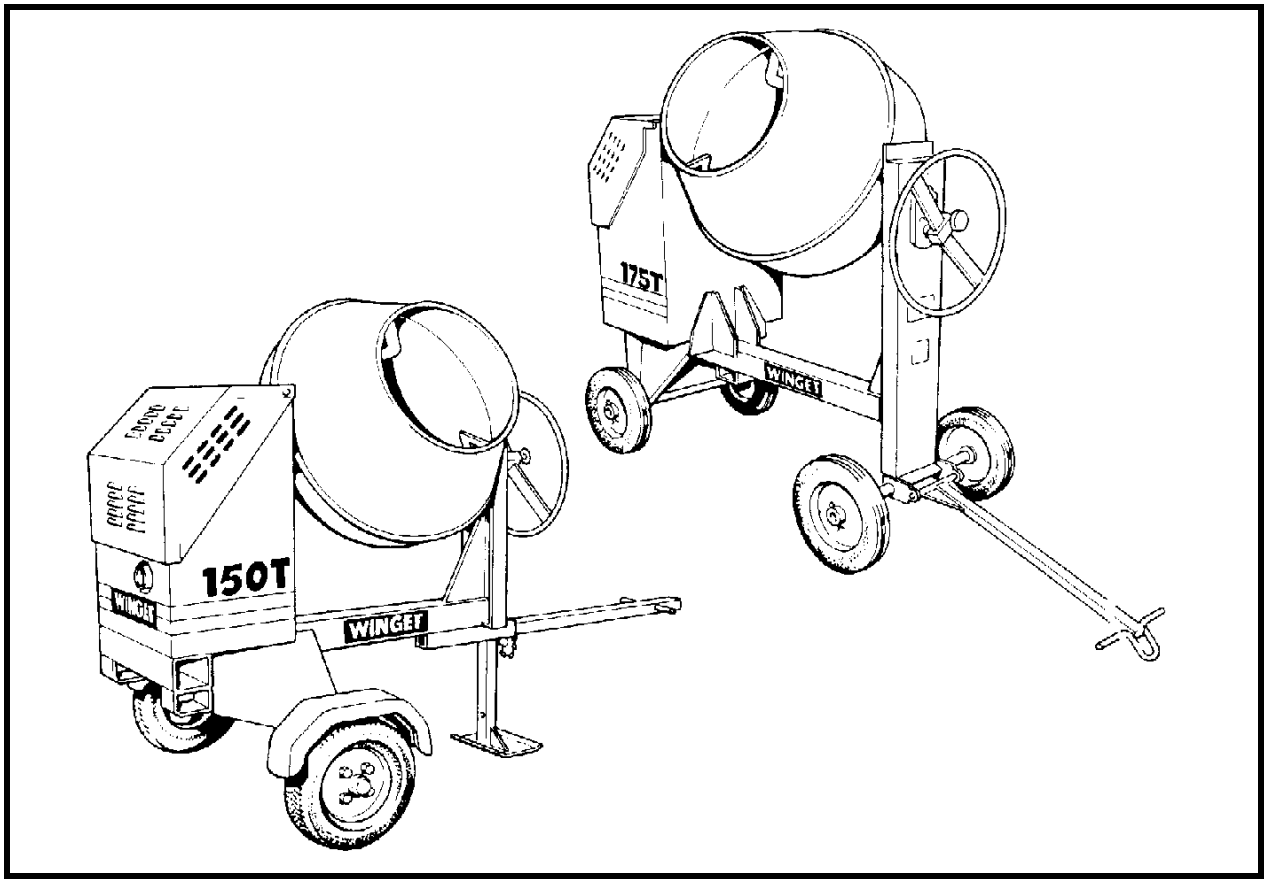
WINGET

WORKSHOP MANUAL
100T, 150T & 175T
HANDFED MIXERS



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ISSUE 05 2022
FROM 2015 ONWARDS

WORKSHOP MANUAL
100T / 150T / 175T
Winget Concrete Mixers
From 2015 Onwards
Issue 05 2022

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WORKSHOP MANUAL

100T, 150T & 175T

SECTION 1
INTRODUCTION

WORKSHOP MANUAL
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Introduction

It is assumed that personnel involved in either the assembly or repair of Winget Mixers will be familiar with the product, either through the operation of, or previous repair and maintenance work. It is not intended to be used by personnel who are neither familiar with the product nor mechanically inexperienced.

It is also assumed that personnel are aware of Health and Safety Regulations, which should be applied to all working practices but the following should act as a reminder.

Ensure all work tools are in good condition.

Always wear Safety Spectacles when using soft or hard faced hammers, chisels or when using air tools. Wear Safety Spectacles when cleaning hardened concrete or mortar deposits off components. Do not misuse airlines and be aware of the damage compressed air can cause if misused.

Always make sure lifting equipment is in good condition and the marked Safe Working Loads exceed the weights of the components to be lifted.

Oils, fuels, silicone sealers and open gear lubricants can cause skin diseases if allowed to contaminate the skin. Always apply barrier creams, wear suitable protective clothing, or when contamination is unavoidable clean the area with soap and water as soon as possible. Do not use thinners or other solvents to clean skin.

Health and Safety is a matter of common sense. If common sense is applied correctly Health and Safety can be improved and the risk of accidents reduced.

L/H and R/H views are taken when standing directly behind and facing the engine housing.

Refer to the Parts Books for a guide to the correct sequence for assembling components and sub-assemblies.

Whilst every effort is made to ensure the contents of this manual are accurate, Winget Limited reserve the right to altar specification without prior notification and certain sections may then no longer apply.

WORKSHOP MANUAL

100T, 150T & 175T

SECTION 2

REPAIR & SERVICE PROCEDURES

WORKSHOP MANUAL
100T / 150T / 175T
Winget Concrete
Mixers
From 2015 Onwards
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Repair & Maintenance Procedures

The following procedures are based in part on the procedures issued to Distributors and the instructions should be used in conjunction with the appropriate Parts and Operators Manual or CD ROM. Reference should also be made to the Parts Listings in Section 9 for a guide to the correct sequence for assembling components and sub assemblies.

1) Clean any paint or debris from bores and shaft surfaces. Threaded holes should preferably be cleaned out using the correct tap

2) All sealed for life bearings should be packed with a good quality grease prior to installation. Carefully remove a seal, pack the bearing with grease and refit the seal ensuring it is correctly seated.

3) Apart from installing the electric motor, mounting brackets and conduit as described in this manual under the heading ‘110 volt single phase Electric Motor.’ All wiring and other work concerned with the installation of 110 volt components and supply should be left to a suitably qualified electrician, who is conversant with single phase electrical circuits.

Lifting Points

A lifting point capable of supporting the weight of the mixer is incorporated into the trunnion.

This lifting point is highlighted with an ISO 'Hook' symbol adjacent to the point.

On Military/NATO mixers the lifting point will also be painted white.

Draw Bar Replacement-Four Wheel Tow

The drawbar is secured to the front axle using split pins and flat washers. Remove the split pins and flat washers slide the old drawbar out of the lugs on the front axle. Replacement is a reversal of the above procedures ensuring that the eye on the drawbar points downwards.

Wheel Replacement-Four Wheel Tow

Solid rubber cushion and steel wheels are secured using split pins and flat washers and the removal procedure is identical. Lift and support the axles. Remove the split pins and washers. Clean the axle shafts and coat with copperslip. Fit the new wheel replace the flat washer and secure using a new split pin.

Wheel Replacement-Two Wheel Tow

On two wheel tow mixers the pneumatic tyre/wheel assembly is secured to the hub/suspension unit by four nuts. To change a wheel, chock the wheel on the opposite side, slacken but do not remove the wheel nuts securing the wheel to be changed. Place a suitable jack below the suspension unit and jack up the mixer until the tyre is just clear off the ground, remove the nuts and wheel assembly. Reverse the procedure to refit and fully tighten the wheel nuts when the jack is removed.

It is recommended that the wheel nuts be rechecked following a short "road test"

Hub/Suspension Unit Replacement-Two Wheel Tow Mixers

The suspension units require no maintenance being a sealed unit having an internal construction of rubber and ends sealed with nylon bushes. Suspension units should not be subjected to heat such as welding or oxy-acetylene cutting as this will damage the rubber and nylon components.

The suspension units are secured to the mainframe using six/eight bolts and nuts to remove, slacken the wheel nuts, jack up and support the mainframe on suitable supports. Do not attempt to work under the mainframe if it is

supported only on a jack. Remove the wheel nuts and wheel assembly. Unbolt and remove the mudguard and supporting bracket. Remove the remaining bolts securing the suspension unit and detach the unit from the mainframe.

Note: it is recommended that suspension units be replaced in pairs.

Reverse the procedure to refit.

Wheel Hubs & Bearings-Two Wheel Tow

A single castle nut and flat washer retains the hubs to the stub axles of the suspension units. The castle nut is also secured with a split pin; this is accessible after removing the steel/plastic dust cap.

The bearings are automotive type taper roller bearings requiring a small amount of end float.

To remove the hubs remove the wheels as described above, prise off the dust caps. Remove the split pin, nut and washer and pull off the hub. Do not allow the taper roller or ball bearings to drop to the floor where they will become contaminated with dust etc. The later type inner taper roller bearing and seal unit will normally be left on the stub axle when the hub is withdrawn, this can be carefully tapped off using a suitable drift taking care not to damage the bearing cage.

Clean all traces of old grease out of the hubs and off the stub axles, using a suitable drift knock out the old bearings, pack the new bearings with grease and tap home into the hub.

To adjust the taper roller bearings, tighten the nut then back off 1/4-1/2 a turn, check that the hub spins freely without to much end float, .004” is sufficient. Align the castle nut with the split pinhole in the stub axle and fit the retaining split pin. Recheck the hub rotates freely and refit the dust cap. Charge the hub with grease until the grease is visible in the breather hole in the cap.

It is recommended that the wheel bearing adjustment be rechecked after giving the mixer a short “road test”.

Front Axle Replacement- Four Wheel Tow

The front axle is designed to rotate through 360°, it does not oscillate and the front axle swivel pin locates directly into the front leg of the mainframe where it is secured via a spiral pin.

Jack up and support the mainframe and knock out the spiral pin. Remove the axle. Replacement is a reversal of the procedure however the pivot pin and

axle shafts should be coated with copperslip. The axle should be rotated through 360° degrees making sure the spiral pin does not foul the mainframe.

Drum Removal

Attach suitable lifting equipment through the drum blades. Knock back the tabs on the lock-washer securing the drum shaft setscrews. Remove the setscrews and the washers securing the shaft and flange. With the drum mouth upright lift the drum assembly clear of the trunnion. It may be necessary to rock the trunnion via the tiltwheel to free the shaft, especially if the mixer has been in service for some time.

In exceptional circumstances it may be necessary to use a commercially available two-leg puller/pusher tool to assist in pushing the drum shaft through the trunnion. When using such tools please ensure the manufacturers or supplier's instructions are adhered to.

Drum Re-Fitting

Clean and lubricate both the drum shaft and trunnion base plates with copperslip. Coat the bevel pinion and bevel gear with open gear lubricant. Attach suitable lifting equipment through the drum blades; lift the drum assembly and position over the trunnion.

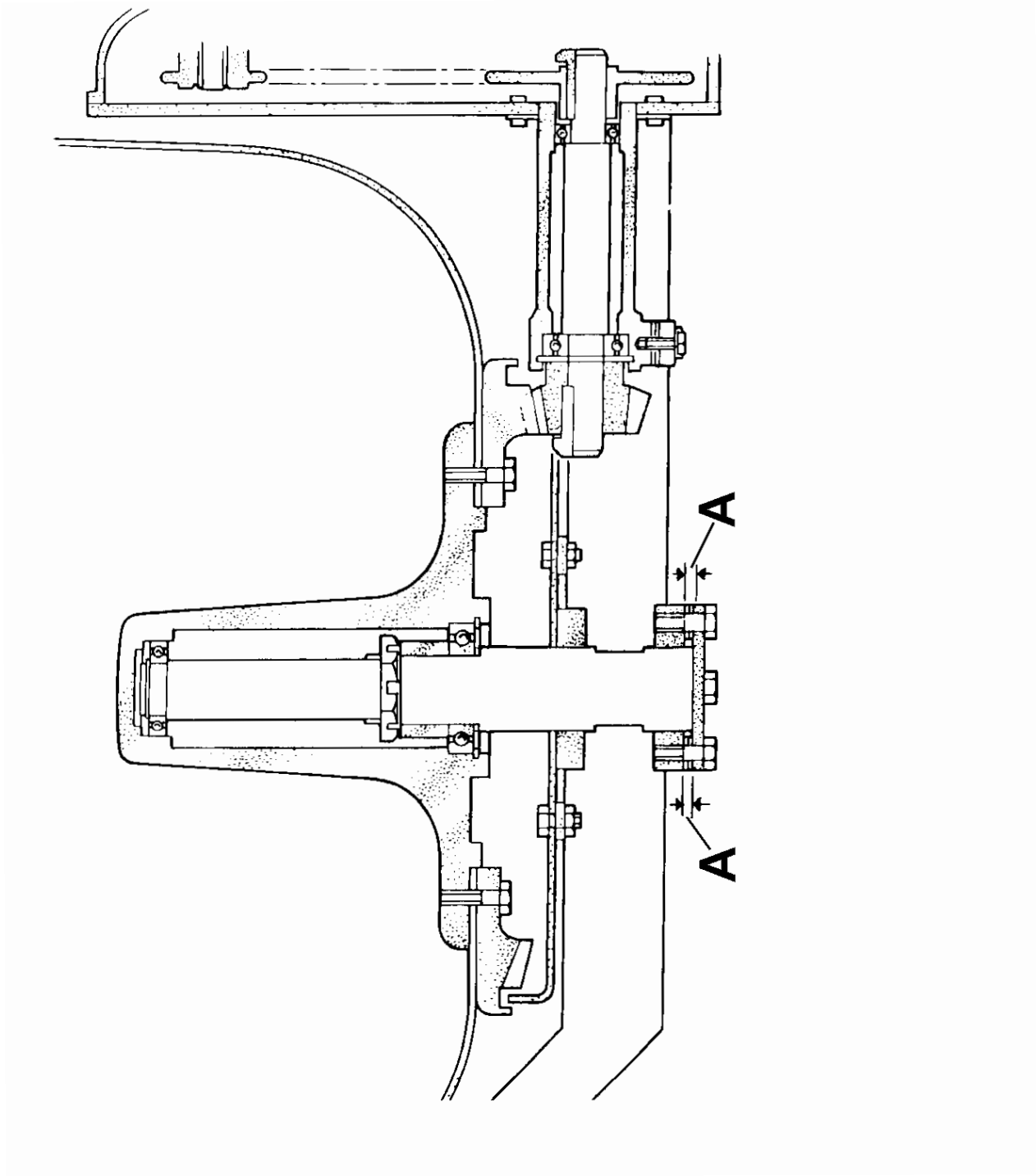
Turn the drum shaft so the threaded holes in the shaft are at 90° to the holes in the lower base plate. Lower the drum and shaft assembly into place making sure that the bevel gear and pinion are fully in mesh and the drum shaft is fully through the base plates.

