

ST880X / ST661X Professional Tree Stump Cutter

User and Parts Manual

Revision 6 - October 2019, SN, 100200 -



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ST088X and ST661X Professional Handheld Tree Stump Cutter

A lightweight tree stump cutter, powered by a chainsaw engine.

Firstly, congratulations on your purchase of this fine machine. We truly hope that it serves you well and lives up to your expectations.

Reading and understanding this manual is essential for your own safety, the safety of those around you, and the productive life of the machine.

This machine is for professional use. It is important that users of this machine are competent and have read and fully understood this user manual before attempting to use the machine.

This is an attachment. Although there will be instructions within the manual that refer to the engine, we are not responsible for the engine or the fitting of this attachment to the engine.

This attachment is only to be used on the engine that it is intended for, which is indicated by the model type. Changing the type of engine will result in different cutter wheel speeds, which could cause harm to the machine and/or the operator.

The machine consists of a cutter wheel with teeth mounted onto a stub shaft which is fitted into a hub with roller bearing support.

Off the other end of the stub shaft, within the hub is a pulley wheel.

The hub is attached to a hollow, rectangular shaft which contains a series of stepped, floating, pulleys connected by separate belts. This provides the reduction in gearing from the engine to the cutter wheel.

The belts are tensioned at the engine end of the shaft. The assembly is pretensioned before fitting the engine. Belt adjustment can be undertaken without removing the engine.

Fitting of the engine to the machine must be undertaken correctly. Please pay attention to the fitting instructions. Incorrect fitting could result in damage to the machine and possible injury to the operator.

EC DECLARATION OF CONFORMITY



Issued in compliance with applicable directives

vve, the manutacturer -	The Log House, Kiln Lane, Binfield Heath, RG94EN. UK
Hereby declare that -	Stump Grinder Attachment ST-661X ST-880X
Serial Number -	
Complies with EC directives	2006/42/EC including Annex 1, Annex 2.2 and Annex 3

Parameter	ST-661	ST-880
Weight overall. (Dry)	28.8kg (63.5lb)	31.5 kg (69.5lb)
Weight without leg. (Dry)	24.6kg (54.2lb)	27 kg (59.5lb)
Weight without leg and guard. (Dry)	22.4kg (49.5lb)	25 kg (55lb)
Length (mm)	1657mm (65")	1741mm (68.5")
Engine designed for -	Stihl MS-661	Stihl MS-880
Maximum sound level	See engine manual	See engine manual
Maximum vibration level	See overleaf	See overleaf
Power (kW)	See engine manual	See engine manual

It is essential that the attachment is only fitted to the engine that it is designed for in accordance with the instruction manual. No modifications must be made. The relevant engine manual forms part of the health and safety instructions for the complete machine.

Drawn up on 01/01/2018 by: P. Watts (M/D)

Palto.

Vibration

As required by the supply of machinery regulations, this machine has been designed to reduce the risk from vibration to the lowest level possible with reasonable measures.

Fitting this attachment to the engine does not significantly increase the vibration level stated by the engine manufacture. However, due to so many different factors, including, but not limited to the hardness of the wood and the condition of the teeth and the machine, an incalculable addition to the vibration level will occur during the cutting action.

For this reason we advise that the user takes the following action.

- 1) Keep exposure to a minimum. Low duty cycles with plenty of breaks is essential.
- 2) Keep hands warm. Exercise hands and fingers in the breaks
- 3) Wear heavy duty gloves and boots that offer adequate anti-vibration protection.
- 4) Don't grip the handles too tight.
- 5) Keep the engine RPM below 75% whenever possible.
- 6) Keep the teeth sharp.

Important Note About Engine

The fitting of this attachment may cause extra or different types of stress on your engine. It will depend on how the machine is used and maintained. The user must take this into consideration. We strongly recommend not applying very high RPM for extended periods of time, especially when not under load. Slightly more oil in the fuel mix would probably be a good idea. Allow the engine to cool off regularly. Change or sharpen the teeth regularly.

