism the bucket breakout force of **AVANT 600** is the best in its class – and very even throughout the tilting range of the bucket. Tilting angle of the bucket is also adequate, both for filling and emptying.

Lift capacity of the loader boom is big enough for any situation, and it is further improved by the lifting force of the self leveling cylinder. With **AVANT 600** you can safely handle loads up to one tonne.



Stability and safety



Heavy load stability

Low center of gravity

The very low center of gravity of the **AVANT 600** allows excellent sideways stability. In stability tests the **AVANT 600** machines have been tilted sideways to the limit and the results have been conclusive.

Telescopic boom

The telescopic loader boom is an essential part of this great stability. The 600 series design allows you to keep the boom retracted and the load as close to the machine as possible, simply to be extended only when required.

Load sensor

The load sensor comes as standard in the **AVANT 600** series. Audible warning signals are heard if the rear wheels are about to lift off of the ground, warning the operator immediately should he, for example, inadvertently move the load away from the machine with the telescopic boom.



Advanced safety features

Rigid articulation joint

The rigid articulation joint which doesn't swing sideways is a very important feature in a machine of this size. Thanks to this rigid design the risk of tipping over of the machine is essentially smaller, because the rigid rear chassis will not allow the front chassis to tip the machine over. Many AVANT operators already have a lot of positive experience of this feature.

Safety frame

The ROPS safety frame – a standard feature like the tinted plexiglass canopy - of the **AVANT 600** series is a four post structure which really protects the operator, for instance when driving backward and accidentally hitting an obstacle. The ROPS frame and the optional FOPS canopy are tested and certified and comply with the relevant ISO standards.

Three different cab options



Cab means more working hours

AVANT 600 series is available with three different cab options:

- Light cab L with windscreen & wiper, right side window and rear window; without door and without heater
- Light cab LX with door and with heater
- Full cab DLX with door, heater, fabric seat, radio and lights

The main objectives in designing the cabs were:

- **Spacious and user friendly**

There is ample space for the operator. All controls are well positioned.

- **Easy access**

Big door and flat even floor guarantee easy access to the cab.

- **Excellent visibility**

Thanks to the big windows the cab does not restrict the field of vision of the operator.

- **Efficient heater (cab LX and DLX)**

The efficient heater keeps windows clear even in bad weather.

- **Safety**

All AVANT cabs are equipped with a tested and certified ROPS safety frame and they comply with the relevant ISO standards – as the regulations require. Also this makes AVANT a safe choice.

available

AVANT Cab L

AVANT cab L is an excellent and economical choice when the operator wants to have protection against rain, wind and snowfall. It improves operator comfort and working conditions considerably.

The cab mounts on the standard 600 series ROPS frame, which means safety is guaranteed. It consists of windscreen (equipped with wiper), right side window and rear window.



AVANT Cab LX

AVANT cab LX is the right solution when a cab with heater is required. The cab LX has all the features of cab L and, in addition, is equipped with a door and a heater, which further improve operator comfort in harsh weather conditions. And for warmer seasons the door and windows can easily be removed if necessary.

The optional headlight, blinker, reflector + beacon kit can be installed both on cab L and LX.



AVANT Cab DLX

The cab DLX is an independent ROPS/FOPS cab that mounts on the machine instead of the standard ROPS frame. It is equipped with a heater, noise isolating interior and fabric seat, radio and cab air filter. The headlight, work light, blinker, reflector + beacon kit is standard feature as well. This allows road traffic registration in some countries, please consult your AVANT dealer for more information.

AVANT cab DLX is spacious, fully equipped and well-lighted and stands comparison with any cab of similar size on the market.



AVANT knows landscaping and



groundcare



AVANT 600 – the ideal machine for landscaping

Exactly the right size

AVANT 600 series is strong enough to handle heavier loads like stone pallets, big bags etc. On the other hand, it is light enough so that it doesn't damage lawns, pavings and other surfaces.

The compact dimensions of **AVANT 600** mean it can work on any site, and it is easy to transport on a trailer from one work site to another.

Versatile

Perhaps it is the landscaping contractor who needs the most versatile machine. It is a great advantage if one can do many jobs with one single machine: earthmoving and moving of materials, loading and unloading, digging, leveling, milling and even paving. **AVANT 600** is just this kind of machine.

Estate and property maintenance





Versatile property maintenance machine

AVANT 600 series is an excellent machine for property maintenance. The main features for this demanding task are:

Versatility

Thanks to the complete attachment range **AVANT 600** series is a real all-year-round property maintenance machine.

Smoothness

The articulated design and compact dimensions make **AVANT 600** an unbeatable smooth and nimble machine. It can easily tackle tight situations like narrow roads, alleys and curves.

Cab

The spacious cab equipped with efficient heater guarantee comfortable working conditions despite the bad weather.

Drive speed

The drive speed of **AVANT 600** series is sufficient for reasonable driving distances. This makes it a useful machine for contractors who are doing property maintenance jobs.

Efficient material handling





AVANT for efficient material handling

For many companies **AVANT 600** series is an ideal all-year-round forklift truck for outdoors material handling.

AVANT has excellent loading and handling capabilities thanks to the telescopic boom and boom self levelling. In addition, with the same machine you can do various property maintenance jobs like sweeping, mowing, snow removal etc.

Do-it-yourself

Like its smaller siblings the **AVANT 600** series is an excellent machine for various do-it-yourself jobs – be it smaller earthmoving, material handling, landscaping, sweeping, trenching, lawn mowing... only your imagination sets the limits of what the AVANT can do!

Technical data, options



Pulling force

Hydraulic motor	Drive speed	Pulling force
OMT 315	17 km/h	900 kp
OMT 400	14 km/h	1100 kp
OMT 500	11 km/h	1400 kp

Wheels

Wheel size	Width
27 x 8.50 - 15	990 mm
23 x 10.50 - 12	1100 mm
26 x 12.00 - 12	1290 mm

Model	AVANT 630	AVANT 635
Length	2550 mm	2550 mm
Width (with 26x12.00-12 wheels)	1290 mm	1290 mm
Height	2090 mm	2090 mm
Weight	1350 kg	1380 kg
Standard wheels	26x12.00-12" grass/TR	26x12.00-12" grass/TR
Transmission, drive	hydrostatic	hydrostatic
Auxiliary hydraulics oil flow / pressure	44 l/min 200 bar	66 l/min 200 bar
Turning radius inside/outside	900 / 2190 mm	900 / 2190 mm
Max. lifting height (with telescopic boom)	2820 mm	2820 mm
Max. lifting capacity (hydr.)	1400 kg	1400 kg
Max. tipping load*	1100 kg	1100 kg
Max. breakout force / 50 cm	1250 kg	1250 kg
Engine make and type	Kubota D 1105	Kubota V1505
Engine output (ISO Gross)	21 kW (28 hp)	28 kW (37,5 hp)
Fuel	diesel	diesel

*with counterweights

Add efficiency and comfort to your work with options.