Slip the lockwasher over the two drum shaft setscrews and coat the threads with copperslip, using the setscrews secure the flange to the shaft. The flange can be used to turn the shaft until the remaining holes in the flange align with the remaining holes in the lower base plate.

Check the number of flat washers required to pack the gap between the flange and lower base plate. (See "A" on the following illustration).

Deduct one washer from each side. Coat the threads on the setscrews with copperslip and fit the setscrews with spring washers attached through the flange and flat washers and tighten into the base Plate. This will lift the drum shaft slightly back through the trunnion increasing the distance between the teeth of the bevel pinion and bevel gear. Gently rock the drum assembly back and forth and check the backlash between the gears. (Approx 3-5mm measured at drum clip). Ensure the setscrews are tight and knock over the tabs on the lockwasher.

100T 150T 175T DRUM DRIVE LAYOUT



Check the drum drive gears rotate smoothly when running the engine.

Drum Cone Replacement

Wearing suitable eye protection clean any hardened concrete or mortar deposits from around the drum clip and the bolts securing the drum blades. Remove the bolts securing the blades to the drum cone and slacken the bolts through the base. Cut through the drum clip and remove. Lift off the drum cone. If using oxy-acetylene cutting gear take care as concrete “explodes” violently spitting small pieces of concrete when hot, always wear eye protection.

If necessary clean out the drum base. Clean old silicone sealer and hardened concrete from the drum flange otherwise it will be difficult to effect a good seal when the new cone is fitted.

Run a generous bead of silicone sealer around the flange and inside the new drum clip. Leave the last 150mm of each end of the clip free from sealer.

Using suitable lifting equipment lift the new drum cone in place lining up the holes in the cone with those in the blades. Loosely refit in the bolts, nuts and washers. Fit the new drum clip around the circumference of the two halves of the drum tapping in place over the flanges using a soft faced hammer.

Attach the special drum clip tool; available under part number 513204000 from your local Winget distributor, placing the pins of the tool into the holes in each end of the clip. (Refer to the illustration)

Using a suitable spanner tighten the drum clip to the drum until it is secure. Do not overtighten the clip or the pins in each end of the tool will shear off. Slip the

bridge piece over the remaining gap in the drum clip and weld in place. Remove the tool and fully tighten the drum blades.

Run the mixer, tilting the drum via the tiltwheel making sure that the drum, clip or bridge piece, do not foul the mainframe or guards. Check the watertight integrity of the drum by emptying a bucket of water into the drum whilst the drum is tilted and the engine is running and observe if water leaks around the clip are evident. If leaks are evident run a bead of silicone around the interior joint between the two halves of the drum.

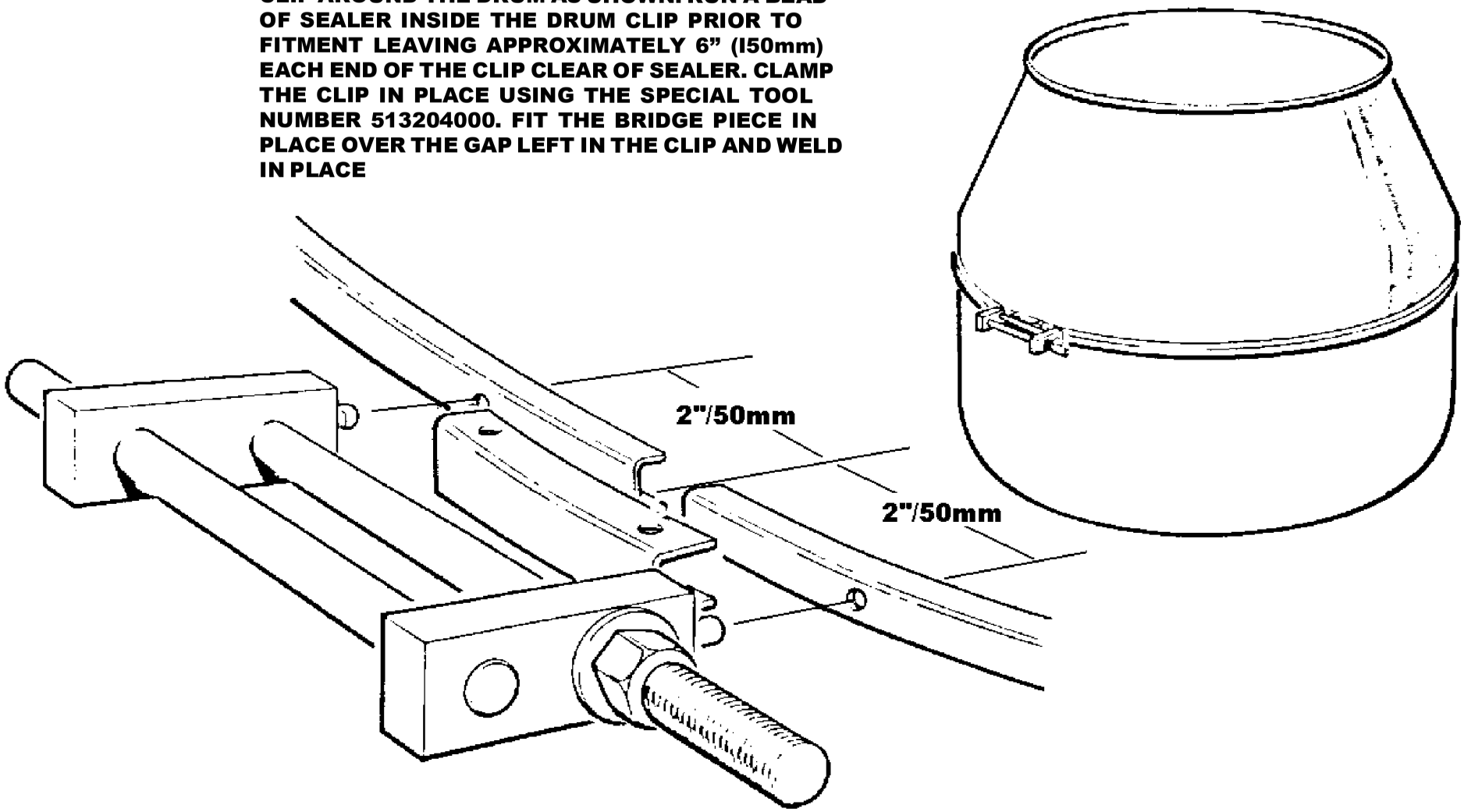
Stop the engine; clean any excess silicone off the drum or clip.

Drum Blade Replacement

It is unlikely that drum blades will require replacement separately to the drum cone. However in the event that it should prove necessary, wearing suitable

100T 150T 175T DRUM CLIP FIXING

AFTER COATING THE MATING FACES OF THE DRUM BASE AND CONE WITH SILICONE SEALER FIT THE CLIP AROUND THE DRUM AS SHOWN. RUN A BEAD OF SEALER INSIDE THE DRUM CLIP PRIOR TO FITMENT LEAVING APPROXIMATELY 6" (I50mm) EACH END OF THE CLIP CLEAR OF SEALER. CLAMP THE CLIP IN PLACE USING THE SPECIAL TOOL NUMBER 513204000. FIT THE BRIDGE PIECE IN PLACE OVER THE GAP LEFT IN THE CLIP AND WELD IN PLACE



eye protection clean any hardened concrete or mortar deposits from around the bolts securing the blades. Remove the bolts and blades. Due to the corrosive action of concrete and mortar it may be necessary to cut through the old bolts using oxy-acetylene equipment. Be aware that hot concrete can "explode" violently spitting concrete - wear suitable eye protection and protective clothing.

Attach the new blades into the drum assembly finger tighten the bolts until all the bolts are in place. Tighten the bolts.

The bolts should go into the drum from the outside and only round headed bolts, either slotted or hexagon key should be used.

Bevel Gear Guard Replacement

Remove the drum assembly as previously described. Remove the four setscrews, nuts, etc. holding the guard in place. Fit the new guard tighten the setscrews. Replace the drum assembly as previously described.

Bevel Gear Replacement

Remove the drum assembly as previously described. Turn the drum so that it stands on the drum mouth, support the centre housing on the inside of the drum or attach lifting equipment to the drum shaft so that the centre housing cannot fall inside the drum when the bevel gear is removed.

Release the lockwashers and remove the setscrews securing the bevel gear, prise off the bevel gear and clean down the surface of the drum ready to accept a

replacement. Fit the new bevel gear, slip new lockwashers on to the setscrews, coat the threads with copperslip and enter through the bevel gear into the centre housing.

Turn the tang on the lockwashers so that the tang can be turned down the inside of the bevel gear. Tighten the setscrews and bend the rounded edge of the lockwashers over the flats on the head of the setscrews. Coat the bevel gear with open gear lubricant. Refit the drum assembly as previously described.

Drum Shaft, Bearings and Drum Centre

Remove the drum assembly as described previously. Lay the drum assembly on its side and release the lockwashers. Support the centre housing and remove the setscrews, which pass through the bevel gear and prise off the bevel gear. Carefully lower the centre housing into the drum. Lift the Housing out of the drum and clean down the mating surfaces in the drum removing all traces of the old gasket and sealer.

Clean the centre housing prior to any further dismantling. Remove the large circlip from the groove within the centre housing and using a suitable tool pull the drum shaft assembly out of the housing. If a suitable tool is not available secure the drum shaft in a soft jawed vice and using a soft faced hammer knock the housing off the shaft taking care not to damage the housing. Clean any debris out of the housing and inspect for damage.

Secure the drum shaft upright in a soft jawed vice remove the upper circlip and bearing. Release the lockwasher and remove the nut, lockwasher and distance piece. Remove the lower bearing.

Before fitting new bearings carefully remove the seals from the bearings and pack the bearings with good quality grease, refit the seals, do not completely fill the bearings with grease leave some room for expansion as the grease warms up in service.

Re-assemble the shaft in reverse order making sure the lockwasher is correctly fitted and locked onto the nut.

Smear the circumference of the bearings with copperslip and using a soft faced hammer knock the shaft assembly fully home into the housing. Refit the circlip into the groove within the housing.

Place a new gasket over the housing, locate the housing assembly into the drum and temporarily support in place.

Refit the bevel gear as previously described. Remove the supports from below the centre housing inside the drum. Refit the drum assembly as previously described.

Tilting Wheel and Locking Plunger

The tilting wheel is secured to the tilting pinion via a spiral pin and an additional M10 grubscrew. With the drum in the vertical position knock out the spiral pin, slacken the grubscrew and remove the tilting wheel.

The locking plunger is held in place in the tilting wheel by a second smaller spiral pin. Knock out this pin and remove the locking plunger and spring.

Re-assemble in the reverse order coating the locking plunger and pinion shaft with copperslip. Soak the felt seals on the pinion shaft in oil.

Tilting Bracket

With the drum in the vertical position, place temporary supports between the mainframe and trunnion to support the trunnion when the tilting bracket is removed.

Remove the upper tiling gear guard. Remove the four socket headed capscrews securing the tilting bracket taking care not to drop the retaining brackets on the inside of the mainframe front leg. Pull off the tilting bracket assembly. Check the felt seal in the face of the tilting gear replace and/or lubricate as required.

Knock out the spiral pin securing the tilting wheel to the tilting pinion and slacken off the M10 grubscrew. Lift off the tilting wheel and slide the pinion out of the bracket. Check the condition of the bushes and felt seals. Replace and/or lubricate as required. The stub shaft is also secured into the tilting bracket via a spiral pin and can be removed simply by knocking out the pin.

Reassemble the tilting bracket in reverse order lubricating bushes and felt seals with engine oil. Coat shafts, pinions and plungers with copperslip.

When refitting the tilting bracket assembly to the mixer, engage and lock the plunger into the middle of the three bushed blind holes.

Locate the stub shaft into the tilting gear and ensuring that the tilting pinion correctly meshes with the tilting gear push the assembly fully home.

Coat the threads on the four capscrews with thread lock, insert through the tilting bracket, mainframe and into the retaining bars which should be held in position until the capscrews are engaged. Tighten the capscrews. Check that the drum clip is sat horizontally, if not the pinion and tilting gear may be a tooth out. Refit the upper tilting gear guard. Remove the temporary supports.

Tilting Gear and Lower Guard

Remove the tilting bracket as described previously. Undo and remove the four setscrews securing the guard to the mainframe. Undo and remove the four nyloc nuts and flat washers holding the tilting gear. Push the bolts back through the gear, slide the gear forward and lift clear of the mainframe. Lift off the lower guard.

Reassemble in reverse order not forgetting to put the guard behind the gear. Lubricate the felt seal.

Refit the tilting bracket as previously described.

Countershaft/Bevel Pinion Drive Chain.

Remove the chain guard from the rear of the trunnion. Crank the engine over until the chain split link is visible. Disconnect the link. Hook the new chain loosely onto the split link and slowly crank the engine pulling the new chain in place round the countershaft chain wheel. Remove the old chain and link. Loop the new chain round the chain wheel on the bevel pinion shaft and fit the

new split link. The open end of the split end should point away from the normal direction of rotation, which is anti-clockwise when looking directly at the chain. Check and adjust the chain tension. (See bevel pinion shaft and housing). Refit the chain guard.

Bevel Pinion Shaft and Housing

Follow the procedures described earlier and remove the drum, bevel gear guard and disconnect the countershaft bevel pinion drive chain.

Rotate the trunnion until it reaches its highest point and lock in place. Remove the gib head key securing the chain wheel to the bevel pinion shaft. Remove the bevel pinion guard, release the lockwashers and remove the setscrews, packers and shims securing the bevel pinion housing. At this point the housing should either be supported by a second pair of hands, strapped or supported in some other manner to prevent it dropping down sharply and causing damage to the casting, it will otherwise only be secured by the loose fitting retaining plate and chain wheel.

Remove the nuts and washer from the two bolts retaining the bevel pinion housing adjusting plate. Using a soft faced hammer knock the bevel pinion shaft through the chain wheel until it is possible to remove the chain wheel. Remove the bolts through the retaining plate and lift the housing out of the trunnion.

Clamp the housing in a soft jawed vice and remove the gib head key retaining the bevel pinion and pull off the pinion.