Chainsaw Attachments will not accept any liability for any engine failures due directly or indirectly to the fitting of this attachment. If you are not happy with these terms, then please contact your supplying dealer before using the machine.

The machine has been tested extensively under normal working conditions by competent operators without any engine problems.

The machine is equipped with a 'Quick Release' leg. It is important that this leg is attached before operating the machine.

The machine is also equipped with a removable guard. The machine must not, at any time, be run without this guard securely in place and perfectly intact.

The guard and leg are removable to make transportation, storage and carrying of the machine easier.

With the removal of the guard and leg, the main part of the machine is under **25kg** and should be within the capable lifting limits of most fit and strong adults.

With the guard and leg fitted, the machine should be manoeuvred on the rubber wheel, which is mounted on the end of the leg. Simply pull the leg handle back towards the engine and push along whilst holding the rear handle of the engine in your right hand.

It is important that the engine is not running whilst moving the machine to the site. Only start the engine once you are at the stump and ready to start cutting. Apply the brake on the engine when moving between stumps.

Although the machine is fitted with a guard, it is important that sufficient guarding is put around the site to prevent flying debris, as it is not possible for the fitted guard to contain all debris.

The operator must wear full PPE, including, but not limited to, chainsaw protective boots, hard hat with visor and ear protection, gloves, and adequate clothing. In dry and dusty conditions the operator should also wear a sufficient dust mask.

The site should be cordoned off, limiting any people or animals from being within 20 metres of the operation.

The operator is totally responsible for any injury or damage caused to third parties.

The machine is designed to cut tree stumps only that are fixed firmly in the ground. Loose objects can be picked up and thrown. The site must be fully assessed first. Any foreign object, large stones, wire, string, cables etc must be removed before attempting to use the machine. The operator must check to make certain that there are no power cables, gas pipes or any other services in the area he intends to cut.

The machine must be in perfect working order, with all guards and fixing screws in place securely. Check at regular intervals.

This machine is designed to operate at the best performance achievable within it's limits. Modifications to this attachment should not be made without consulting Chainsaw Attachments first in writing.

Parts of this machine, especially the engine may become hot. Be careful when handling.

Do not clean the machine with petrol or other flammable liquids.

Do not attempt to fix or maintain the machine when the engine is running.

Keep the machine well away from any open fires, especially when refuelling.

As the title suggests, this is a tree stump CUTTER. It is designed to cut wood. It will tolerate a certain amount of contact with soil and stones. But the teeth will become blunt. It is important to change or sharpen the teeth when they become dull. This machine is not designed to cut wood with blunt teeth. Blunt teeth will cause damage to the attachment and possible the engine, along with extra vibration exposure to the operator. It will also require more fuel to remove the stump. For the above reasons it is not economical or practical to run with blunt teeth.

The machine is designed for cutting out small to medium size stumps. It is important for the well being of the operator and the machine to take regular breaks and not to push yourself or the machine too hard, as one will eventually fail.

Fitting of Engine

This job is easier if you have assistance. If undertaking on your own it's easier if you have a box, stand or log to take the weight of the unit whilst lining the engine up.

BE SURE THAT THERE'S NO OIL IN THE OIL TANK. If you leave oil in the tank it will pump out onto the belts and cause the belts to slip and fail. With some engines its possible to turn the oil off, however, we recommend you also remove oil from the tank.

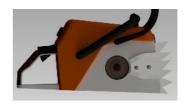
Slipping belts will also damage the pulleys and result in repair costs.

The sprocket on the chainsaw needs to be removed.

- Apply the brake
- With a small screwdriver, remove the Cclip, washer and sprocket.
- Replace the washer with small washer supplied. Replace the C-clip.
- Fit the stump cutter unit as you would a chainsaw bar, locating the pulley onto the drive shaft spline. You can see through the bottom of the mounting vents. Turn the cutter wheel by hand to locate the spline. Do not use the engine adjuster.









- Fit the steel plate and engine nuts and be sure that everything is lined up and located before tightening the assembly. Do not over-tighten.
- The mounting plate should fit flush against the engine body.
- With the ST661, we provide engine nuts. With the ST880 you use the nuts that come with the engine.