Boom



Telescopic boom



Self levelling boom



Boom floating



Hydraulic quick attachment coupling plate

Cabs



Cab L



Cab LX



Cab DLX

Work efficiency



Joystick



Rear auxiliary hydraulics



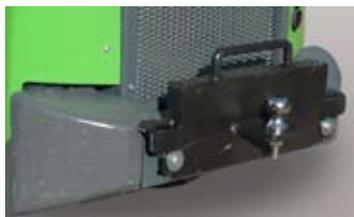
Road traffic light kit



Work light kit



Rear side weights, 180 kg



Extra weights, trailer coupling



Rear bumper



Hydraulic rear lift



Heavy duty covers



Tilt adapter



Catalytic converter



Heavy duty wheels



Snow chains



Two auxiliary hydraulics outlets in the front



Multi connector system for attachments



Attachment control switch pack

Drive



Drive release valve



Anti slip valve

Other options



Engine block heater



FOPS canopy



The most comprehensive, high quality attachment range

AVANT attachments have been designed to work as an equal partner on AVANT loaders, following these principles:

Compatibility

Best machine-attachment combination can only be achieved when a good basic machine is fitted with attachments that are specifically designed for this machine. The dimensions, auxiliary hydraulics output and other features of AVANT are in perfect balance with the attachments.

Efficiency

Work efficiency of the attachments is of great importance. AVANT attachments have been designed to give maximum output with the combination loader-attachment.

Durability

Attachments are designed for hard, continuous professional work.

Safety

Special attention has been paid to safety features in attachment design.



Buckets, material handling

General buckets



Width	Capacity	Weight
890 mm	180 l	57 kg
1050 mm	210 l	65 kg
1100 mm	215 l	68 kg
1280 mm	260 l	75 kg
1400 mm	285 l	90 kg

AVANT general buckets are designed to speed up your work and make it more efficient: the operator can see the front edge of the bucket from the driver's seat, which means quick and easy loading and emptying. There is a grill at the upper end of the bucket which prevents stones from falling towards the operator.

Light material buckets



Width	Capacity	Weight
1050 mm	400 l	95 kg
1100 mm	420 l	99 kg
1280 mm	485 l	105 kg
1600 mm	610 l	125 kg
1800 mm	685 l	137 kg

AVANT manufactures buckets in different widths and volumes, destined for different types of jobs, e.g. light materials handling (saw dust, manure, wood chips, mulch), snow removal etc.

High tip buckets



Width	Capacity	Weight
1050 mm	150 l	129 kg
1280 mm	350 l	160 kg
1800 mm	700 l	330 kg

With high tip bucket you can reach longer and higher than with many bigger machines. The bucket tips over its front edge, which with the telescopic boom means a dump height of 3,15 m!

4 in 1 buckets



Width	Capacity	Weight
1100 mm	155 l	152 kg
1280 mm	170 l	175 kg
1400 mm	190 l	190 kg

Efficient multi purpose bucket - can be used as a normal bucket as well as a dozer blade, leveler, stone picker etc. The front part of the bucket opens with 2 hydraulic cylinders located on the back side of the bucket, which enables dozing, levelling and picking of stones, tree stumps etc. The bucket can also be emptied by opening it, which gives more dumping height. Available with straight edge or with teeth.

Skip bucket



Capacity	350 l	700 l
Width	950 mm	1390 mm
Weight	120 kg	175 kg

AVANT skip bucket is a very useful attachment for waste collecting and storage as well. Thanks to the two supports you can leave it where you want, fill it and empty it the AVANT way - sitting on the driver's seat. The bucket can also be equipped with a lid.

Grapple bucket



Width	Weight
900 mm	130 kg
1050 mm	145 kg
1300 mm	165 kg

Grapple bucket combines a normal bucket and a grapple and is therefore suitable for a multitude of jobs. It can be used for transporting and loading of branches, wood chip, compost, straw, manure etc. It can also be used as a normal bucket with the grapple in the upright position.

Dozer blade



Working width	2000 mm	2500 mm
Weight	165 kg	260 kg
Angle	±30 °	±30 °
Blade height	500 mm	520 mm

Equipped with hydraulic blade turning, the AVANT dozer blade is the ideal tool for jobs where the materials must be dozed away quickly. Blade is replaceable; standard blade has straight edge, can also be fitted with rubber or saw-type edge for efficient ice cutting.

Pallet fork



Length	850 mm	1100 mm
Weight	90 kg	105 kg

AVANT pallet fork is the right attachment for lifting and handling of different types of light materials on pallets. Fork width is easily adjustable with quick-release locking mechanism. Forks are made of heat treated tapered steel and they comply with the relevant ISO standards.

Jib boom



Boom length	1020 mm
Hooks	2 pcs
Weight	30 kg

AVANT jib boom is a simple and ingenious attachment: lifting and moving of heavier loads in tight situations is not a problem when you have this jib crane on your AVANT.

Telescoping jib boom



Max. length	1900 mm
Min. length	1300 mm
Lift height	4,7 m
Weight	110 kg

Jib boom is an excellent tool for all kinds of lifting tasks which cannot be done with pallet forks. With the jib boom you can lift materials to higher levels and to places that are difficult to reach; with smooth, exact and safe control of the boom. This jib boom with hydraulic telescope is even more efficient and versatile in all lifting jobs.

Digging and construction



Backhoe 210

Digging depth	2100 mm
Loading height	2000 mm
Slewing	140 °
Buckets	250/400/700 mm
Weight	190 kg

AVANT backhoe 210 is a very compact and amazingly powerful digging unit. It is very quick and easy to mount on the loader (takes only a couple of minutes), and then you have a unit that can work efficiently even in very tight situations. Low weight allows transportation on trailer. Dozer blade at the bottom of the frame is standard feature.

Backhoe 220/250



Digging depth	2200 mm	2500 mm
Loading height	2100 mm	2100 mm
Slewing	180 °	180 °
Buckets	280/400/700 mm	
Weight	350 kg	370 kg

AVANT 220 and 250 backhoes are specially developed for hard professional work, also in tight situations. The slewing angle of both models is full 180°. They are easy and quick to mount on the loader, and a hydraulically operated locking bar which mounts on the loader chassis ensures stability during operation. In addition, manually adjustable support jacks are standard feature. Hydraulic tilt grading bucket available as an option.

Digger 140



Digging depth	1400 mm	1400 mm
Loading height	2500 mm	2500 mm
Buckets	250 mm	400 mm
Weight	80 kg	90 kg

AVANT Digger 140 is a very efficient and solution for small digging operations where a max. digging depth of 1400 mm is enough. It mounts on the quick attach plate of the loader and is operated by the auxiliary hydraulics control lever. Turning to the side happens by turning the steering wheel.

Trencher



Digging depth	max 900 mm
Trench width	100 - 150 mm

With trencher you can easily dig narrow trenches without damaging lawns and gardens – this trencher is ideal for smaller cable or pipe laying. Digging depth is max. 900 mm, digging width normally 100 mm or 150 mm, depending on chain type. Planetary drive with hydraulic motor guarantee efficient and trouble free operation. Three different types of chains available: standard earth chain, frost chain and heavy duty chain with tungsten teeth.

Auger



	Augers	Max. torque
Direct drive	100 - 300 mm	1355 Nm
HD 35	100 - 400 mm	1886 Nm
HD 45	100 - 600 mm	2452 Nm
HD 58	100 - 900 mm	3017 Nm

Powerful hydraulic auger with many different auger diameters to suit various tasks, be it post hole boring, tree transplanting etc. Planetary drive gives a lot of torque, replaceable teeth (tungsten teeth as standard) and pilot head enable drilling in hard ground and sandstone also. With the optional extension shafts drilling depth can be increased to max. 2,5 m.