Remove the circlip from the groove within the housing and using a soft faced hammer knock the shaft and bearings out of the housing. The bearings can now be removed from the shaft.

Before fitting new bearings carefully remove the seals from the bearings and pack the bearings with good quality grease, refit the seals, do not completely fill the bearings with grease leave some room for expansion as the grease warms up in service.

To reassemble secure the bevel pinion shaft into a soft jawed vice. Using the correct size of bearing tube and a soft faced hammer fit the bearings to the shaft. Note the larger of the two bearings is fitted to the longer shank of the shaft. Remove the shaft from the vice and using the vice support the bevel pinion housing. Using the correct size of bearing tube and the soft faced hammer knock the shaft fully into the housing. Fit the retaining circlip into the groove within the housing and check the shaft turns freely.

Assemble the bevel pinion to the shaft, fitting the gib head key. The pinion is fitted to the longer shank of the shaft. If correctly assembled the threaded

holes in the casting will be at the same end. Do not at this stage fit the chain wheel to the opposite end of the bevel pinion assembly, as this will prevent reassembly of the housing into the trunnion.

Loosely fit the triangular adjusting plate back into the trunnion, locating the plate on the peg. Fit the two bolts through the adjusting plate from the rear of the trunnion so that when assembled the head of the bolts will be sandwiched between the trunnion rear plate and the chain wheel.

Work the bevel pinion housing back into the trunnion and through the adjusting plate. As the shaft protrudes through the rear of the trunnion slide on the chain wheel until it is fully home.

Refit the setscrews, lockwashers, packer and shim set retaining the bevel pinion housing and finger tighten only.

Fit the gib head key retaining the chainwheel and refit the drive chain, when connecting the split link the open end of the link should be fitted so that it points away from the normal direction of rotation which is anti-clockwise when looking directly at the chain.

Release the trunnion and turn back to its lowest position. The adjusting plate holding the rear of the bevel pinion housing is slotted to allow the housing to move up and down enabling correct adjustment of the chain tension. Check and adjust the chain and tighten the two bolts securing the adjusting plate. By adding or subtracting shims between the thick packer and housing ensure the housing is horizontal in the trunnion and square to the rear plate. Re-check the chain tension and fully tighten the bolts and setscrews securing the housing, knock over the lockwashers.
Crank the engine ensuring both the countershaft and bevel pinion turn freely. Coat the bevel pinion with grease or open gear lubricant and fit the pinion guard. Fit the rear chain guard folding the tab over the trunnion.

Following the procedures described earlier refit the bevel gear guard and drum assembly.

Countershaft, Trunnion Journal, Bearing Housing & Driven “V” Belt Pulley

Although it is recommended that the trunnion be removed completely from the mixer should the countershaft, trunnion journal or bearing housing require attention it is possible to leave the trunnion assembly in place provided it is properly supported.

Remove the drum as described previously. Remove the engine housing lid (top plate on 175T), engine housing chain guard and trunnion chain guard. Disconnect the “V” belt and bevel pinion drive chain.

Remove the six setscrews securing the trunnion bracket to the engine housing, remove the four countersunk socket headed screws and lift off the trunnion journal assembly.

Support the assembly in a soft jawed vice, remove the gib head key retaining the countershaft chain wheel and remove the chain wheel. Lift off the trunnion bracket; carefully remove the trunnion bearing and strip out the “O” rings and nylatron strip.

Using a soft faced hammer knock the countershaft out of the trunnion journal. Remove the bearing and circlip from within the journal housing.

Secure the countershaft in a soft faced vice, remove the grubscrew and unscrew the chain wheel, remove the bearing. Note: The countershaft and chain wheel both have a LH thread.

Re-assembly

Fit the circlip into the groove within the trunnion journal and lubricate the outer circumference/bearing face with copperslip.

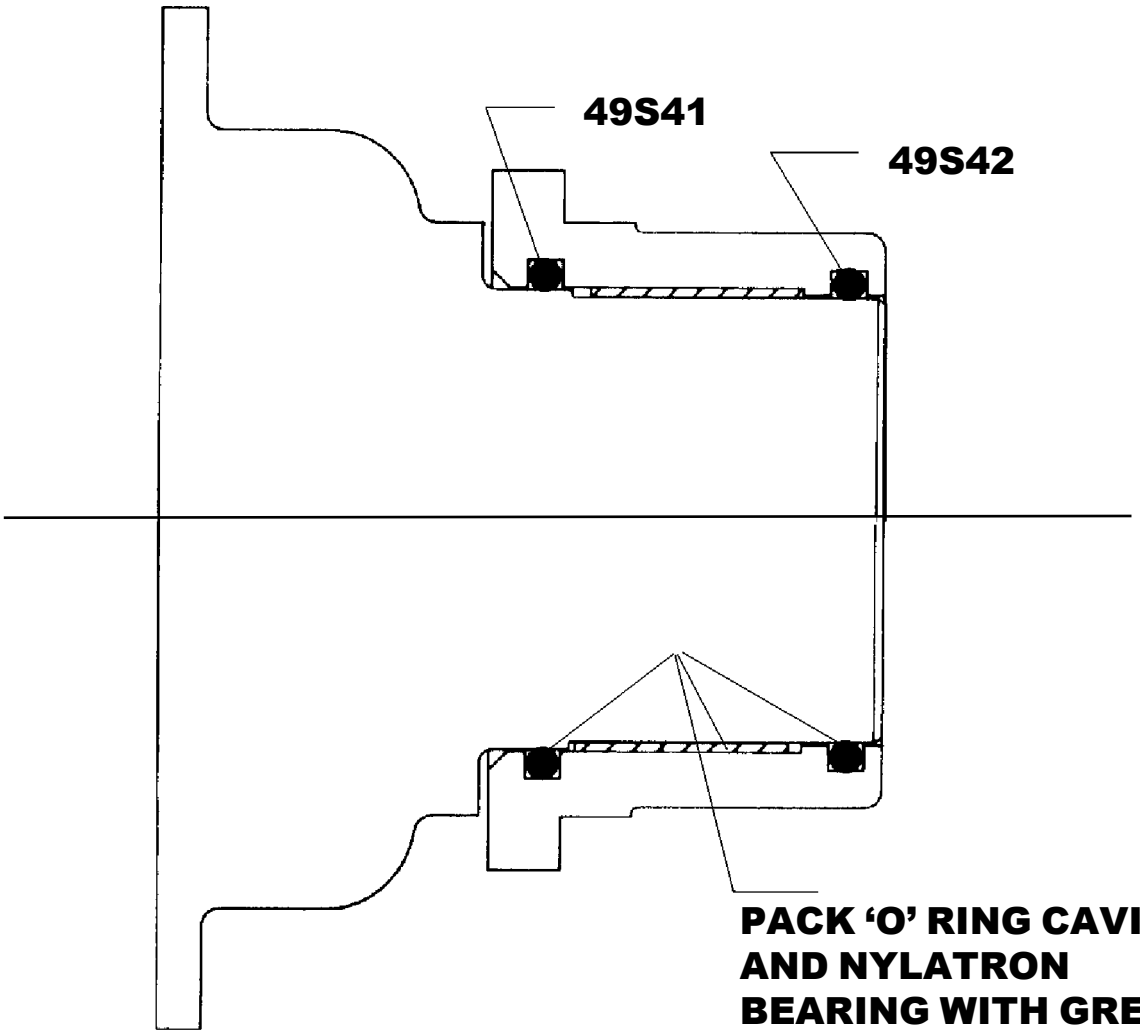
Insert the nylatron bearing strip into the trunnion bearing, fit the “O” rings into their respective grooves within the bearing housing and pack the “O” ring grooves and nylatron bearing with grease. (Refer to the illustration to identify the “O” rings and their location)

Carefully fit the trunnion bearing over the trunnion journal taking care not to dislodge the “O” rings or damage the trunnion bearing.
Before fitting new bearings carefully remove the seals from the bearings and pack the bearings with good quality grease, refit the seals, do not completely fill the bearings with grease leave some room for expansion as the grease warms up in service.

Secure the countershaft in a soft jawed vice and using the correct size of bearing tube and a soft faced hammer fit the larger of the two bearings to the threaded end of the countershaft. Apply threadlock to the threads and screw on and tighten the countershaft chain wheel. Peen the end of the shaft in four points as an additional precaution to prevent the chain wheel unscrewing. Fit the grubscrew coating the threads with threadlock.

Insert the smaller bearing into the journal making sure it seats against the circlip.

100T 150T 175T 'O' RING LOCATION



Support the trunnion journal/trunnion bearing assembly in a soft jawed vice and using a soft faced hammer knock the countershaft assembly into the journal taking care not to dislodge the lower bearing. Remove the completed assembly and check the countershaft turns freely. Feed the short drive chain onto the countershaft chain wheel.

Coat the threads on the countersunk socket headed screws with threadlock and secure the assembly onto the face of the trunnion.

Turn the trunnion bearing so that the machined slot is at 12 o'clock and locate the trunnion bracket, fit the six setscrews and tighten.

Refit the drum assembly, countershaft chain and guard as previously described.

Coat the countershaft inside the engine housing with copperslip, fit the “V” belt pulley and gib head key. Refit the ‘V’ belt.

Refit the belt guard not forgetting the polythene plug, engine housing lid and top plate on the 175T.

Start the engine and run test checking for unusual noises.

Engine, Yanmar L48N/L48V5V Electric Start.

There is no difference in build specification between “CE” “UKCA” or “UKNI” marked machines intended for use in the UK, European Union or those intended for export elsewhere in the world. The Yanmar engines have a recoil rope starter fitted as an ‘emergency’ back up starting device in the event that the electrical starting system should fail. Note, starting the engine with the recoil in the absence of the battery or start key may damage the charging system.

For details on engine services or overhauls, changing engine oils, filters and bleeding the fuel system refer to the engine operator’s handbook or engine workshop manual.

Note: this ‘high speed’ engine is set to run at approx. 2700 rpm and rotates clockwise at the half speed (1350 rpm) PTO shaft extension. The “speed control” on factory fitted engines is modified to reduce the engine speed from the standard Yanmar setting. Replacement engines will need the speed control similarly modifying before installation. Refer to the illustrated Yanmar Type D Throttle Control instructions page in this manual.

Drive is transmitted from the half speed PTO shaft via a “V” belt and “V” drive pulleys.

The Fuel Stop Device on the Stage 5 Emission Compliant L48V5V is sealed and should not be tampered with. It is illegal in many Countries with Exhaust Emission Legislation in place to interfere with the fuel settings as this can negate the engine's emission compliance.

The engine is bolted to a height adjustable mounting plate, similar to the electric 110V motor to allow for belt tensioning.

Power to charge the battery is provided by integral flywheel mounted charge windings and engine mounted regulator with key switch control. Circuit protection is provided by a fuse mounted to the rear of the regulator on the RH side of the engine.

Note:- do not continuously crank the Yanmar engine over on the starter motor if it is difficult to start. This can overheat the starter and lead to premature failure in service. Investigate what might be the cause of the difficult starting. The engine should be cranked over intermittently for no more than 15-20 seconds at a time.

Battery Removal/Replacement

The 12-volt battery is secured on the R/H side of the Yanmar engine within the engine housing for security. To access the battery, first remove the closing plate.

The battery is retained by a non-conductive clamping block, cover and threaded studs, the studs pass through the clamp block screw down into and through the engine mounting plate being retained below the plate with two M6 nuts.

Remove the nuts, unscrew the studs and remove, lift off the cover and clamp block, disconnect the battery leads and slide out the battery. Reverse the procedure to refit the battery.

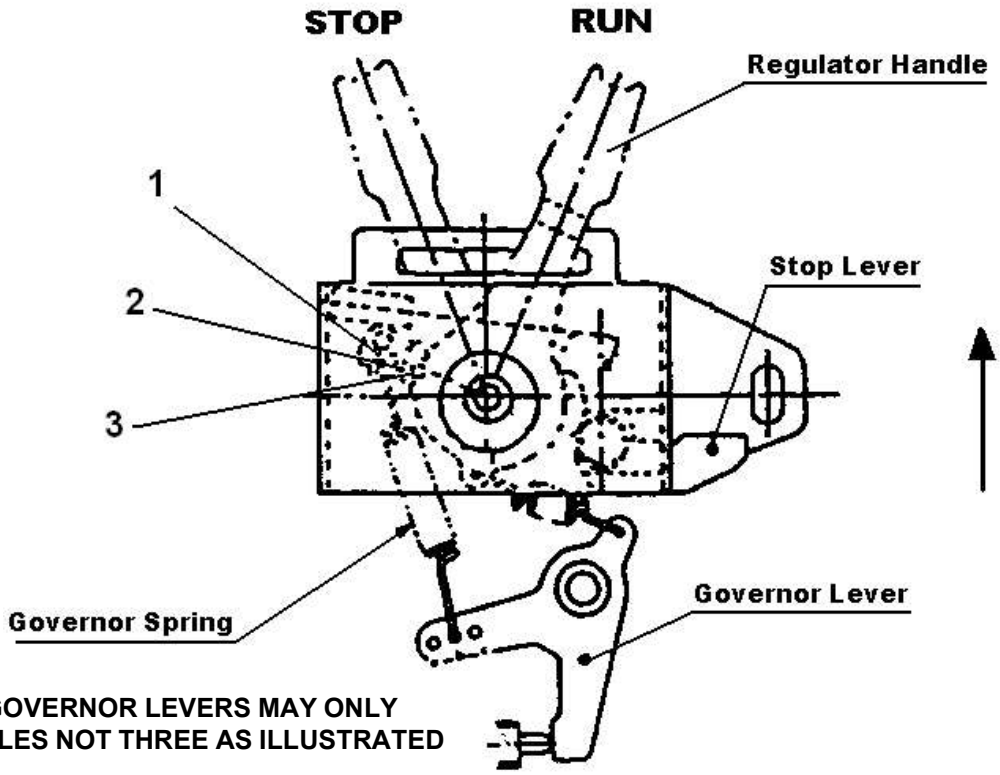
Drive Pulley/ "V" Belt Removal/Replacement

The "V" belt drive pulley is keyed onto the engine extension shaft and also held by a small grubscrew through the pulley shank. An M8 setscrew and flat washer is also screwed into the end of the engine extension shaft to retain the pulley. Replacement requires the removal of the engine.