The belts are pre-tensioned. Further tensioning. See maintenance.

Fitting of Cutter wheel

Fit the cutter wheel to the hub shaft the correct way round. Screw into the shaft counter clockwise. Using the tool provided, tighten the bolt.

Transportation And Storage

We recommend that you remove the guard and leg before transporting the machine.

Bear in mind that the engine might still be hot and could cause injury or damage.

As with all engines it's possible for fuel to leak out. Be aware of this and keep in a well ventilated area.

Before Operation

Once you've assembled the machine and read the user notes, you're ready to start work.

BE SURE THAT THE OIL TANK IS EMPTY. If you leave oil in the tank it will pump out onto the belts and cause the belts to slip and fail.

Slipping belts will also damage the pulleys and result in a high repair cost.

Running in procedure

The attachment is partly run in on a test rig in the factory, however, we recommend low duty cycles of five to ten minutes for the first few times. This will extend the life of the machine.

Using your machine

Once the machine has been assembled correctly, run in and you've read and are happy with the instructions, you can put the machine to work.

Transport the machine to the stump by rolling along on the rubber wheel or by carrying with the leg and guard removed.

Make sure the guard is in place and secured properly.

With the leg removed and the engine brake on, start the engine.

Lift the engine up with the cutter wheel on the ground.

Insert the quick release spigot of the leg into the pivot point on the shaft by pushing the handle forward towards the guard.

Pull the handle back to the upright position. This is the working position.

Place your left foot on the step. This should always be your front foot. Your right foot should be back, behind the engine.

Position yourself near the front of the stump. Release the engine brake. Then with your right hand apply some engine revs.

Cut down the face of the stump. Cut a vertical slot on the front, right hand side. Then move the cutter wheel to the left and cut another slot to the left of the first slot. Work from right to left until you've cut the front face away.

Move the machine forward an inch or so and repeat the above. Keep repeating the above until the stump has been removed.

The cutting will always be better with higher engine revs. Only apply full throttle when the wheel is under load and engaged in the stump. Until that point ¾ throttle is ple

Your left hand moves the machine forward and slightly downwards.

Your right hand moves the engine up and down, which in turn moves the wheel down and up. Your right hand also controls the throttle.

Your left foot anchors the machine to the ground. Your right foot provides stability.

Use the engine brake to stop the wheel quickly, but only when necessary. Otherwise, se the ground to stop the wheel.

Keep the leg as close to right angles with the main shaft as possible. See pictures for correct and incorrect operating positions.

Correct

The leg is at right angles to the shaft. This angle will change a little whilst in use, but the angle should not change more than plus or minus 10 degrees.





Incorrect

Movement like this will make the machine unstable and risk the leg from coming detached from the shaft.





Servicing

The machine is designed for low maintenance. It will depend on the usage, but a strip down service should be carried out once a year or every two hundred hours, whichever comes first. We strongly recommend that you send the machine back to us or your local service dealer for servicing. Simply remove the engine, guard, leg and cutter wheel and send the main shaft back to us or a local dealer.

The machines warranty could be void if the main shaft of the machine is incorrectly maintained.

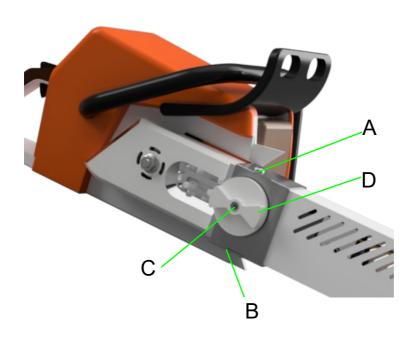
Tightening Belts

The belts are pre-tightened when your machine arrives. Fit the attachment to the engine, go through the running in procedure and start using the machine.

It's not good for the belts or pulleys to run the belts loose. We've made the tightening process as easy as we can and it can be undertaken in under two minutes without removing the engine or loosening the engine mounting bolts.