Hydraulic breaker

Model	Impact energy	Weight
AVANT B70	112 J	70 kg
AVANT B110	180 J	110 kg
AVANT B160	270 J	160 kg

AVANT breakers are specially designed to give best performance together with AVANT loaders. They are extremely efficient and versatile tools in demolition and refurbishing operations: with the same machine you can do the demolition first and then take the debris away with a bucket – very fast and effective, and you can go almost anywhere with this unit.

Concrete mixing bucket



Volume	270 l
Rotation by	hydraulic motor
Weight	490 kg

AVANT concrete mixing bucket is the ideal attachment for situations where electricity is not available or the mixed concrete must be transported and/or lifted to a place not easily accessible. The concrete mixing bucket is powered by a hydraulic motor and emptying happens by tilting the mixer forward.



Winch

Pulling force	1000 kp
Pulling speed	2,3 m/s
Cable length	30 m
Weight	105 kg

The AVANT hydraulic winch enables towing of all kinds of objects (e.g. logs, poles, boats) from places where you cannot drive with the machine. The winch is equipped with a safety net, 30 m of wire rope and a towing hitch. It is powered by a hydraulic motor, mounts on the attachment coupling plate and is operated with the auxiliary hydraulics control lever.



Log grab

Log diameter max.	500 mm
Weight	60 kg

AVANT log grab mounts on Avant pallet forks. With the log grab you can lift and transport single logs or smaller timber bundles. The grab is equipped with a powerful hydraulic cylinder and it can therefore lift bigger stones and also branches, twigs and similar material.



Leguan 50

Max. allowed load	200 kg
Max. working height	5,0 m
Height (with lowered platform)	1900 mm
Width	1300 mm
Weight	150 kg

The Leguan 50 is mounted directly on to Avants quick attach plate like any other Avant attachment. This makes it fast and easy to mount it on and take it off. The lift is designed according to all access platform directives and it is CE-certified. The safe working load for the lift is 200 kg which means it is allowed for operation with two men or one man with plenty of tools.

Property maintenance

Rotary brooms



Working width	1050 mm	1300 mm
Broom diam.	500 mm	500 mm
Broom mat.	Nylon	
Weight	130 kg	160 kg

AVANT rotary broom is equipped with a floating bracket (allows about 100 mm vertical movement) and three big support wheels in order to follow the contours of the ground. Sweeping angle can be adjusted manually (straight or $\pm 20^\circ$) Broom is made of nylon – solid steel or nylon/steel brooms are available as an option.

Brooms with collector box



Working width	1050 mm	1300 mm
Working width with side brush	1350 mm	1600 mm
Waste box volume	170 l	170/200 l
Weight	230 kg	380 kg

AVANT brooms with collector box are specially made for larger yards and street cleaning. Three big support wheels guarantee smooth and easy operation. With the optional side brush cleaning of kerbs and street corners is easy. Collector box emptying is hydraulic – operation with auxiliary hydraulics control lever.

Snow brooms



Working width	1050 mm	1300 mm
Broom diam.	550 mm	550 mm
Broom mat.	Nylon	
Angle adjust.	Hydraulic	
Weight	130 kg	160 kg

AVANT snow broom is destined especially for snow sweeping. It has been designed to give the best possible snow cleaning results even on uneven surfaces. This broom can also be used as a normal rotary broom for all year round sweeping.

Vacuum brush



Width without side brooms	1200 mm
Width with one side broom	1650 mm
Width with two side brooms	2100 mm
Collector box volume	800 l

The vacuum brush is intended mainly for collecting of tree leaves in parks, lawns, yards etc. The powerful vacuum unit sucks the waste first into the vacuum on the bottom of the collector box and then into the box, compacting everything into a tight package. The mouthpiece on the vacuum unit has a brush that loosens also more compacted and wet leaves and waste. Brush rotation speed can be adjusted steplessly.

High pressure washer



Working pressure	200 bar
Water consumption	5-30 l/min
Water tank capacity	270 l
Nozzles	8 pcs

This efficient hydraulic washer is fitted with a 270 l water tank. Max. water pressure is 200 bar, water use is adjustable. Equipped with an adjustable 8 nozzle bar for street washing. A hand held washing gun with 15 m hose roll is standard equipment as well.

Tipping trailer



Load capacity	1200 kg	1800 kg
Width	1125 mm	1350 mm
Length	1710 mm	2240 mm
Tyres	23x8,50-12	26x12-12
Side height	280 mm	560 mm

AVANT tipping trailer is available in two models: with carrying capacity of 1200 kg or 1800 kg. Both are equipped with hydraulic tipping. All sides can be removed if necessary. Extra side set is available as an option for the smaller model, on the bigger model it is standard. **ATTENTION!** The loader must be equipped with the rear auxiliary hydraulics outlet and trailer coupling.

Sand spreader



Working width	1500 mm
Capacity	500 l
Operation	with hydraulic motor
Weight	250 kg

A hydraulic sand spreader for fast and efficient sand spreading. Front mounting allows loading from ground level in the same way as with normal bucket. Powered by hydraulic motor and equipped with a mixer axle, which prevents the sand from clogging up. The mixing axle and spreading axle are protected against larger rocks with a net.

Snow plow



Working width min. and max.	1800 mm	2200 mm
Blade height	600 mm	600 mm
Plowing angle	$\pm 35^\circ$	$\pm 35^\circ$
Weight	240 kg	270 kg

AVANT snow plow is the right attachment for efficient snow removal. It consists of two independently adjustable blades. Both blades are spring released and follow very well the contours of the ground thanks to the floating design of the mounting bracket. Angle of each blade can be adjusted separately with electric control switch.

Centrifugal spreader



Spreading width	0,8-6 m
Volume	250 l
Payload	500 kg
Weight	105 kg

This robust spreader is destined for spreading of sand, gravel, salt and fertilizers. Spreading width and amount are easy to adjust and spreading can be directed just to one side if necessary.

Snow blower



Working width	1400 mm
Chute rotation	270°
Weight	265 kg

The two phase design (first the auger of the blower takes in the snow, then a separate turbine blows it out) of the AVANT snow blower makes it a very efficient snow removal tool, also with wet and heavy snow. Discharge chute rotation is 200° , powered by hydraulic motor and operated from the driver's seat. Blowing height can be adjusted manually.

Groundcare

Lawn mower I 200



Cut width	1200 mm
Knives	2 pcs
Cut height	25 - 100 mm
Weight	170 kg

AVANT lawn mower is a strong and efficient hydraulic mower deck, equipped with four support wheels. It is a mulching mower, but by removing the mulching blades it can also eject the grass to the side or under the mower. Cutting height can be adjusted independently on each wheel. Thanks to the floating design and big rubber support wheels operation is easy in uneven terrain as well.

Lawn mower I 500



Cut width	1500 mm
Knives	3 pcs
Cut height	25 - 100 mm
Weight	200 kg

The biggest AVANT lawn mower is destined for mowing of larger areas. It is equipped with a floating mounting bracket and four rubber support wheels. This robust mower ejects the grass behind the mower.