Undo the knot in the recoil rope retaining the handle where it passes through the side of the engine housing, do not release the rope but remove the handle and pass the rope back through into the housing. Tie a loose knot in the rope to prevent it being pulled inside the recoil housing under spring tension. Alternatively the recoil can be removed from the engine and allowed to hang inside the engine housing. To remove the recoil mark its position on the

HANDFED MIXERS YANMAR L48 TYPE D THROTTLE

ENGINE THROTTLE CONTROL USED ON LATER L48 ENGINES FITTED TO 100T, 150T, 175T & 200T HANDFED MIXERS

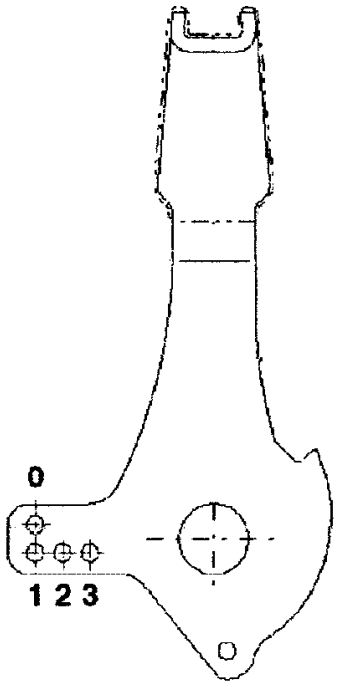


NOTE: SOME GOVERNOR LEVERS MAY ONLY HAVE TWO HOLES NOT THREE AS ILLUSTRATED

TYPE "D" THROTTLE CONTROL

WITH THE REGULATOR HANDLE IN THE "STOP " POSITION REMOVE THE CENTRE SECURING BOLT AND THE LOCKING SETSCREW FROM THE SLOT ADJACENT TO THE STOP LEVER.

CAREFULLY LIFT THE THROTTLE CONTROL ASSEMBLY AWAY FROM THE ENGINE SUFFICIENTLY TO GAIN ACCESS TO THE GOVERNOR SPRING. UNHOOK THE SPRING FROM THE GOVERNOR LEVER AND REMOVE THE ASSEMBLY. SECURE THE ASSEMBLY CAREFULLY IN A VICE AND CUT AWAY THE BOTTOM OF THE SLOT. TAKE CARE NOT TO DAMAGE OR LOSE THE SPRING.



REFIT THE THROTTLE CONTROL ASSEMBLY MOVING THE UPPER HOOK ON THE GOVERNOR SPRING INTO THE No 3 HOLE POSITION IN THE REGULATOR HANDLE. (SEE DRAWING OPPOSITE) LEAVE THE LOWER HOOK IN THE SECOND INNER HOLE IN THE GOVERNOR LEVER.

START THE ENGINE AND USING A SUITABLE REV COUNTER OR THE SECOND HAND OF A WATCH ROTATE THE CONTROL ASSEMBLY ANTICLOCKWISE TO GIVE A DRUM SPEED OF APPROX. 22RPM, (DO NOT EXCEED 23RPM) THE ENGINE SPEED SHOULD NOW BE SET TO APPROX 2650-2700RPM.

TIGHTEN THE TWO RETAINING SETSCREWS

flywheel housing and remove the three small screws which retain the assembly in place.

Remove the engine housing closing plate, engine housing lid, top plate (175T) and chain /belt guards. Disconnect the battery. Remove the ‘V’ belt and unbolt

the electrical panel from the side of the mainframe. Remove the bolts securing the engine to the mounting plate and carefully lift the engine out of the housing. Turn the engine through 180º’ to access the drive pulley and rest the engine back on the mounting plate taking care it does not topple off.

Slacken the grubscrew and remove the setscrew and washer, pull off the pulley, it may be necessary to use a small two legged puller if the pulley has been attached for some time.

Coat the bore of the pulley and the extension shaft with anti-seize compound and slide the pulley onto the shaft fully home up to the shoulder, fit the key, grubscrew, setscrew and washer.

Lift the engine back into the mainframe and secure to the bed. Insert the bolts but do not fully tighten, refit the ‘V’ belt check the belt alignment using a suitable straight edge laid across the rear of the belt pulleys. If the alignment is incorrect rectify by sliding the engine mounting plate and bracket back and forth on the engine bed, tighten the engine retaining bolts.

Check and adjust the belt tension by means of the long threaded adjusting screws. The V Belt needs to fairly tight to prevent slippage. Correct adjustment can be obtained using a weight of approximately 18kg placed on the engine mounting plate in place of the battery.

When correctly adjusted firm pressure is required to deflect the belt, the tension should be checked midway between the two pulleys. When the tension is correct fully tighten all the bolts and recheck the tension.

A belt running too tight will cause starting problems and the increased loadings will increase the rate of wear on the belt causing it to stretch prematurely and may also damage the shaft bearings. A belt running too slack will slip under load with the result that the drum will cease to revolve.

Reconnect the battery and electric start panel, ensuring the wiring is secured and will not chafe through.

Refit the recoil assembly or rope handle, engine housing lid, chain/belt guards not forgetting the polythene plug, top plate and closing plate.

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Emergency Stop Cable Removal/Replacement L48N & L48V5V

The later L48N and L48V5V engines have an external stop cable fitted, which terminates at the speed control assembly on the L/H side of the crankcase.

The cable passes through the R/H side of the engine housing, secured by a 9/16” thin nut routing across the top of the engine, secured to the belt guard by a panel type cable tie down to the control assembly.

It is necessary to remove the battery to gain access to the cable anchor point on the speed control. Slacken the two M6 locknuts retaining the outer cable to the anchor and release/unclip the inner cable from the control lever. Remove the M6 nuts and flat washers. Remove the 9/16” nut at the opposite end of the cable, cut the cable tie and withdrawn the cable through the engine housing.

Reverse the procedure to replace the cable, ensuring the inner cable is free to move within the outer when correctly installed. Clip the cable back to the belt guard using a suitable cable tie. Refit the battery.

Note: over tightening the 9/16” nut will result in the cable end snapping off.

110 Volt 1PH 1.5Kw 2.0HP Electric Motor

The motor runs at approximately 1420/1470 rpm and rotates Clockwise as does the Yanmar L48.

To accommodate the reduction in rpm at the motor the drive pulley on the motor shaft is a smaller diameter than that on the Yanmar L48 whilst the countershaft pulley is the same, the motor also uses a different length V belt to that of the Yanmar.

The motor is mounted on the same height adjustable mounting plate as per the Yanmar L48 engines to allow for belt tensioning.

The contactor enclosure is attached to the chain/belt guard and an ‘emergency’ stop button is fitted to the rear of the engine housing.

Note, Operating the stop button stops the motor **BUT** does not isolate the electricity supply. Before carrying out any work on the motor, contactor or or enclosure isolate the supplyat the main distribution board and attach a suitable ‘locked out’ tag to prevent the supply being inadvertently re-connected.

Refer to the wiring diagram for details of the connections between the motor, contactor and emergency stop button.

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Belt Drive Pulley/"V" Belt Removal/Replacement

The drive pulley is mounted onto the motor extension shaft, and is secured with a feather key and grubscrew.

Unlike the Yanmar powered versions it is possible to remove the pulley without removing the motor.

To remove the pulley, first disconnect the electrical supply and isolate the mixer. Remove the engine housing lid, (175T) closing and top plates, upper and lower belt guard and "V" belt. When removing the upper belt guard take care as the contactor is attached. Mark the position of the pulley on the shaft. Turn the motor shaft until the grubscrew is visible, slacken the screw and remove the pulley. Reverse the procedure to refit coating the bore of the pulley with anti-seize compound prior to assembly.

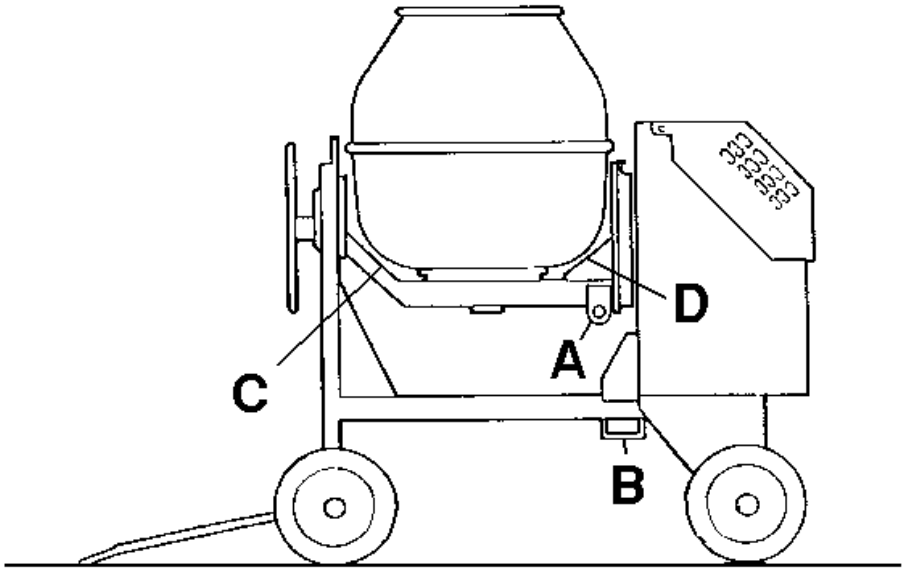
Fit the "V" belt and confirm the alignment of the pulleys using a suitable straight edge laid across the rear of both pulleys. Adjust the height of the motor to tension the "V" belt. The tension is correct when the belt deflects 8-12mm check midway between the pulleys under firm thumb pressure.

A belt running too tight may cause starting problems and the increased loadings will increase the rate of wear on the belt causing it to stretch prematurely and may also result in damage to the motor shaft bearings. A belt running too slack will slip under load with the result that the drum will cease to revolve.

Refit the engine housing lid, closing and top plates and upper and lower belt guards, not forgetting the plastic plug, take care not to damage the contactor when refitting the upper belt guard. Reconnect the electrical supply.

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Lashing Down & Lifting Points



Lashing Down & Lifting Points

General

Care should be taken when lifting or transporting the Mixer to ensure that lifting or retaining Straps are in good condition and the following procedures must be followed when lifting or lashing down to avoid causing unnecessary damage.

Its is recommended that chains or webbing slings are used to lift the mixer via the lifting point on the trunnion and that ratchet type webbing straps are used to lash the mixer down.

Lifting the Mixer (Crane)

Turn the drum and trunnion through 180' and using the locking pin in the tilting handwheel lock the assembly in this position with the lifting eye **'A'** uppermost.
Attach suitable lifting equipment to the lifting eye and slowly take the weight, do not 'snatch' the mixer otherwise damage may be caused to the lifting point, trunnion or lifting equipment. To prevent the drawbar swinging freely as the mixer clears the ground rest the drawbars 'T' handle on the mainframe below the upturned drum. If the mixer is on site and the wheels are immersed in dried concrete or mortar the wheels must be freed before attempts are made to lift the mixer. Be aware that the mixer will tend to swing as it clears the ground.

Lifting the Mixer (Forklift/Telehandler)

Using the tilting handwheel locking plunger, lock the drum upright as illustrated overleaf. If the wheels are immersed in dried concrete or mortar, free them before attempting to lift the mixer.

Spread the fork tines and carefully position the forks below the mainframe so that one tine enters and passes through the bracket **'B'** below the mainframe, the other fork should be spread as wide as possible. Position the carriage as close as possible to the mixer and rest the mixers drawbar on one of the fork tines to prevent it swinging freely.

Slowly tilt the carriage back slightly to prevent the mixer rocking forward and raise the mixer just clear of the ground. Do not raise the mixer unnecessarily high, keep the height to the minimum required to clear any obstructions without unduly obstructing your forward vision. When travelling keep your speed to the minimum and when loading vehicles do not raise the mixer to the height of the bed until the mixer is close to the vehicle. Similarly when unloading vehicles lower the mixer just clear of the ground as soon as it clears the side of the vehicle.

Lashing Down

General

It is recommended that unless the mixer is pulled up against a headboard or some form of substantial wheel chocks that two ratchet type webbing straps are used to retain the mixer, one pulling to the rear and one pulling to the front. The drum should be locked in the upright position shown overleaf to keep the centre of gravity as low as possible.

Position the mixer on the vehicle bed and chock the rear wheels to prevent it rolling until lashed down. Turn the front axle so that the drawbar is below the mixer and not forming an obstruction on the vehicle bed. Lock the drum in the upright position. Pass one of the webbing straps between the drum and trunnion at point **'C'** and secure the strap down to retaining hooks on the vehicle bed in front of the mixer. Pass the second strap between the drum and trunnion at point **'D'** and secure the strap down to retaining hooks on the vehicle bed to the rear of the mixer. Tighten the straps by means of the ratchets until the mixer is securely held.