Simply -

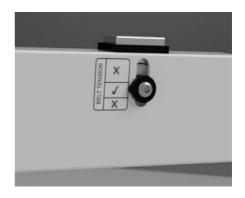
- 1) Loosen slightly the three locking nuts, [A], [B] and [C] with the supplied allen key
- 2) Turn the knob [D] in a clockwise direction until the tension indicator is within the tick box.
- 3) Lock off by tightening bolt [C]. Then tighten bolts [A] and [B]



Tension Indicator

This indicator will move up and down whilst the machine is in use, but it should be within the tick area when at rest.

If the indicator is at the top when at rest, either the belts are tensioned too tight or the pulleys are clogged with debris. Cleaning is required to prevent the belt from breaking.



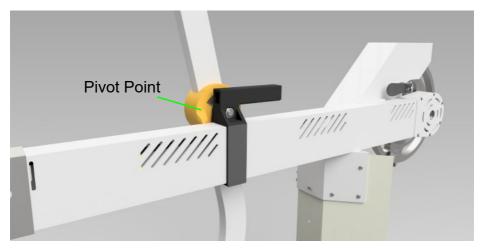
Cleaning

This could be attempted with an airline or water hose. If this doesn't work, then a strip down is required. If debris is mud, it might clear when dry.

Grease Pivot

For your convenience the machine is fitted with a quick removing leg, which makes transportation, carrying and storage a lot easier.

The pivot point should be greased regularly to prevent wear. We suggest that this is greased before each use. Also, if any dust or other contaminates should get into this area, they should be cleaned out. Every now and again it would be a good idea to clean this area out and insert some fresh grease.



To remove the leg, push the handle end forward so it just about touches the guard. Then gently pull the leg away from the machine. The opposite procedure to install the leg. When installing, make sure the spigot is fully located before pulling the leg backwards. Failure to locate it properly could result in a broken handle.

Spline Drive

Apply a small amount of Alumslip or Copperslip to the spine drive every 50 hours or whenever removing the engine.



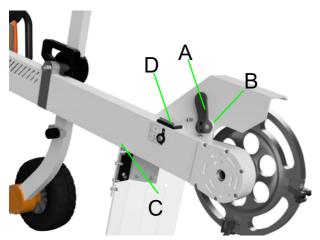
Removable quard

The guard can be removed to assist with transport, storage and carrying. It also makes it convenient for cleaning away debris that may be stuck within it.

We've made this as easy as possible and can be removed in under two minutes.

This guard must be in place and secured properly during operation. Also it must be perfectly in tact along with the skirt.

If the skirt becomes creased during storage, straighten it out before use.



Do not obstruct the free movement of the belt tensioner (D) with the handle (A)

To remove guard

Simply -

- 1) Loosen the cam clamp [A]
- 2) Pull plate [B] away from the guard by a couple of millimetres.
- 3) Push the guard forwards away from the engine and lift off with a bit of a twist to free the locator bolt [C]

The opposite to install the guard. The plate [B] has a spigot that must be located correctly to stop the guard from slipping.

It's our view that if this guard gets damaged, it can be easily replaced. This is better than working with a damaged guard. Also the guard is less likely to be damaged during transport if it is removed.

Maintenance of Cutter Wheel

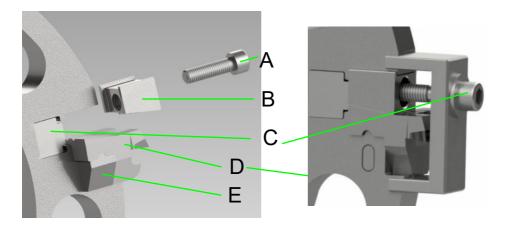
We've made the maintenance of the cutter wheel as easy as possible to encourage users to change the teeth regularly. Sharp teeth greatly increases performance, extends the life of the machine and uses a lot less fuel.

All the components on the wheel can be replaced when worn. Also the wheel can be easily removed with the spanner supplied. (A second wheel could be a handy extra for reducing on site maintenance)

There are two cutting tips on each tooth and changing the teeth can take less than a minute each.