Collecting mower



Cut width	1200 mm
Knives	2 pcs
Cut height	25 - 100 mm
Collector capacity	210 l

With the new AVANT collecting mower you can easily do the mowing and collect the clippings. Thanks to its excellent suction power collecting of leaves from the lawns is also possible.

Collecting lawn mower I 500



Cut width	1500 mm
Knives	3 pcs
Cut height	25 - 100 mm
Collector capacity	800 l

Collecting mower designed for professional use with 1500 mm cutting width and 800 liter collector box. The high suction power makes it also possible to collect tree leaves on lawns. The blades cut the grass, tree leaves etc. to a fine mulch which packs tightly into the collector box. Collector box volume is designed to be large enough for professional use also in larger areas. The box is emptied from Avant's driver seat with an electric switch and with the help of Avant's boom the collector can be emptied into a container, skip etc.

Flail mower



Working width	1300 mm	1500 mm
Cut height	30-100 mm	
Number of cutters	36 pcs	42 pcs
Weight	290 kg	315 kg

AVANT flail mower is the right attachment for situations where a normal lawn mower cannot be used and where the cut can be more rough. Cuts efficiently long grass and small scrub and is therefore an ideal tool for road bank mowing and similar jobs. Can be equipped with an extension arm for side mount.

Flail mower with hydraulic boom



Max. outreach	3,5 m
Working width	1,0 m

With the hydraulic boom flail mower you can easily and efficiently mow ditch banks, road sides, embankments and other slopes that are hard to reach. The flail mower is equipped with proportional joystick controls and is operated from the driver's seat.

Edge trimmer



Cutting depth	max. 150 mm
Weight	65 kg

AVANT edge trimmer is a perfect attachment for trimming the edges of a lawn, hedges, flower arrangements etc. It consists of a hydraulically operated trimmer mounted next to a cutting disc. The trimmer levels the cutting edge. Cut depth is adjustable.

Wood chipper



Timber diameter	max. 80/160 mm
Chip length	apr. 13 mm
Weight	300 kg

With the hydraulic AVANT wood chipper you can quickly chip branches, small tree trunks, logging waste, sawmill residue etc. This powerful double-knife disc chipper is equipped with manual wood feeding. Chips can be directed through 360 degrees by turning the chimney.

Log splitter



Log diameter	400 mm	400 mm
Log length	600 mm	1000 mm
Splitting capacity	n. 40 logs/min	
Weight	150 kg	250 kg

AVANT log splitter is equipped with a hydraulic cylinder which pushes the log against the splitting blade. Height of the blade is adjustable, allowing splitting either into two or into four pieces. The splitter has automatic reverse and cylinder stroke can be adjusted with a limit switch. Safety features include a stop switch which prevents operation if the blade cover is not down.

Log cutter/splitter



Log diameter	max. 300 mm
Cutting length	200-500 mm
Sawbar	13"
Weight	265 kg

AVANT log cutter/splitter is a very efficient firewood making machine. It combines a chain saw and a hydraulic log splitter. The log cutter/splitter can be transported with AVANT loader, either mounted on the quick attachment plate in the front or by connecting it to the trailer coupling in the rear.

Landscaping

Rotary hoe



Working width	1300 mm
Working depth	max. 150 mm
Weight	180 kg

AVANT rotary hoe is designed for heavy use, equipped with hydraulic motor and chain drive. Adjustable cultivating depth up to 150 mm - ideal for fine preparation of garden beds, seedbeds, rotovating etc. Can also be equipped with a field roller which makes cultivating depth adjustment easier and levels the cultivated soil.



Stone burier

Working width	1300 mm	1500 mm
Working depth	0-140 mm	
Weight	250 kg	300 kg
Weight with seeding unit	290 kg	350 kg

A professional hydraulic stone burier for preparation of areas to be turfed, seeded or planted. The stone burier cultivates the soil, buries stones and other objects up to 150 mm deep in a single pass, leaving a cultivated and consolidated topsoil. Working depth steplessly adjustable with the rear field roller. Separate seeding unit which mounts on the stone burier is also available.



Rotary harrow

Working width	1220 mm	1400 mm
Width of the field roller	1350 mm	1500 mm
Working depth	0-140 mm	
Weight	220 kg	250 kg

AVANT rotary harrow is an excellent leveler for lawn beds, yards, gardens etc. - for places where the ground needs to be perfectly levelled. It harrows the topsoil only and gives a very nice finish for sowing. Required hydraulics output is lower than that of the stone burier. Working depth is adjusted with the rear field roller which levels the seeding bed during operation.



Leveler

Width	1200 mm	1500 mm
Weight	85 kg	95 kg

A simple and inexpensive but incredibly useful and efficient attachment for levelling larger areas. With AVANT leveller you can easily and quickly level cultivated soil as a prelude to turfing, seeding or planting, and it can be used effectively in sand schools.



Ripper

Width	500 mm
Ripping depth	apr. 300 mm
Weight	50 kg

With the powerful AVANT ripper you can break up ground, pull out roots and rip up compacted ground. Equipped with three replaceable tines, ripping angle can be adjusted with the tilt cylinder of the loader.

Stone installation clamp



Main gripping width	575 - 1245 mm
Total width	990 - 1480 mm
Carrying capacity	400 kg
Weight	230 kg

With the hydraulic installation clamp you can lay paving stones quickly and efficiently. Equipped with adjustable side grippers, hydraulic rotation and ADV pushing off device. Hydraulic control with two hydraulic circuits. Mounts on AVANT jib boom.



Stone grab

Opening width	50 - 480 mm
Inside height	170 mm
Gripper length	420 mm
Capacity	900 kg
Weight	55 kg

The mechanical stone grab is easy to mount on the AVANT jib boom. Thanks to the powerful gripping force it can handle concrete components, kerb stones, natural stones, tombstones etc.



Stump buster

Cutting head diameter	350 mm
Drive shaft length	500 mm
Weight	250 kg

AVANT stump buster is an efficient, easy and safe way for removing tree stumps. It drills big holes in the stump, gradually removing the stump. The three blade cutting head has slow speed and high torque, which means it can be used within confined spaces and pedestrian areas safely.



Grabbing tool

Grab diameter	250-1200 mm
Max. load	650 kg
Weight	95 kg

Grabbing tool is mainly intended for lifting and handling of round objects. It is especially suited for lifting of barrels and plant and tree pots. Grabbing force can be adjusted, which means all kinds of objects can be handled without damaging them. Grabbing tool is equipped with two smaller, rubber padded grabs which allow handling of smaller and more fragile objects as well.



Push Broom

Width	1300 mm
Weight	34 kg

Push Broom is a handy and inexpensive broom for cleaning smaller areas. Push broom has no rotating parts and the idea is to simply push the material in front of the broom. Push broom can also be used when making pavements. By pushing the filler sand sideways across the paving stones the sand will fall nicely between the stones.

Farming

XL Silage fork



Width	Weight
1100 mm	190 kg
1300 mm	200 kg
1500 mm	215 kg

The new XL silage forks are designed for moving large amounts of silage efficiently and comfortably. The upper grapple is equipped with two cylinders and specially formed tines to ensure maximum penetration into hard packed silage. Maximum visibility is achieved through the open design of the upper grapple. All tines are manufactured from heat treated reinforced steel and are easily replaceable thanks to bolt mounting.