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SECTION 3

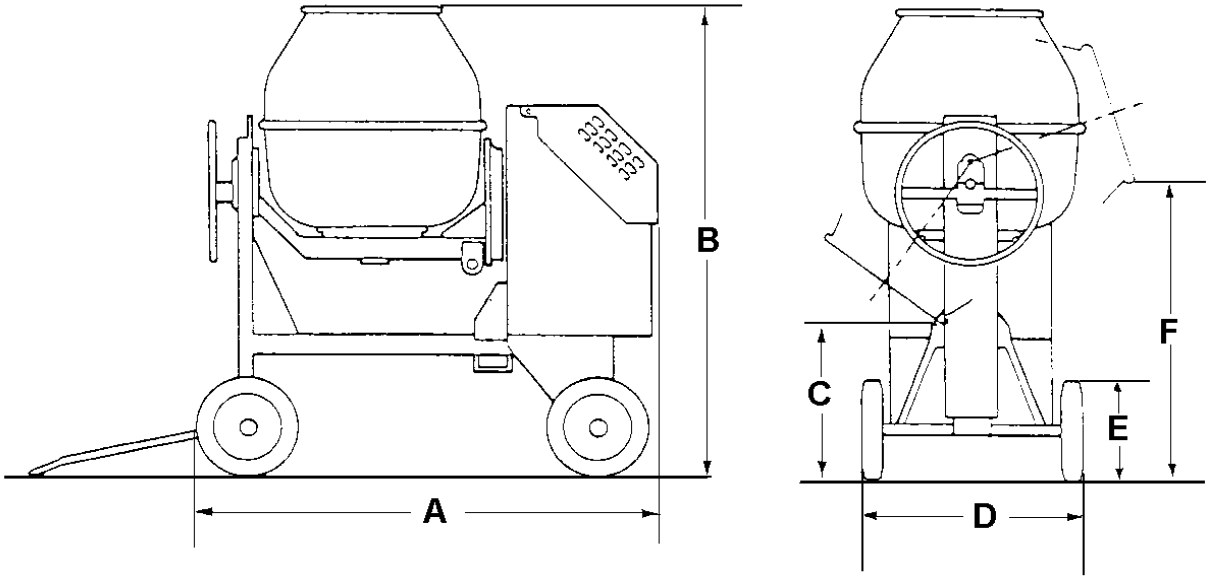
GENERAL ARRANGEMENT DIMENSIONS

DIMENSIONS & GENERAL ARRANGEMENT

FOUR WHEEL MODELS

(ALL DIMENSIONS NOMINAL)

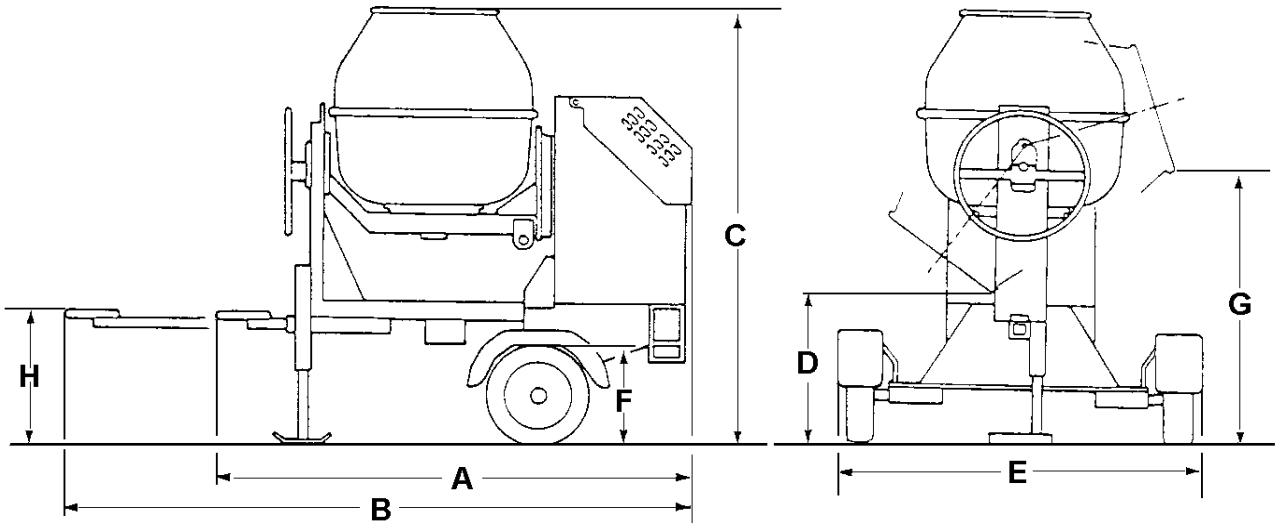
	100T	150T	175T
A	1515	1650	1680
B	1560	1730	1780
C	520	555	520
D	800	800	800
E	400	400	400
F	1000	1100	1110
Weight	340kg	400kg	420kg



TWO WHEEL MODELS

(ALL DIMENSIONS NOMINAL)

	100T	150T	175T
A	1805	1890	2060
B	2390	2490	2640
C	1630	1770	1840
D	600	610	590
E	1240	1320	1350
F	4.80/4.00-8	4.80/4.00-8	145R10
G	1060	1140	1180
H	490	490	450
Weight	365kg	420kg	460kg



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SECTION 4
SERVICE SCHEDULES

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Service Schedule

Also refer to the Parts & Operators Handbook

The engine will require additional services or adjustments in addition to those listed below. (See the appropriate Engine Operators Handbook or Workshop Manual)

Daily: (8) Hours

Before Work

Lubricate all grease points.

Check fuel and lubricating oil levels.

Check for oil and fuel leaks.

Check/clean/replace air filter element

Check the wheel nuts on Two Wheel Fast Tow mixers

After Work

Top up fuel tank.

Clean out drum and hopper.

Wash down the mixer.

Weekly: (50 Hours)

The above and the following:

Drive Chain/Belt	Check tension, adjust if necessary
Controls and Pivots	Lubricate all levers, rods, pivots and pins with oil
Wheel Hubs-Two Wheel Tow	Charge grease point on both hubs until grease is visible in breather hole in dust cap.

Battery	Check terminals, clean if necessary, top up
Drum Drive	Inspect and lubricate the chain and teeth of the drum bevel gear and pinion.

125 Hours

The above and the following:

Check tightness of nuts, bolts etc.

Clean/Change air filter element

200 Hours Minimum

The above and the following:

Engine	Change air filter element
	Change lubrication oil and filter
	Change fuel filter
	Check valve clearances

(Also see relevant Engine Handbook/Workshop Manual as oil changes periods may differ and oils may need to be changed more frequently.)

400 Hours

The above and the following:

Engine	Check the fuel injection timing (Yanmar)
	Check valve clearances
	Clean fuel injectors

Every 12 Months: (1000 Hours or earlier if conditions dictate)

The above and the following:

Engine	Decarbonise if necessary
	Check Fuel Injection pump and Injectors
	Clean cylinder barrel and head cooling fins

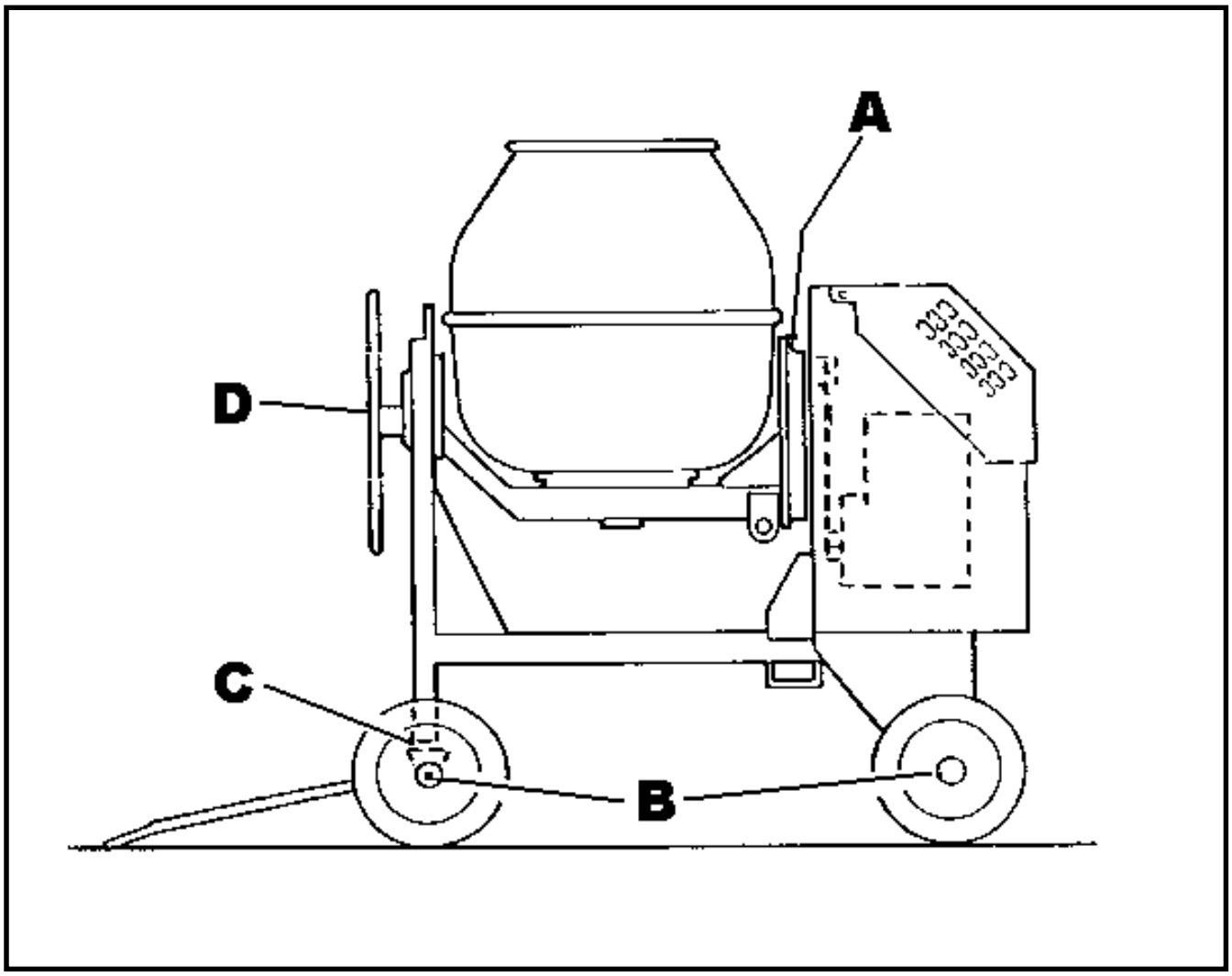
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SECTION 5

LUBRICATION DIAGRAM

LUBRICATION POINTS



Lub Point	Type	Use	No of Points
A	Drive Chain	Oil	1
B	Wheels	Oil	4
B1	Wheel Hubs (Pneu)	Grease	2
C	Steering Joint	Oil	1
D	Tilt Wheel	Oil	2

LUBRICANTS

MIXERS ARE FACTORY FILLED WITH THE FOLLOWING OILS & GREASES OR EQUIVILENT GRADES

Engine	Rubia B10W/30 Oil
Electric Motor Bearings	Multis EP2 Grease
Drive Chain	Rubia B20W/30 Oil
Bevel Gears	Open Gear Lubricant
Drum Shaft	Anti-seize Compound
Grease Nipples	Multis EP2 Grease
Linkages & Hinges	Rubia B20W/30 Oil
Pivots	Rubia B20W/30 Oil
Bearings (on assembly)	Multis EP2 Grease

Refer to your local oil supplier for a list of the locally available equivalent grades

MIXER DRUM SEALANT

Silicone Sealant	Winget Part No : V2000772

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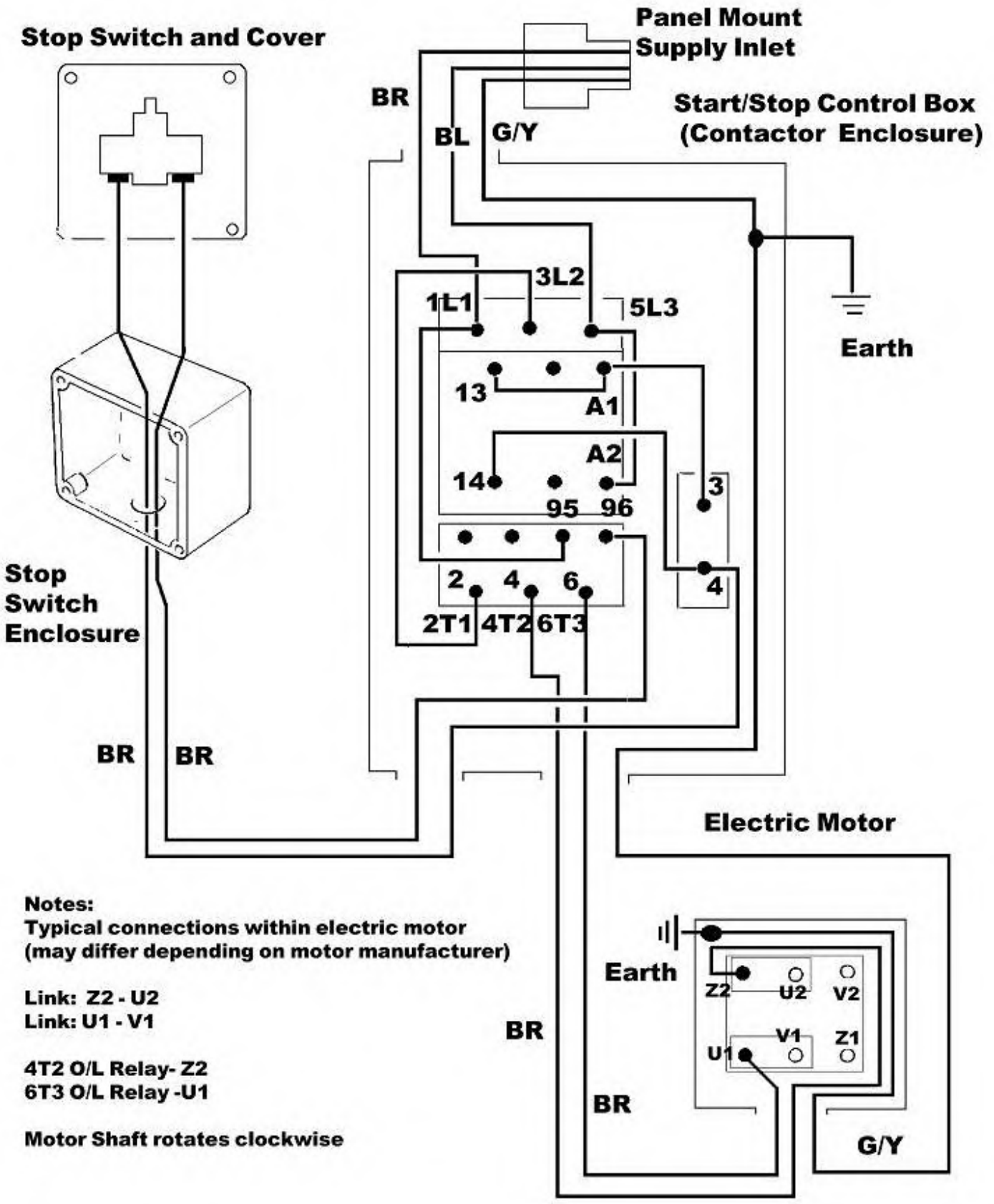
100T, 150T & 175T