Simply -

- 1) Undo and remove the small bolt, [A]
- Screw the supplied slide extraction tool bolt [C] into the keeper block [B] until the keeper block starts to pull out of the slot in the wheel. Undo the bolt of the extraction tool and remove the keeper block. The tooth can then be removed.
- 3) Making sure the slot is clean from dust and debris, replace the tooth [D] with a new one and re-fit the keeper block, making sure that the ridge on the under side of the keeper block lines up with the groove in the top of the tooth. The keeper block requires a gentle tap with a small hammer to locate into position.
- 4) Finally, align and tighten the bolt through the keeper block and into the threaded insert until the assembly is secure (18 20 Nm) No Grease.



Notes

You will notice that the teeth alternatively overhang to one side and then the other. This must be the case when the new teeth are inserted.

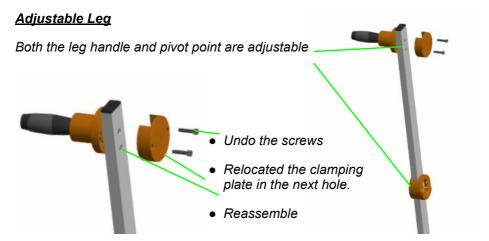
It is possible to get more life from the teeth by swapping left for right, as the outside tips suffer more wear.

The threaded insert [C] and the chip deflector [E] can be replaced easily. The chip deflector is an important part of the wheel and should always be in place and intact.

We would recommend using a cordless angle grinder with a diamond wheel to touch up the teeth on site without removing them from the wheel.

All teeth must be on the wheel and intact.

Only use genuine parts, including the bolts.



Cleaning

You will have noticed that the machine is well ventilated. This is essential to keep the belts and pulleys cool and extend their life. Some dust will find it's way into the machine whether there are vents or not. Our view is that the dust can also find it's way out if not restricted. So we recommend cleaning your machine regularly while making sure none of the vents are blocked.

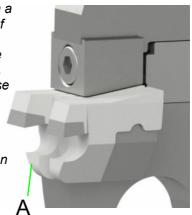
Blowing away dust and debris with an airline is good. It's also perfectly okay to wash down the machine with a hose. No damage will occur if water gets into the machine, though we recommend you leave the machine for a while to dry off, as there could be some belt slippage if wet.

Sharpening of Teeth

The teeth work in a similar way to the chain on a chainsaw. There are two sections [A] in front of the tip that restrict the amount that the tips are allowed to dig into the wood. By grinding these tips down, the teeth will cut more aggressively. However, grinding them down too far can cause the wheel to jump and could cause damage to the machine, such as breaking of belts.

A standard steel grinder wheel will take them down with ease, but only take 1mm off between testing.

A diamond disc is the best tool to sharpen the carbide tips



Maintenance of Shaft and Hub

Other than belt tensioning, we strongly recommend that the maintenance of the shaft and hub is undertaken by a qualified engineer, preferably trained by Chainsaw Attachments. We offer a free service for this which excludes parts and shipping.

Within the 'patent pending' shaft and hub there are a series of belts and stepped pulleys that reduce the high engine speed down to a suitable cutter wheel speed, which also increases torque.

If the pulley wheels are not replaced correctly, it's possible to speed up the cutter wheel, which could be very dangerous. More likely, the engine clutch wouldn't cope and it would result in failure.

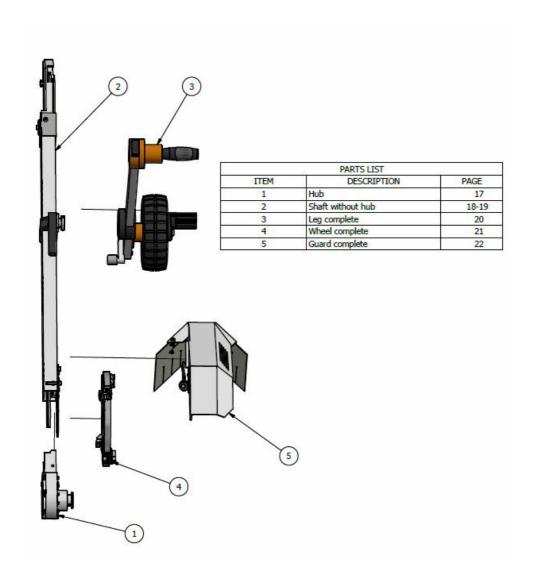
The bearings and belts are standard sizes, but we've selected types that offer particular performance qualities. Changing the brand or spec might result in premature failure.