Dozer blade for silage fork



Width, main blade	1200 mm
Width, side blade	550 mm
Weight	50 kg

The dozer blade mounts on the silage fork: just drive the fork into the blade and lock it with the upper grapple of the fork. Destined for cleaning of the floors in cowhouses, stables etc. Equipped with one side blade as standard.

Silage dispenser



Volume	650 l
Width	1360 mm
Weight	240 kg

This dispenser bucket is equipped with hydraulically driven elevator in the bottom and discharging to both right or left side. Especially recommended for precision chopped silage and feeding stuffs mixed with feeding mixers. Loading from ground is easy by tilting the bucket forward. Distributes silage to about 10 cows / fill - it takes approx. 10 minutes to distribute silage to 50 cows.

Grain / flour dispenser



Capacity	300 l
Width	1100 mm
Weight	90 kg

AVANT grain dispenser is a 300 l bucket equipped with a hydraulic motor and a Ø 200 mm screw, destined for distribution of flour, crushed grain etc. Discharges to the right side or to the left side. The edge of the grain dispenser tilts all the way down so that loading from ground level is very easy.

Straw blower bucket



Capacity	665 l
Height	1270 mm
Width	1460 mm
Weight	200 kg

With the straw blower bucket you can distribute straw quickly and easily to the cow stalls by driving with your Avant. The blower fan discharges the material up to 3-4 m distance, depending on engine rpm. The bucket can blow chopped straw, sawdust, turf and small wood chips. The bucket can be equipped, as an option, with a scraper blade which mounts under the bucket, destined for floor cleaning. With the optional side brush one can clean the back part of the stall also. The bucket is available with discharge either to the left or to the right side.

Silage block cutter



Width	950 mm	1280 mm
Weight	175 kg	280 kg
Capacity	n. 250 kg	n. 400 kg

Powerful and robust silage cutter with two hydraulic cylinders, can be used with all AVANT loader models. With the silage cutter you can easily cut silage from silo and take it directly to the cattle. Thanks to the open design of the cutting blade visibility during silage distribution is very good. Cuts about 8 animals' silage at one time. Tines are made of reinforced steel.

Carousel broom



Working width	1000 mm
Broom diameter	1000 mm
Broom material	Nylon
Weight	70 kg

This hydraulically operated broom is a useful attachment when sweeping materials to the side. Rotates in both directions, can be used for various tasks and can be equipped with different types of brooms.

Bale grab



Weight	120 kg
Max bale weight	900 kg
Max. grabber width	1470 mm

With the bale grab you can transport wrapped silage bales, hay bales and other round bales without damaging the bale wrapping. A special grab is available for square bales. Please consult your local Avant dealer.

Horse arena harrow



Width	1350 mm
Weight	240 kg

The horse arena harrow is intended for levelling and loosening horse arena riding surfaces. The harrow has two spring loaded tine rows which will loosen the surface, a leveller that will make the surface completely even and a tilling roller that will compact the ground, leaving a great looking finish to the surface. The harrow will not disturb the lower levels (understructure) of the riding surface. **Attention:** The loader needs to be equipped with single acting rear hydraulics and trailer coupling.

Big bag lifter/transporter



Lifting hook height	1200 mm
Width	1000 mm
Weight	80 kg

With the big bag lifter/transporter you can lift and transport big bags. This simple attachment makes loading of fertilizer or stacking of big bags as easy as it can get.



State-of-the-art manufacturing

AVANT manufactures using the most modern production machinery and methods and benefits from production in series. Quality control, testing and extensive test run for every machine prior to delivery are the essential features of AVANT quality system.



Spare parts

Quick and reliable spare parts service is very important for any machine owner and operator. AVANT distributors have organised spare parts supply from their stock and the factory can deliver most parts overnight.



Resale value

AVANT holds its value very well. Good strong basic construction, reliable uncomplicated design, long experience from all kinds of working conditions worldwide combined with a comprehensive service network and spare parts service guarantee that AVANT is the safe choice.



Familiarise yourself with the wide AVANT loader and attachment range on our website:

www.avanttecno.com

On the website you can also download video clips of the machines at work.

Consult also the website of your local AVANT dealer.

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e-mail: sales@avanttecno.com

AVANT has a policy of continuing improvement, and retains the right to change specifications without notice.

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www.avanttecno.com

BILLENNIUM QUICK-PRO

CRAWLER TELESCOPIC SPIDERBOOM



PATENT PENDING

B1890 EVO



ALMACRAWLER

BILLENNIUM B1890 QUICK-PRO

**VERSATILITY
EFFICIENCY
CREATIVITY
AGILITY**

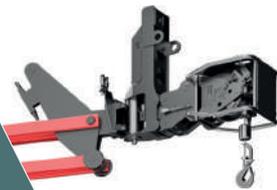
The Billeonium Line features morphologically unique models to provide a superior user experience and greater market adaptability for the real needs of the rental and end-users sector alike.

The new Line is characterized by its unique automatic stabilization systems. There are two different types of stabilization: VISUAL with a single fixed area and the innovative Quick-PRO, a fully automated stabilization system with six different combination.



18mt.
working
height

*A new concept
to work at height...
The SpiderBoom!*



**WINCH
KIT
200 KG**

**1.4 mt BASKET
STANDARD**



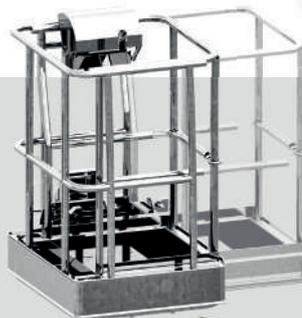
**1.8 mt BASKET
OPTIONAL**



**BASKET
SIZE**

OPTIONAL

**TASKET
RESIZABLE BASKET
DISMOUNTING NOT REQUIRED**



A resizable basket that allows the operator to manually extend the basket sideways.

The Tasket Basket by AlmaCrawler is the only two-operator basket that does not require disassembly to go through narrow passages, extending from a minimum width of 0.78 m to a full 1.20 m.

XXL

ULTRA EXTENDABLE
UNDERCARRIAGE
SIZE "XXL"



With a width of 1,39 m, a length of 2.15 m and a height of 0,47 m, these tracks are the longest and widest on the market.

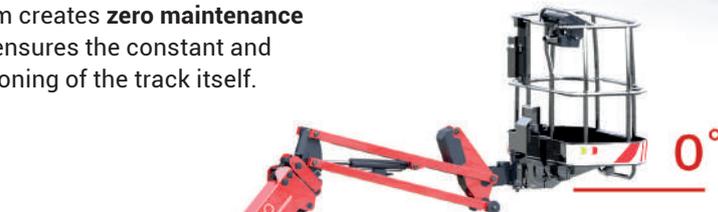
Their size increases the operator's safety when travelling over rough and sloping terrain.

ATS

AUTOMATIC
TENSIONER
SYSTEM

The track tensioning system is a hydraulic cylinder directly connected to and controlled by the main hydraulic system.

The system creates **zero maintenance** because it ensures the constant and correct tensioning of the track itself.