SECTION 6
WIRING DIAGRAMS

TECHNICAL INFORMATION

ELECTRICALLY DRIVEN MIXERS WIRING CIRCUIT-SCHNEIDER CONTACTOR

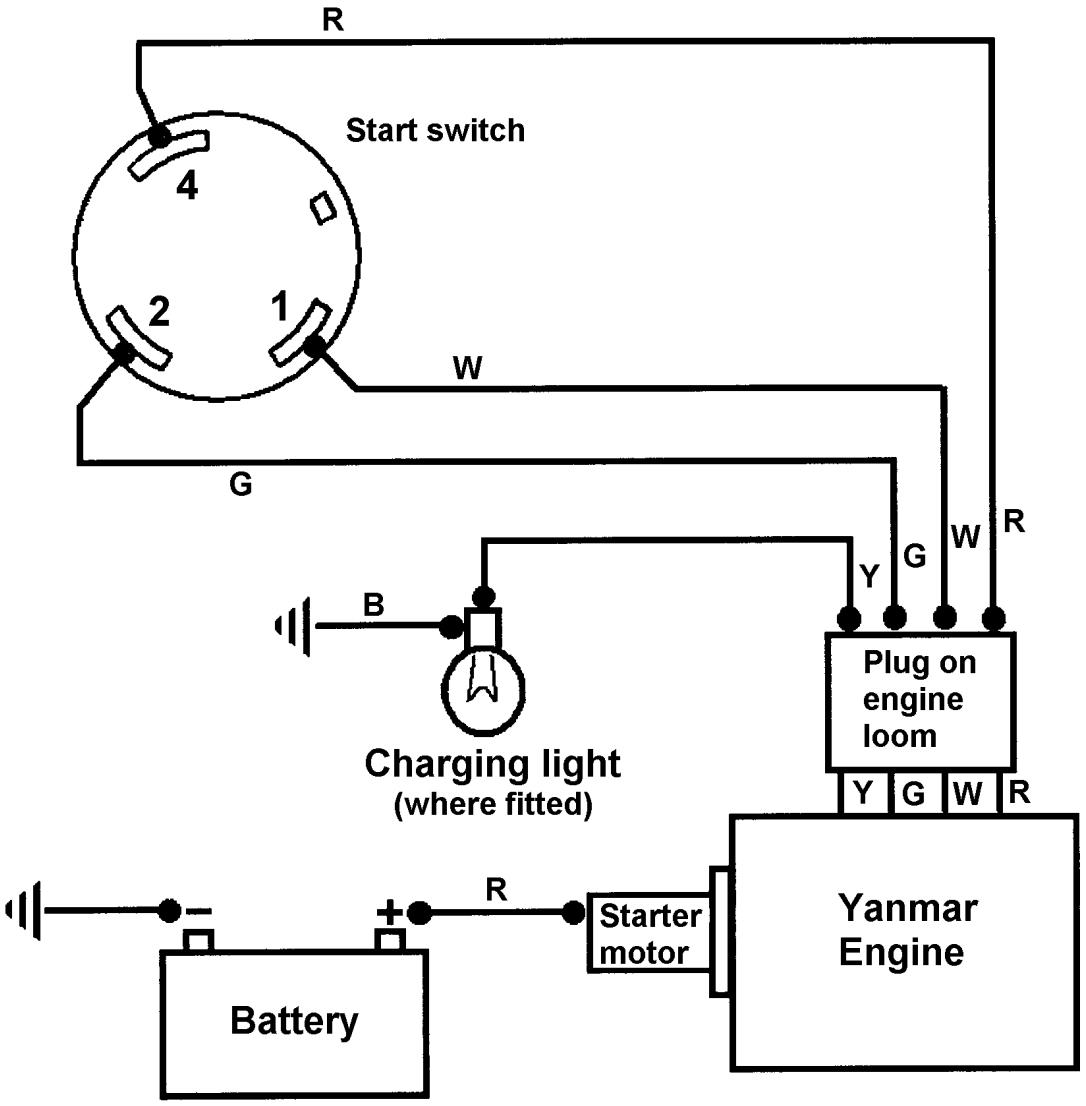
Electrical connections must only be made by a suitably qualified/competent person or electrician.



TECHNICAL INFORMATION

YANMAR L48N/L48V5V KEY START WIRING CIRCUIT

In adition to the circuit shown below, the engine is fitted with its own loom. (see Yanmar service literature)



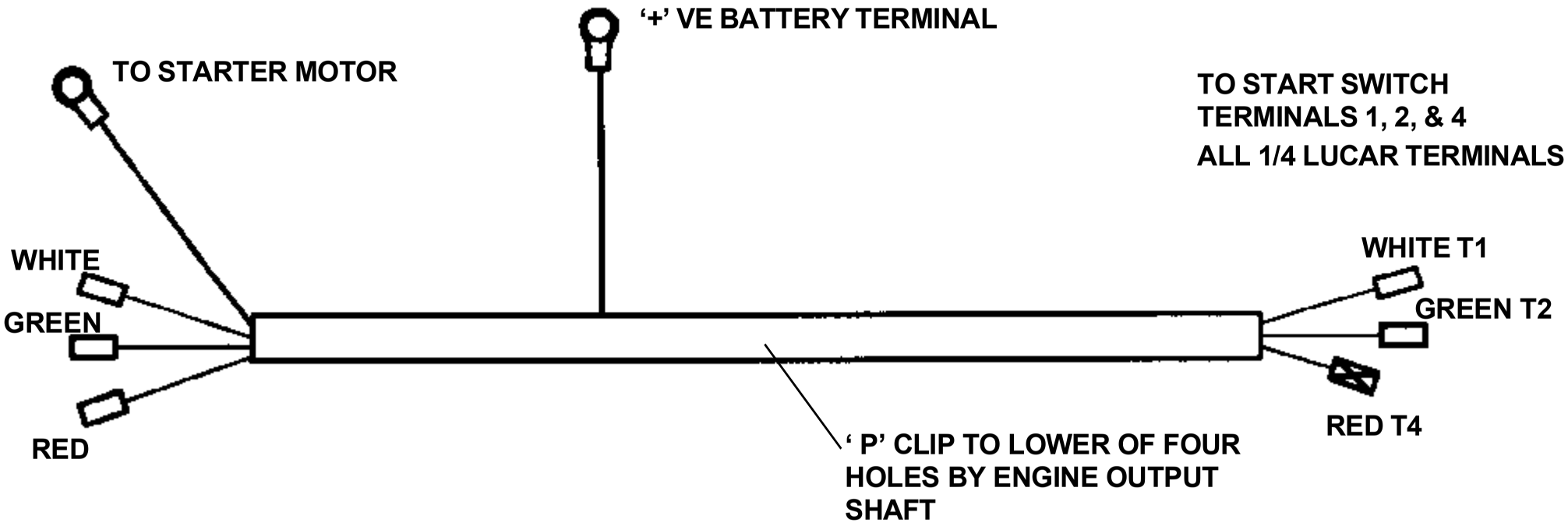
Wire colours

R Red
B Black
G Green
W White
Y Yellow

NOTE: Wire identification

The red wire to the battery is much thicker than the red wire to the start switch.

YANMAR L48N & L48V5V WIRING DIAGRAM



RED	GREEN
YELLOW	WHITE

FOUR WAY PLUG TO REAR OF ENGINE BELOW IN-LINE FUSE ADJACENT TO REGULATOR

PART NUMBER 513362200

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SECTION 7

NOISE LEVELS

SECTION 7

NOISE LEVELS

Noise Tests were carried out in accordance with EC Directive 2000/14/EC on a 4 metre Hemisphere with the drum loaded and rotating and also in accordance with UKSI 2001/1701 again on a 4 metre hemisphere with the drum loaded and rotating.

Operators Ear Tests were carried out at a distance 1 metre from the Drum and Handwheel at a height of 1 metre.

Yanmar L48N & L48V5V (2000/14/EC & UKSI 2001/1701)