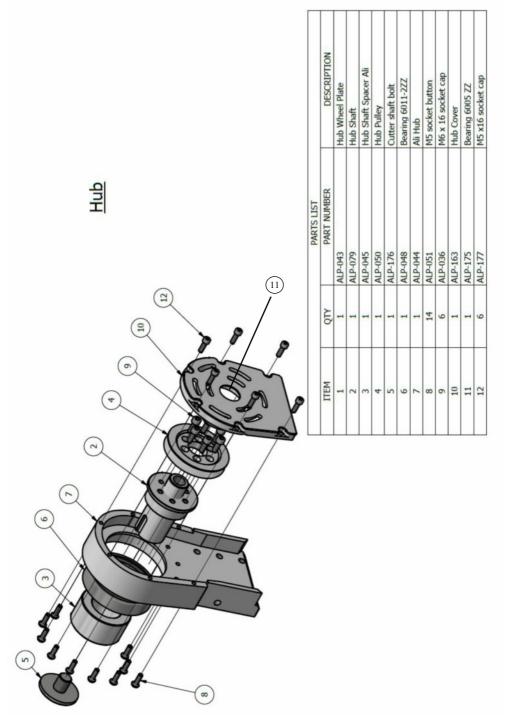
Before attempting to service the shaft and hub, remove the leg, guard, engine and cutter wheel.

- The bearing in the hub plate (Item 11, page 17) needs Alumslip or Copperslip applied when refitting to help with disassembly.
- The engine pulley (Item 14, page 18) will need to be removed before the mounting plate (Item 13, page 18) is taken off.
- The bearing and pulley assemblies within the shaft are now sold as complete units, as it makes no sense in changing one without the other.
- Careful attention should be paid to the sequence of the belts and pulleys when removing the assembly from the shaft.
- Apply Alumslip or Copperslip to engine pulley Item 14, page 18) spline, after cleaning and inspection.
- When re-fitting the cutter wheel, be sure to apply thread lock to the bolt.
- If the shaft is sent back to us for service, we install the refurbished shaft
 onto a test rig and run it for 30 minutes until warm, before re-tightening the
 belts. If the service isn't undertaken in our factory, we suggest very careful
 running in for the first hour or so of use. Then checking of the belt tension
 will need to be undertaken. See page 11

We strongly recommend major servicing at an authorised workshop that has undertaken training and is familiar with this product.