The SPS system is what allows the use of the Billennium Spiderbooms even without lowering the stabilizers, leveling longitudinally up to a maximum of 10° with a maximum working height of 9 m (max lateral slope 5°).

This is made possible by the seamless technological mix of proactive and dynamic leveling, the XXL undercarriage and an automatic hydraulic longitudinal leveling of the basket.

SPS

SELF-PROPELLED
SKILL SYSTEM



PATENT PENDING

EXTRA
OUTREACH



This system calculates the stabilization area in real time by measuring the angle of descend of each individual stabiliser in order to optimise the operational outreach performance over the entire working area up to an extra 0.5 m.

AWP

ADAPTIVE
WORKING
PERFORMANCE

PATENT PENDING

Technical data	EVO
Max working height	18,00 m
Max height basket floor	16,00 m
Moving height	9,00 m
Max outreach (load 80 kg)	10,9 m
Max outreach (load 140 kg)	9,8 m
Max outreach (load 200 kg)	8,8 m
Max outreach (load 230 kg or 250 kg)	8,1 m
Rotation angle	+/- 185°
Basket size	1,4 x 0,74 m
Basket rotation angle	+/- 70°
Max basket capacity	250 Kg
Length in stowed position (with detached basket)	5,84 m (5,14 m)
Min width in stowed position	0,79 m
Working width on tracks	1,39 m
Min height in stowed position	1,98 m
Longitudinal leveling by SPS	+/- 10°
Max lateral inclination with SPS	+/- 5 °
Max gradeability	20°
Max side gradeability	+/- 5 °
Maximum stabilisation area	3,65 m x 4,79 m
Stabilisation	Quick-PRO
Drive speed (fast)	2,3 Km/h
Security speed	0,75 Km/h
Non-marking tracks	Yes
Cable Remote LED Console or DISPLAY	Yes
ATS, AWP, SPS	Yes
Removable pads	Yes
Weight	
Total weight	~2930 Kg
Power	
Main Power Source	YANMAR 2TNV70 10.2 kW (13.9 HP) @ 3600 rpm
Hydraulic gearmotors	Yes
Electric gearmotors	No
N°2 battery charger 20Ah-48 V	No
Extras - On Demand	
Tasket Basket	0,78 (1,20) x 0,7 m
Wide Basket	1,8 x 0,7 m
Hatz 1B40 Diesel engine	No
Electric pump 220V-2,2KW / 50Hz (Weight +30 Kg)	Yes
Radio remote display or led controller	Yes
Arctic lubricant for cold climate	Yes
Winch Kit Series 200 kg	Yes
Anticollision System	Yes
Customized powder coating (One Special Colour + BLACK 9005)	Yes

**CONTROL
DEVICE**

Available on all models: LED or DISPLAY radio or remote controller. Both versions have been designed to be user-friendly and allow proportional joystick driving.

LED

DISPLAY


Simplify and centralize the management of all after-sales activities, spare parts purchasing and warranty procedures.

Providing 24/7 access to all technical documents and tools for daily management.

Manage all your ALMAC products in one single online portal.