4 metre	101Lwa
Operators Ear	80Lpa

110 Volt Electric Motor (2000/14/EC & UKSI 2001/1701)

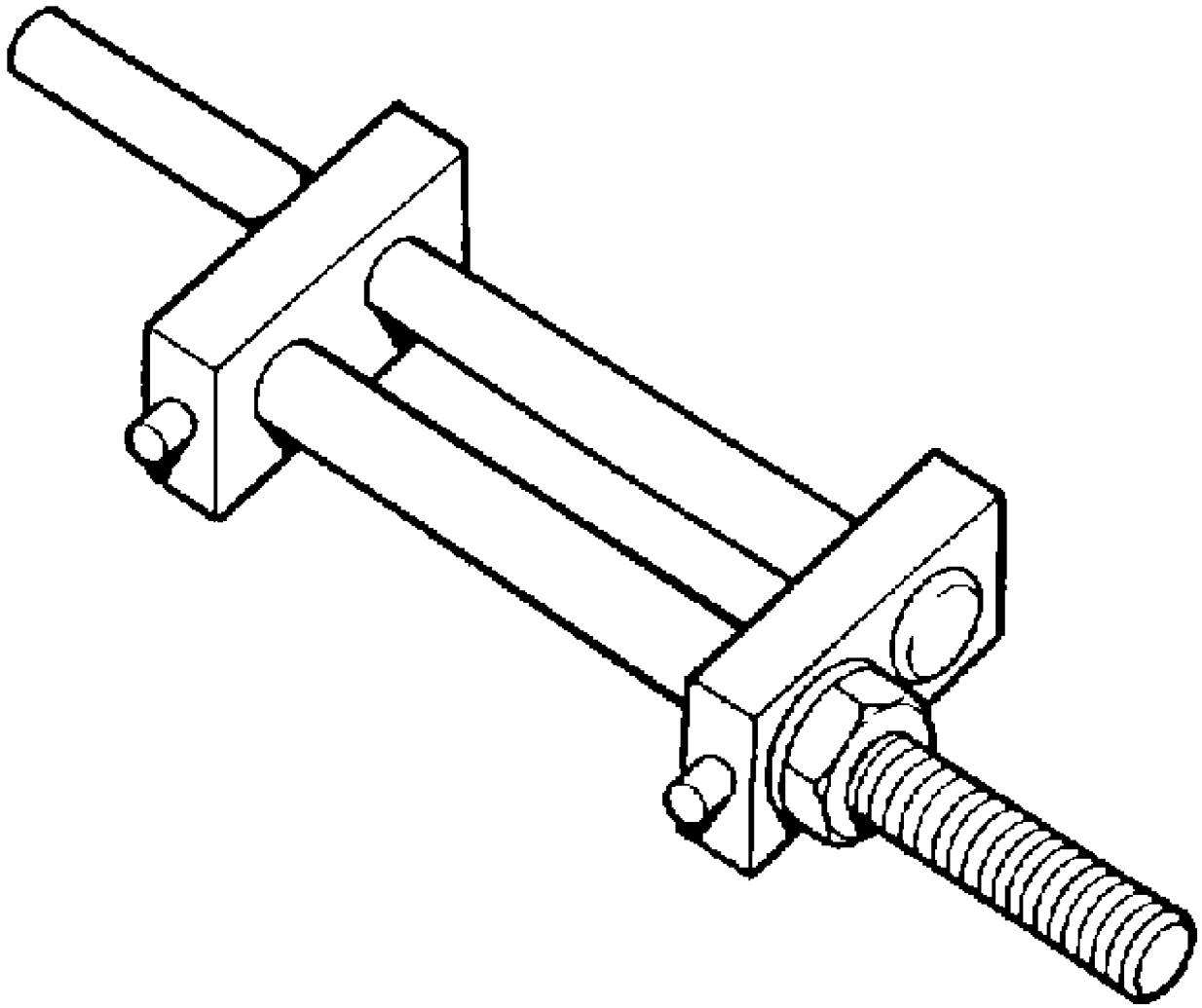
4 metre	90Lwa
Operators Ear	80Lpa

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SECTION 8
SPECIAL TOOLS

100T 150T 175T DRUM CLIP TOOL



513204000 DRUM CLIP TOOL

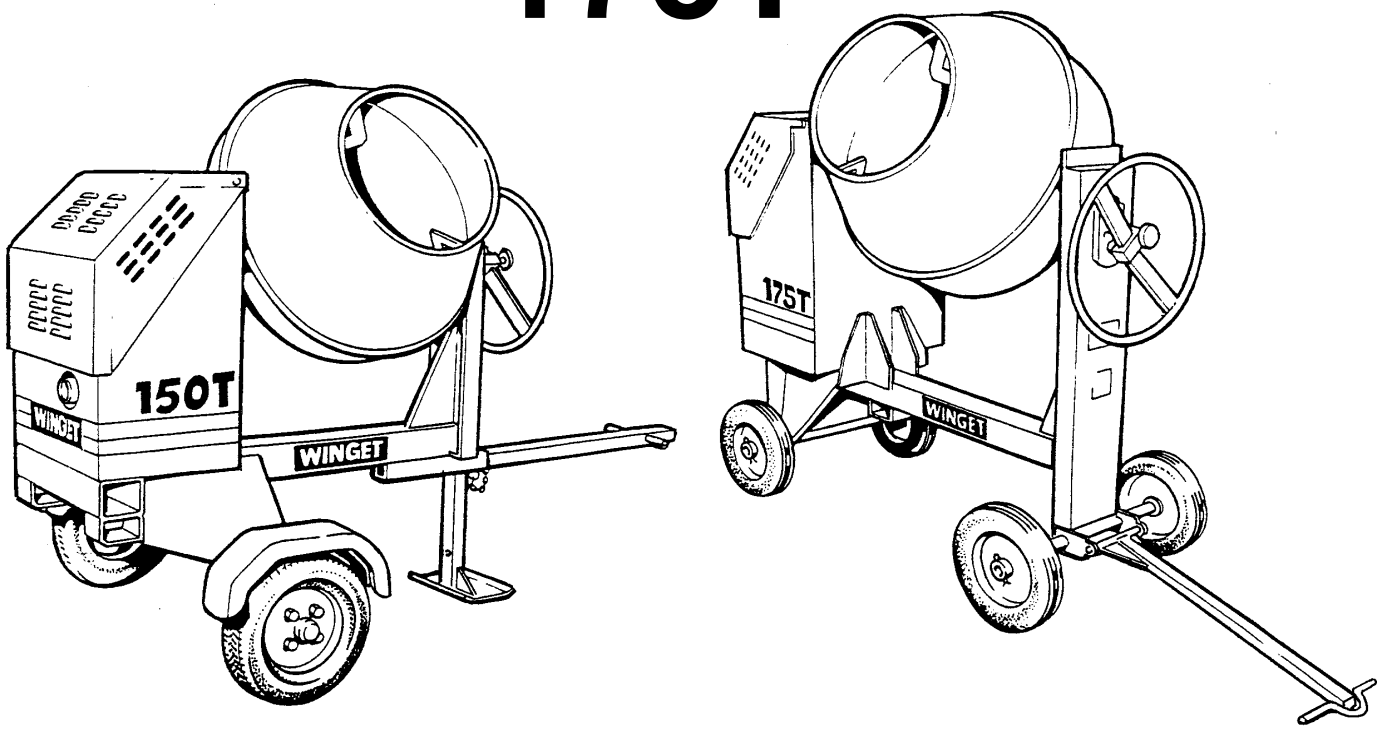
WORKSHOP MANUAL

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SECTION 9

PARTS LISTING

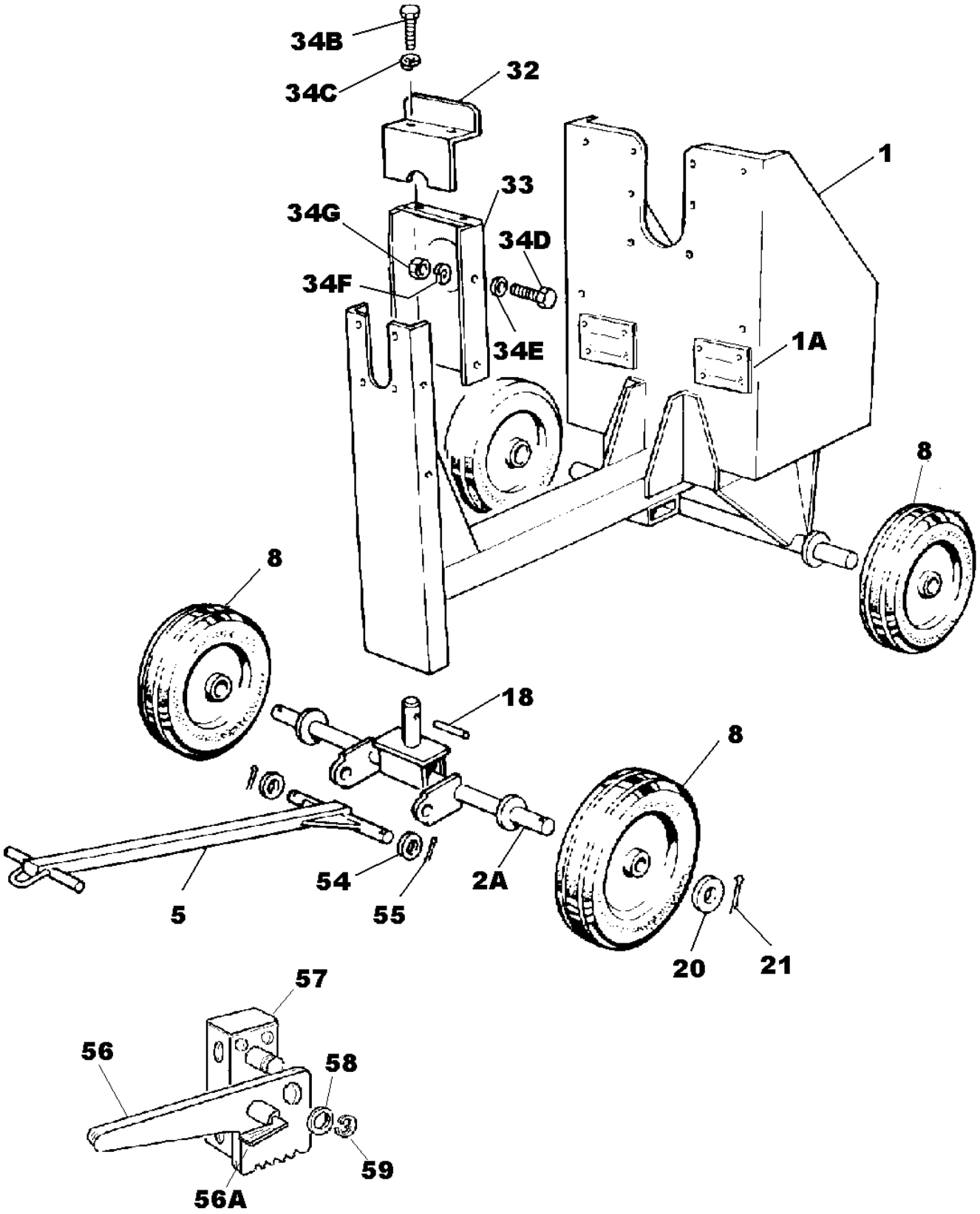
Mixers
100T
150T
175T



Contents

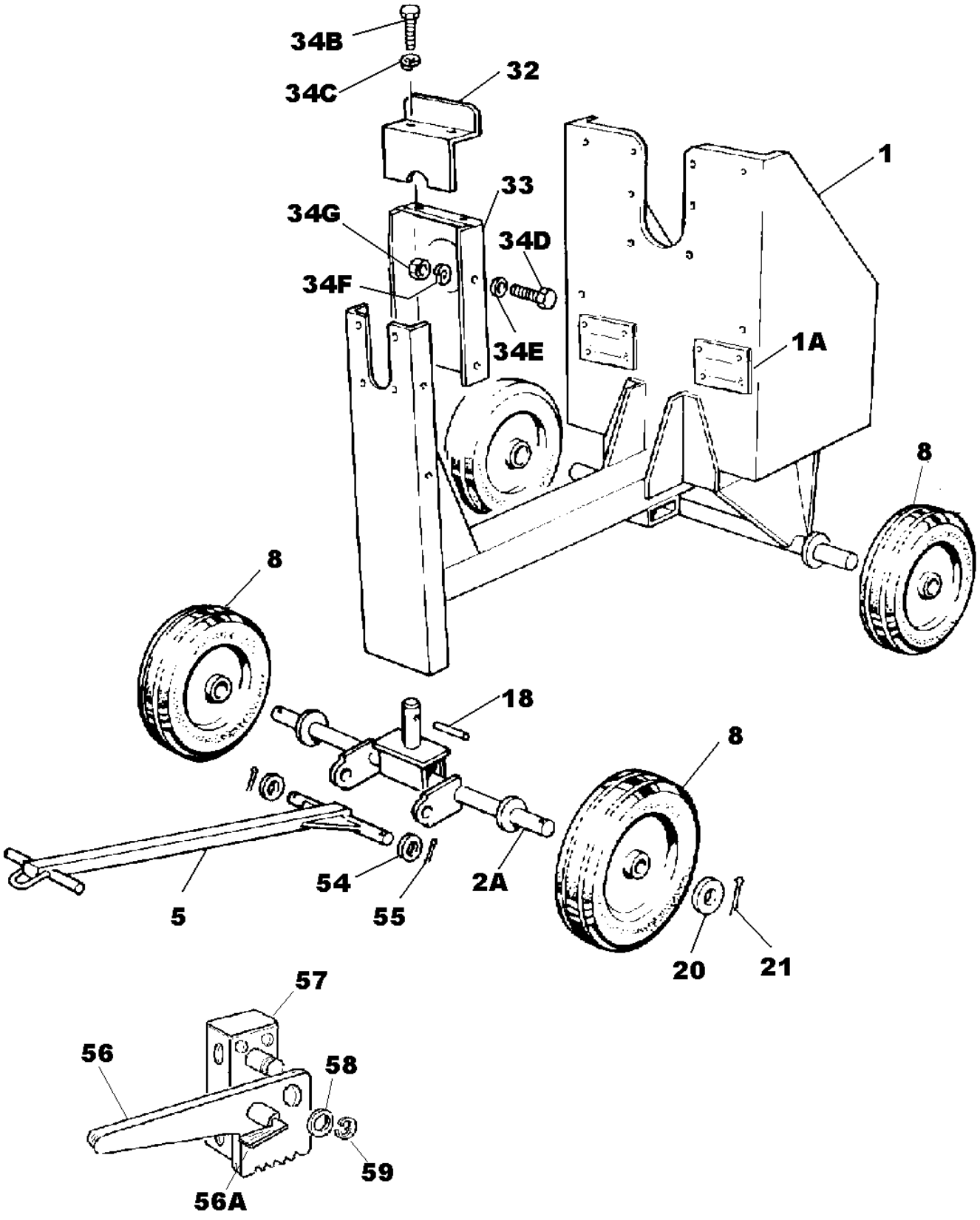
PARTS SUPPLEMENT 110V MIXER

FOUR WHEEL MAINFRAME (100T & 150T)	A - 1A
COVERS & GUARDS (100T & 150T)	A - 1B
FOUR WHEEL MAINFRAME (175T)	A - 2A
COVERS & GUARDS (175T)	A - 2B
TWO WHEEL MAINFRAME (100T & 150T)	A - 4
TWO WHEEL MAINFRAME (175T)	A - 5
DRUM	B - 1A
TRUNNION & TILT WHEEL	B - 1B
DRUM DRIVE	B - 1C
YANMAR L48N5SJ1 (electric start)	C - 5
YANMAR L48V5VSJ1 (electric start) Stage 5 Compliant	C-5A
STARTING CIRCUIT, Yanmar L48N5SJ1/L48V5VSJ1	C - 6
EMERGENCY STOP CABLE, Yanmar L48N5SJ1/L48V5VSJ1	C - 6A
DECALS & PLATES	D - 1
SPECIAL TOOLS	D - 3

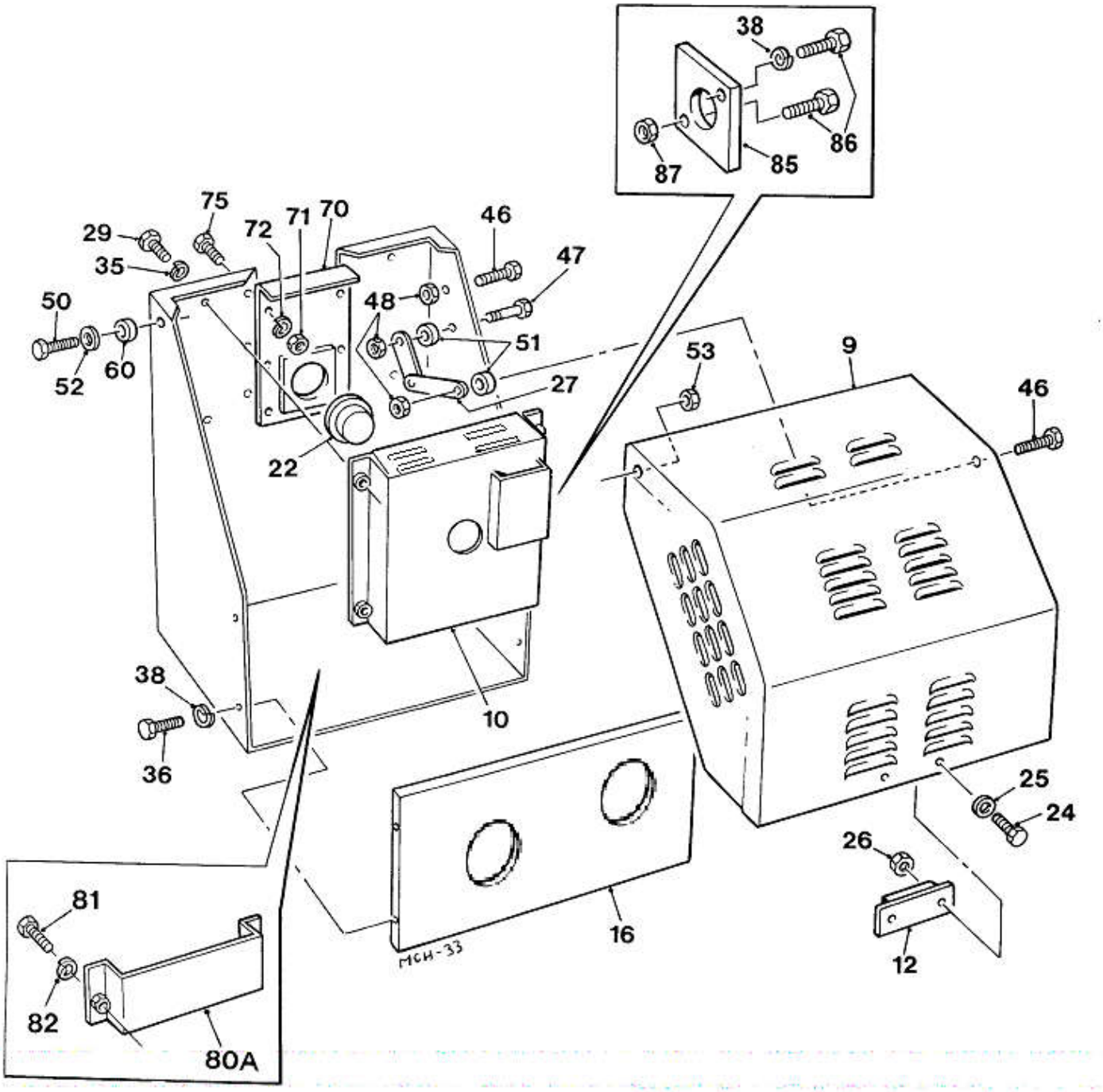

34B
34C
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34G
34D
34F
34E
1A
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2A
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56A

Item	Part no	Serial no	Description	Qty
1	513340900		MAINFRAME, **100T**	1
1A	513371700	11752/	PLATE, vent	2
1B	11S02A		SCREW, set	8
1C	17S03		WASHER, spring	8
1	513341000		MAINFRAME, **150T**	1
1A	513371700	05813/	PLATE, vent	2
1B	11S02A		SCREW, set	8
1C	17S03		WASHER, spring	8
2A	513358100		AXLE, front	1
5	513341200		TOWBAR	1
8	475115000		WHEEL, cushion tyre, 405mm dia	4
18	353830650		PIN, spirol	1
20	10S09		WASHER, flat	4
21	44S05G		PIN, split	4
-	513198400		GUARD, tilt wheel, assembly	1
32	513198402		GUARD, upper	1
33	513198401		GUARD, lower	1
34B	11S02B		SCREW, set	2
34C	17S03		WASHER, spring	2
34D	66S03CC	**100T** /12474 **150T** /06400	SCREW, set, UNC	4
34E	10S03	**100T** /12474 **150T** /06400	WASHER, flat, imperial	4
34F	41S05	**100T** /12474 **150T** /06400	WASHER, spring, imperial	4
34G	104S03	**100T** /12474 **150T** /06400	Nut, UNC	4
34D	11S03B	12475/ **100T** 06401/ **150T**	SCREW, set, metric	4
34E	17S04	12475/ **100T** 06401/ **150T**	WASHER, spring, imperial	4