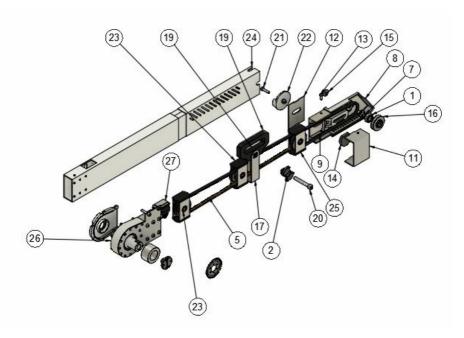
Parts Manual





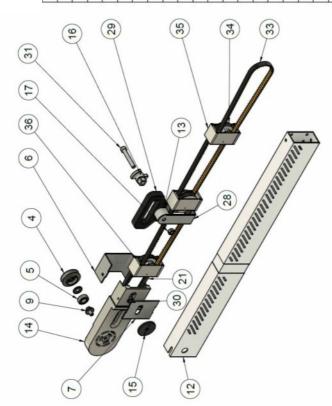
661X Shaft

1 5 ALP-127 2 1 ALP-127 5 2 ALP-127 5 2 ALP-167 7 1 ALP-103 9 1 ALP-110 11 1 ALP-110 11 1 ALP-110 11 1 ALP-103 11 1 ALP-103 11 1 ALP-103 11 1 ALP-203 12 1 ALP-203 13 2 ALP-208 14 1 ALP-203 15 1 ALP-203 16 1 ALP-203 17 1 ALP-203 18 1 ALP-203 19 1 ALP-203 19 1 ALP-203 20 1 ALP-203 21 1 ALP-203 22 1 ALP-203 23 2 ALP-203 24 ALP-203 25 2 2 ALP-203 26 27 ALP-203 27 A	
0 - 0 0 0	Mounting pulley bearing Quick-release spigot 881X toofhed belt Engine pulley bolt 681 mounting plate XFZ780 V belt
- 0 0 0	Quick release spigot 881X toofned belt Engine pulley bolt 881 mounting plate XFZ780 V belt
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	Engine pulleybolt 881 mounting plate XPZ780 V belt
	881 mounting plate XPZ780 V belt
	XPZ780 V belt
- 00	Collar plate 2
0 0	Collar plate
	M8 x 20 button
	mg.
	M12 fange nut
	881 engine pulley
	861 shaft strap
	881 handle block
	Shaft handle
	M12 x 75 socket cap
- 0	M8 x 30 socket cap
2	Belt fightener
,	Toothed pulley assembly
	861 shaft
25 1 ALP-274	Toothed V pulley assembly
28 1 Hub	Hub Complete
27 1 ALP-295	Belt Tensioner Assembly



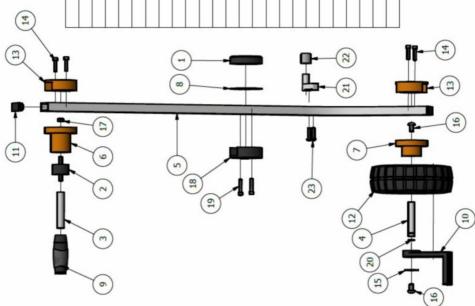
Item	Oth	Part Number	Description
4	-	ALP-226	Engine pulley 880
5	-	ALP-127	Mounting pulley bearing
9	-	ALP-197	880 collar plate 2
7	-	ALP-110	Collar plate
8	-	ALP-189	Mounting washer
6	1	ALP-165	Engine pulley bolt
12	-	ALP-210	880 shaft
13	-	ALP-214	Handle block 880
14	-	ALP-049	880 mounting plate
15	-	ALP-169	Belt tightener
16	-	ALP-107	Quick release spigot
17	-	ALP-059	M12 nut
21	-	ALP-227	V belt
28	1	ALP-198	880 shaft strap
29	1	ALP-203	Shaft handle
30	-	ALP-112	Cam
31	-	ALP-200	M12 x 75 socket cap
33	-	ALP-257	661 toothed belt
34	2	ALP-257	661X toothed belt
35	2	ALP-282	880X pulley assembly
36	-	ALP-280	880XV pulley assembly

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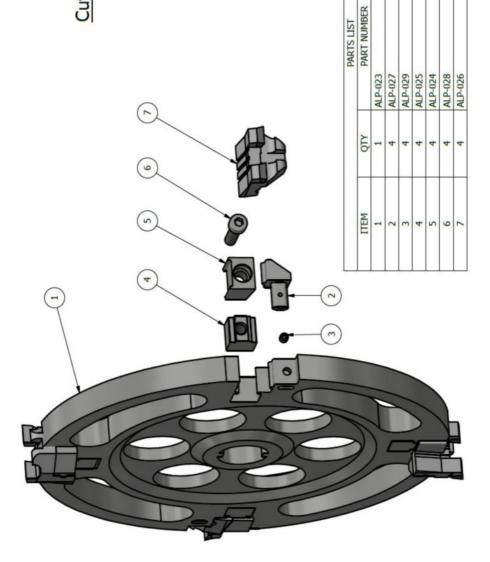