**MYALMAC
CONTROL
PANEL**

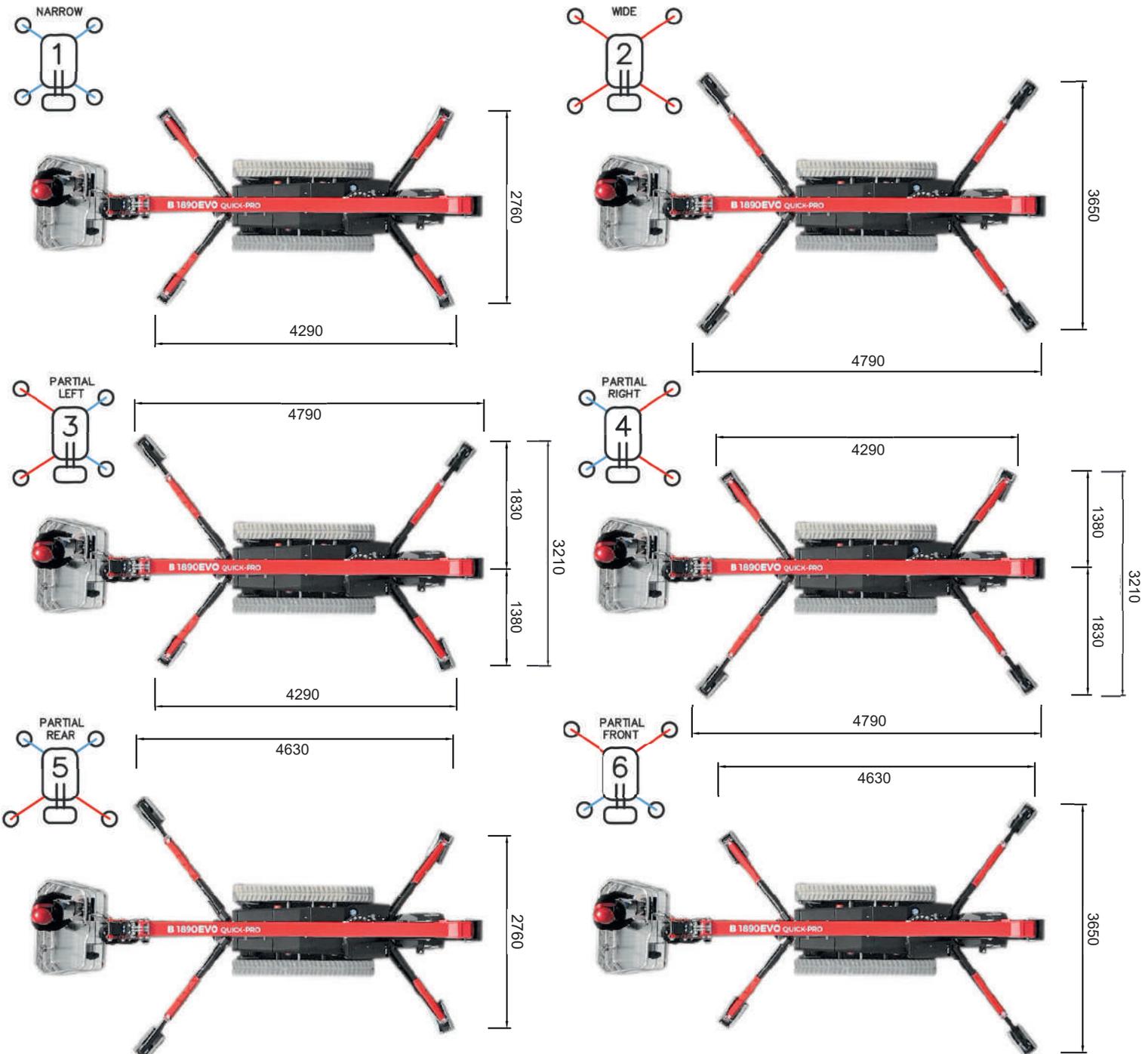
QUICK-PRO

6 COMBINATIONS AUTOMATED STABILIZATION SYSTEM

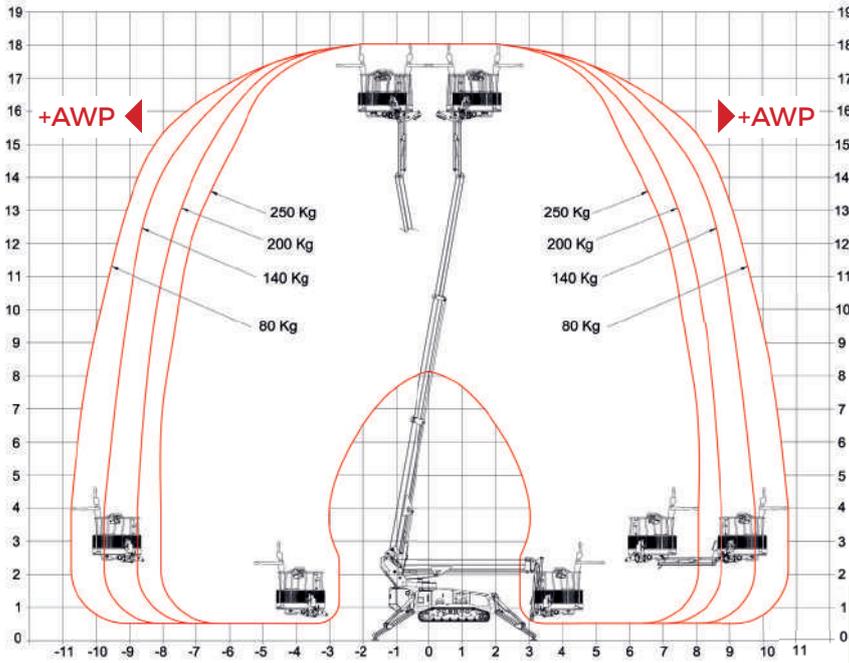
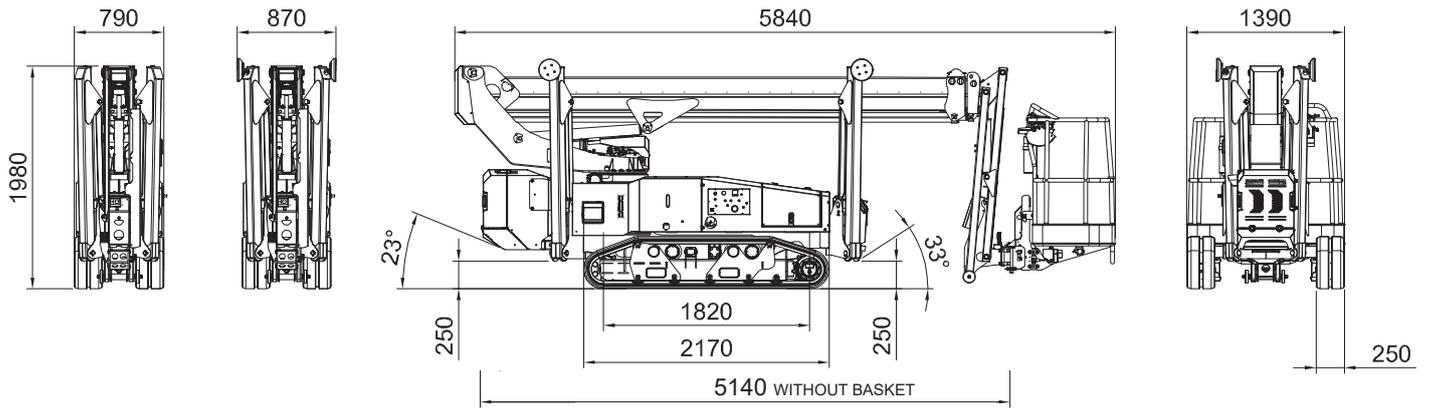
Fully Automated Stabilization with Variable Areas which offers 6 different machine positioning combinations, simple to choose through the appropriate selector; by automatically interacting with the AWP system, it guarantees the operator the best possible outreach performance.



QUICK-PRO
SELECTOR



B1890 QUICK-PRO

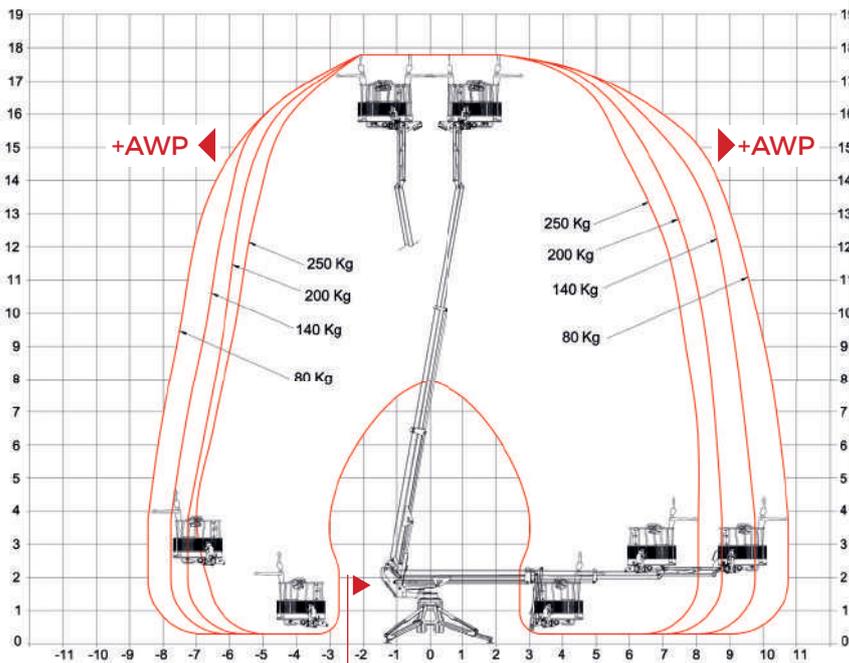


AWP

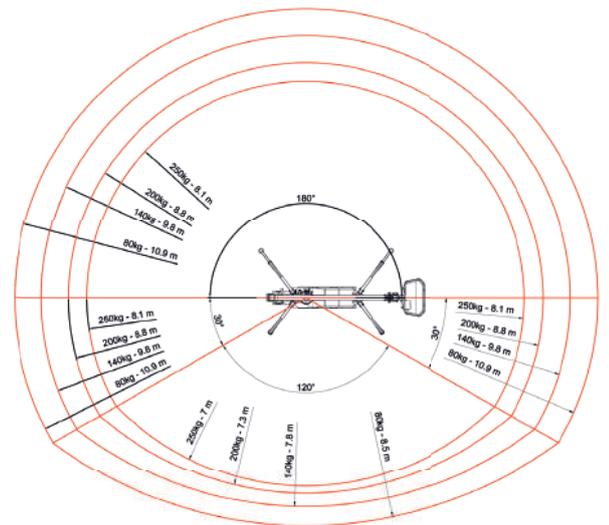
ADAPTIVE WORKING PERFORMANCE

PATENT PENDING

EXTRA OUTREACH



Zero tail swing



ALMACRAWLER

Via Caduti sul Lavoro 1
46019 Viadana (MN) - ITALY
+39 0375 83 35 27
info@almac-italia.com
www.almac-italia.com



JIBBI 1250 EVO
ALMACRAWLER

MakiFit



P130



AERIAL PLATFORM MOUNTED ON AN ISUZU D-MAX



Working Height



Contact us:
CPL
38b Telford Way Ind. Est.
Kettering, Northamptonshire
NN16 8UN. England
Tel. +44 (0)1536 529876
www.cpl-ltd.com



PICK UP AERIAL PLATFORM

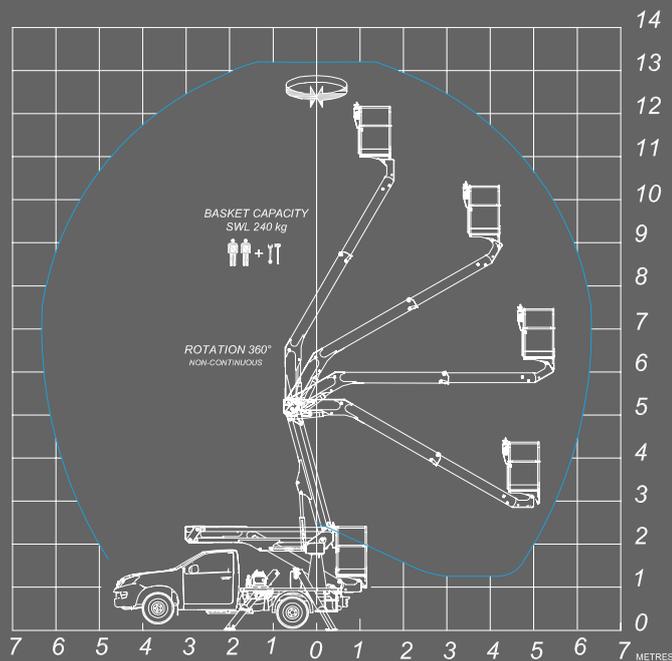
Demonstrations upon request

P130 Access Platform

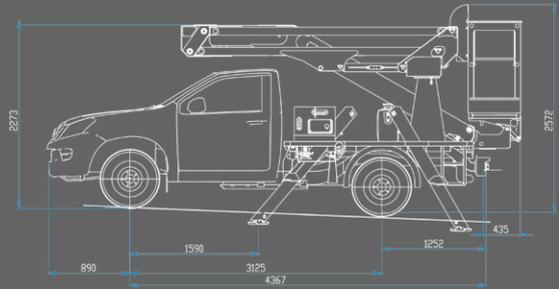
mounted on a 3.5t Isuzu D-Max



WORKING DIAGRAM



VEHICLE DRAWING



STANDARD SPECIFICATIONS

- 4 A frame stabilisers
- 2 person plastic basket
- Self levelling basket with manual trim
- Basket access from the ground
- Knuckle remains within the confines of the vehicle envelope
- 5 degree stability
- 1 Kv Insulation protection
- 24 degree departure angle

OPTIONS

- Type approved towbar with 7tn GTW
- Fibreglass walk in basket
- Signalling Devices (Roof beacons, Full beacon set, Chapter 8 markings)
- Reversing camera
- Chapter 8 Graphics
- Secure aluminium lockers
- Key out system
- Parking sensors

For more platform options, please contact us before ordering.



13.1m



6.2m



360°
Non-Continuous



240kg



1100 x 660 x 1360mm



Hour
counter



≤3.5 T



POSSIBLE TYPES OF VEHICLES

- Isuzu D-Max
- Toyota Hilux

For vehicle options, please contact us before ordering.

KT₂₀

CPL

AERIAL PLATFORM MOUNTED ON A CHASSIS



Working Height



Contact us:
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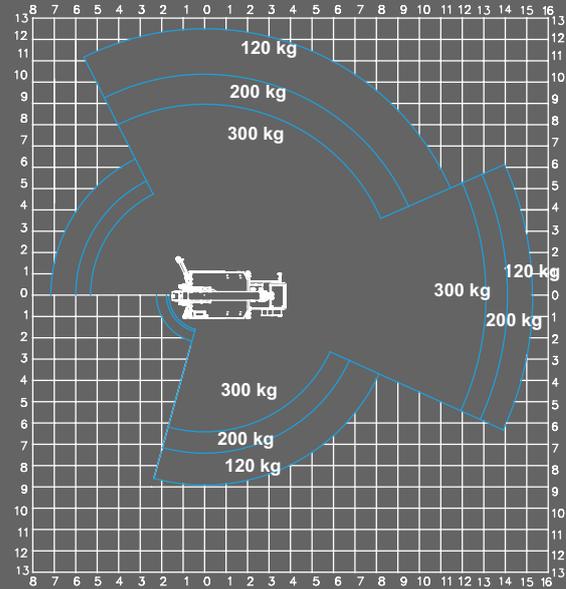
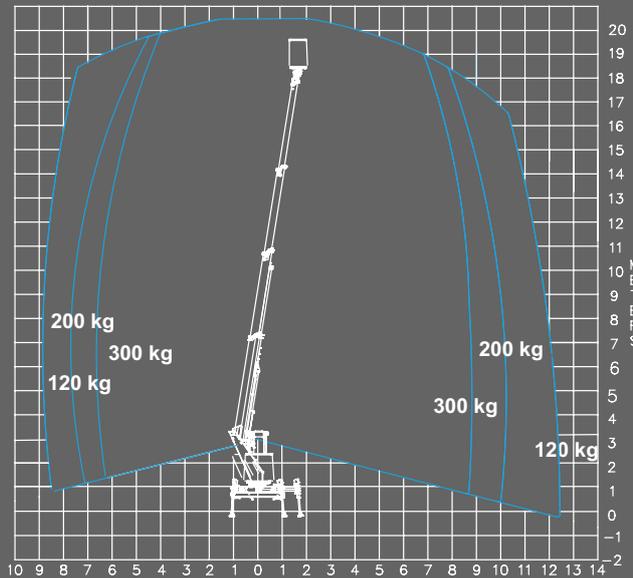

**GREEN PACK
TECHNOLOGY**

Demonstrations upon request

RANGE OF CHASSIS ≤3.5T

KT20

20.60m



20.60m
(67'7")



18.60m
(61'0")



Until 12.50m
(41'0")



420°



Until 300kg



125 x 75 110cm



Rotating basket



Four outriggers



Hour counter

STANDARD SPECIFICATIONS

- Engine start and stop from basket
- Independent emergency manual pump with all the features in the basket for maximum security
- Proportional controls
- Secure access to the working platform
- Hoses and cables are inside the boom structure for maximum protection
- Double stabilisation:
 - Outriggers in the template for a reduced congestion in the streets (working outreach included)
 - Outriggers extended at the front, left side or right side for a full working outreach
- Aluminium boom for optimum stability

STANDARD SPECIFICATIONS

- Signalling devices (triflash, 2 flashing lights, reflective strips)
- 220V electric socket in the basket
- Trailer hook
- Reinforced suspensions
- Fully opening insulated basket
- Aluminium chests in the side panels
- Side ladder rack
- Tool holders in the basket
- Green Pack: the platform can be operated with the van engine turned off.

For more platform options, please contact us before ordering

TYPES OF VEHICLES

- Iveco Daily (wheelbase 3750)
- Mercedes 313 CDI (wheelbase 3665)

For vehicle options please contact us before ordering



CPL - A KLUBB company

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