Leg Complete

		PARTS LIST	
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	ALP-032	Quick Release Plate
2	1	ALP-063	Anti Vibration Mount
3	1	ALP-064	Handle shaft
4	1	ALP-080	Leg wheel Shaft
5	1	ALP-018	Leg
9	1	ALP-062	Anti Vibration Hub
7	1	ALP-066	Plastic Wheel Hub
8	1	ALP-180	Quick release pad
6	1	ALP-065	Rubber Grip
10	1	ALP-020	Step
11	2	ALP-070	Tube Cap
12	1	ALP-017	Solid rubber wheel
13	2	ALP-061	Universal Clamp
14	4	ALP-012	M8 x 35 socket cap
15	1	ALP-090	Wheel shaft washer
16	2	ALP-128	M12 x 1.75 x 20 socket button
17	1	ALP-187	M0 Nyloc nut
18	1	ALP-179	Universal Clamp Black
19	2	ALP-131	M8 x 40 socket cap
20	1	ALP-191	O-ring
21	1	ALP-193	Stopper arm
22	1	ALP-194	Rubber stopper v1
23	2	AI P-192	M8 v 35 button



Cutter Wheel



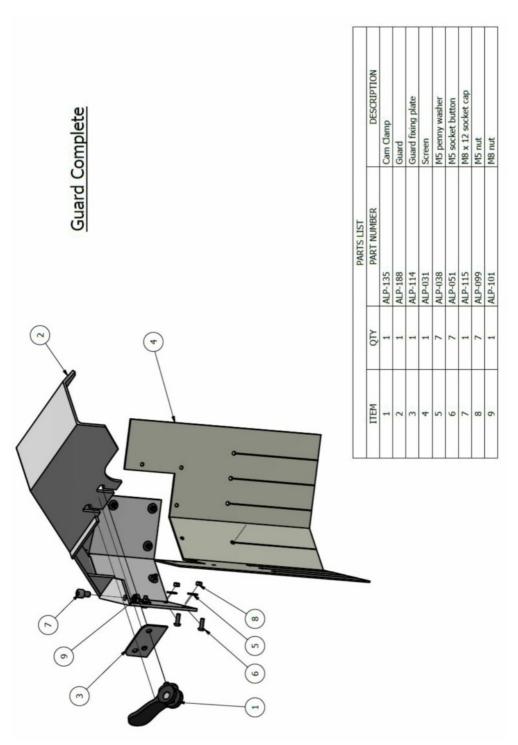
DESCRIPTION

Cutter Wheel Deflector M6 x 6 grub screw Threaded Insert

Cutter Wheel

Standard Tooth

Keeper Block M8 x 30 fine



Warranty

We provide a 3 month parts and labour warranty which covers defected parts, design issues and poor workmanship. Hopefully there will be none of this with your machine. However, if you experience a problem and we deem it to fall into the above, we will repair or replace the parts in question at our cost.

The machine must be brought or sent to us or one of our service agents, unless otherwise agreed.

We will endeavour to send the machine back to you as soon as possible.

We might choose to send out a service/repair machine as a replacement. If this is the case, it will be fully serviced and in better condition than the machine being replaced.

We will not accept or be in any way responsible for loss of work or income resulting from a failed machine.

In most cases the machine will be inspected before any warranty work is agreed.

This is an attachment. We do not provide any warranty for the engine you decide to put it on. The engine supplier may decide not to warranty the engine if this attachment is fitted.

<u>ALL MACHINES MUST BE REGISTERED WITHIN 14 DAYS OF</u> <u>PURCHASE</u>

Failure to register your machine within 14 days of purchase will result in any warranty being void.

Registering your machine indicates to us that you have read the manual before operation.

The information you give us will not be used for any marketing purposes and will not be passed on to any third parties.

If you are not happy with our terms, please take it up with us or your supplying dealer before putting the machine into use.

We really want you to enjoy using your machine and we hope that it gives you good service. We are here to help you with any questions or issues.

Registration Form

Please complete this form and send back to us within 14 days of purchase.

Name
Company
House
Street
County
Country
Postcode
Telephone number
Date of purchase
Place of purchase
Serial Number

Chainsaw Attachments Ltd The Log House, Kiln Lane Binfield Heath. Oxon. UK RG94EN

0044 (0) 118 9401739