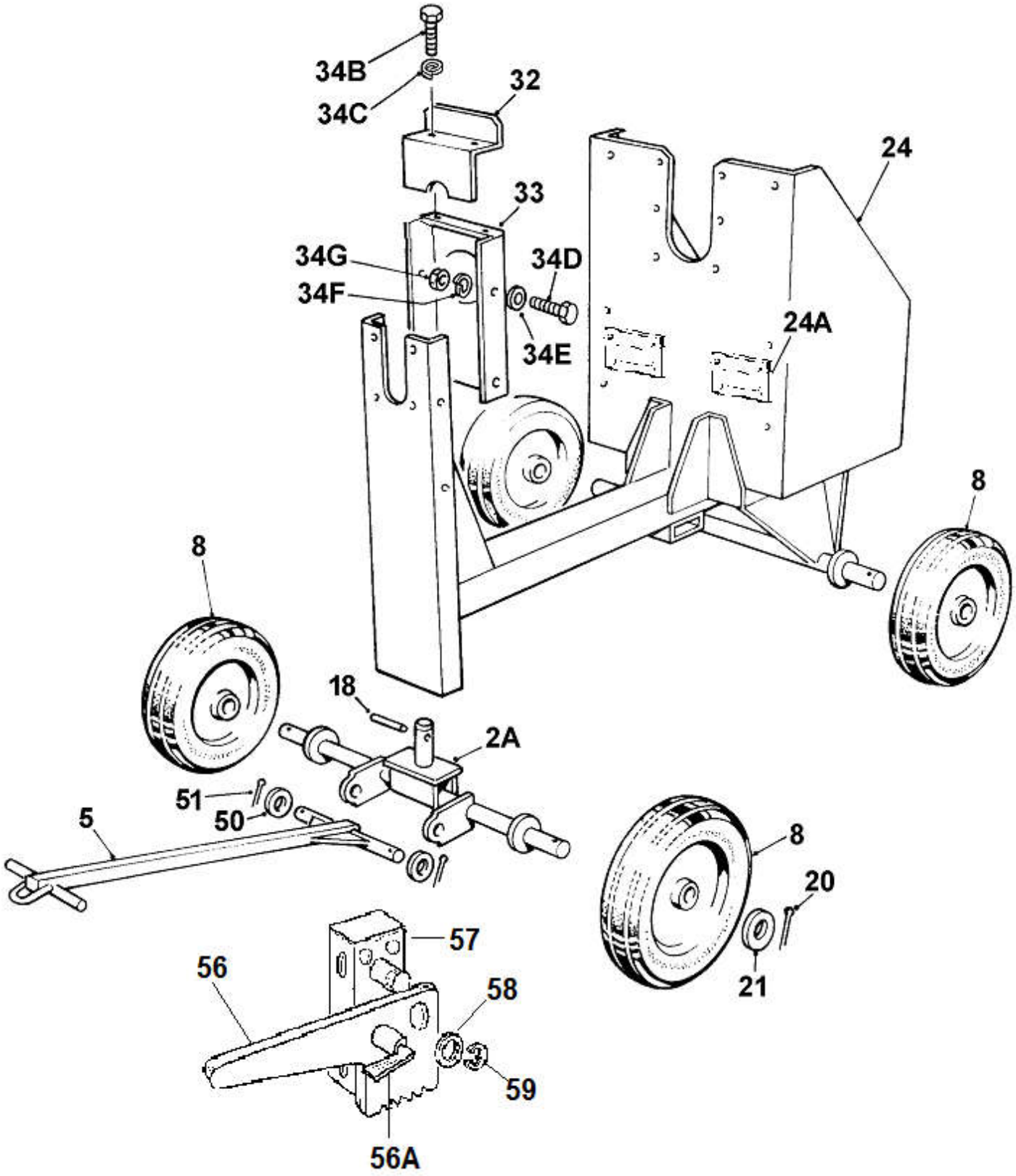
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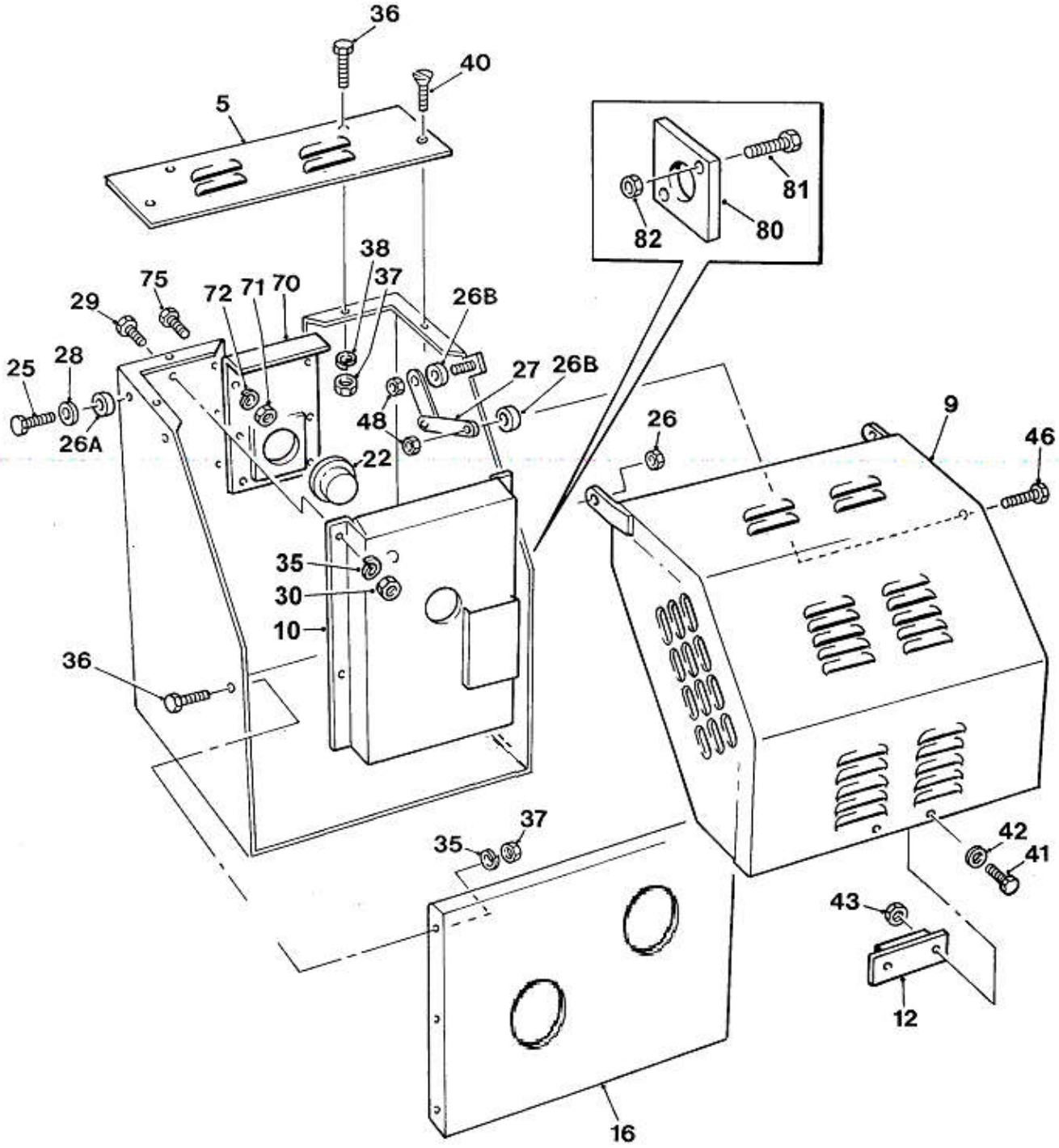
Item	Part no	Serial no	Description	Qty
34F	267S05	12475/ **100T** 06401/ **150T**	WASHER, flat, metric	4
34G	326S05	12475/ **100T** 06401/ **150T**	NUT, rivet knurled, metric	4
		11195/ **100T** 05637/ **150T**		
56	513370600		LEVER, handbrake assembly	1
56A	513370800		CATCH, locking, sprung	1
57	513370700		PIVOT, bracket	1
57A	11S04C		SCREW, set, not illustrated	2
57B	17S05		WASHER, spring, not illustrated	2
57C	267S06		WASHER, flat, not illustrated	2
58	10S18		WASHER, flat	1
59	132412010		CIRCLIP	1


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82
80A
MCH-33

Item	Part no	Serial no	Description	Qty
9	513341300		LID, engine housing	1
10	513341400	/11751	GUARD, belt L48N5SJ1S 100T	1
10	513341400	/05854	GUARD, belt L48N5SJ1S 150T	1
10A	513371600	11752/	GUARD, belt, L48V5VSJ1 engine, 100T	1
10B	513371500	05855/	GUARD, belt, L48V5VSJ1 engine, 150T	1
12	513205300		STOP, rubber	1
16	513341500		PLATE, closing, **100T**	1
16	513341600		PLATE, closing, **150T**	1
22	241859000		PLUG, polythene	1
24	11S02A		SCREW, set	2
25	267S04		WASHER, flat	2
26	61S02		NUT, Binx, self-locking	2
27	513287200		STAY, housing lid	1
29	11S02B		SCREW, set	4
35	17S03		WASHER, spring	4
36	11S02B		SCREW, set	4
38	17S03		WASHER, spring	4
46	28S02E		SCREW, set, *obsolete use*	2
46	11S03D		SCREW, set,	2
47	6S02E		BOLT, *obsolete use*	1
47	8S03E		BOLT	1
48	87S02		NUT, binx, self-locking, *obsolete use*	3
48	61S03		NUT, binx, self-locking	3
50	11S04E		SCREW, set	2
51	513340800		SPACER	2
52	267S06		WASHER, flat	4
53	7S04		NUT	2
60	555170000		SPACER	2
70	513151800		BRACKET, trunnion	1
71	104S03		NUT	6
72	41S05		WASHER, spring	6
75	66S03CC		SCREW, set	6
80A	513362400	/05854	GUARD, ***150T*** *Not used with L48V5VSJ1 engine*	6
81	11S02A		SCREW, set	2
82	17S03		WASHER, spring	2
85	513362600		PLATE	1
86	11S02C		SCREW, set	2
87	61S02		NUT, Binx	1/2

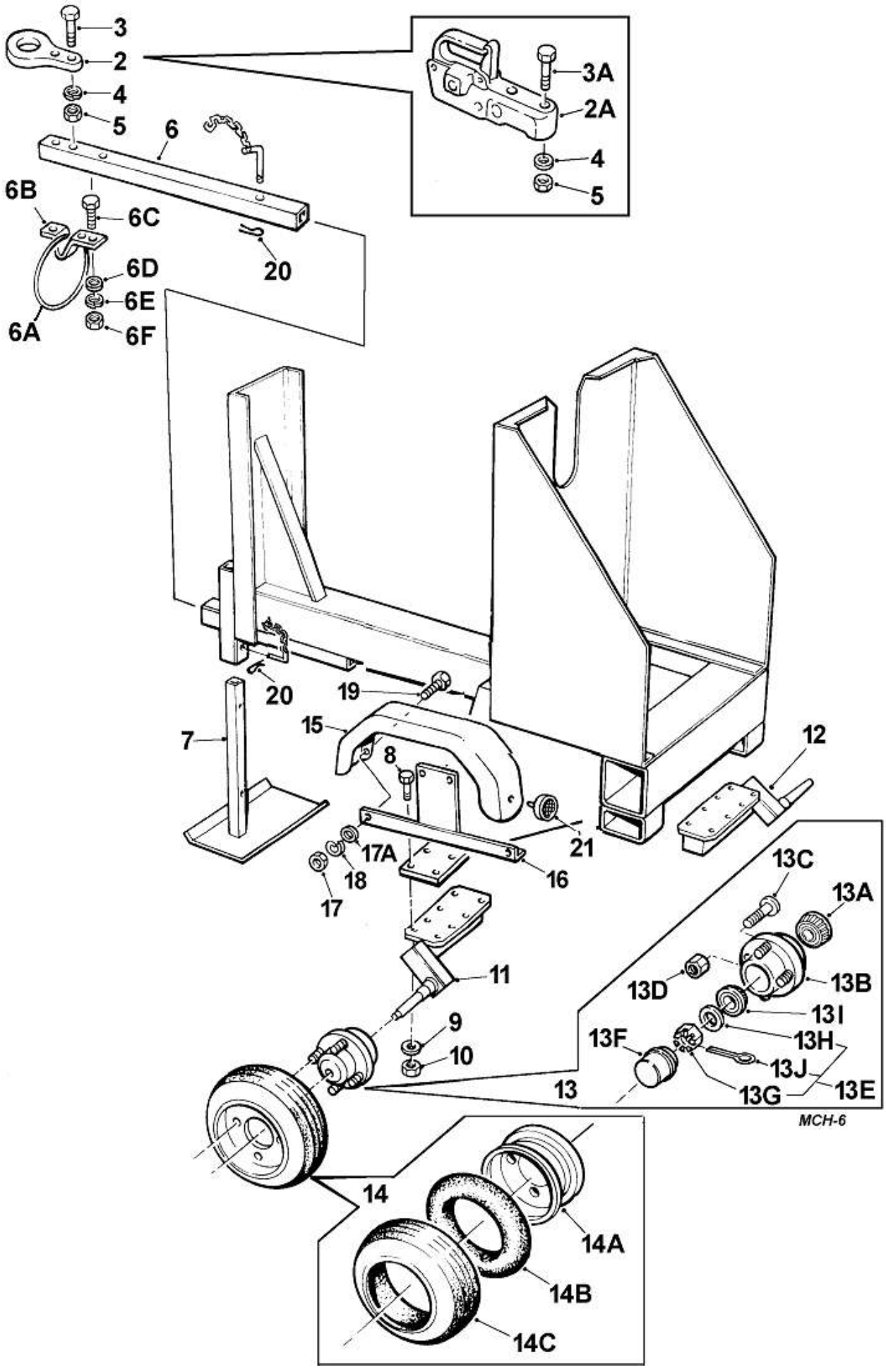

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Item	Part no	Serial no	Description	Qty
2A	513358100	01726 /	AXLE, front	1
8	475115000	02282 /	WHEEL, cushion tyre, 405mm (16") dia	4
18	353830650		PIN, spirol	1
20	44S05G		PIN, split	4
21	10S09		WASHER, flat	4
24	513269400		MAINFRAME	1
24A	513371700	05811/	PLATE, vent	2
24B	11S02A		SCREW, set	8
24C	17S03		WASHER, spring	8
-	513198400		GUARD, tilt wheel, assembly	1
32	513198402		GUARD, upper	1
33	513198401		GUARD, lower	1
34B	11S02B		SCREW, set	2
34C	17S03		WASHER, spring	2
34D	66S03CC		SCREW, set, UNC	4
34E	10S03		WASHER, flat, imperial	4
34F	41S05		WASHER, spring, imperial	4
34G	104S03		NUT, UNC	4
	Items 34D, 34E, 34F & 34G above replaced by metric from Serial No 06401, see below:-			
34D	11S03B		SCREW, set, metric	4
34E	17S04		WASHER, spring, metric	4
34F	267S05		WASHER, flaT, metric	4
34G	326S05		NUT, rivet, knurled, metric	4
50	10S17		WASHER, flat	2
51	44S03D		PIN, split	2
		05604/	**175T**	
56	513370600		LEVER, handbrake assembly	1
56A	513370800		CATCH, locking, sprung	1
57	513370700		PIVOT, bracket	1
57A	11S04C		SCREW, set, not illustrated	2
57B	17S05		WASHER, spring, not illustrated	2
57C	267S06		WASHER, flat, not illustrated	2
58	10S18		WASHER, flat	1
59	132412010		CIRCLIP	1


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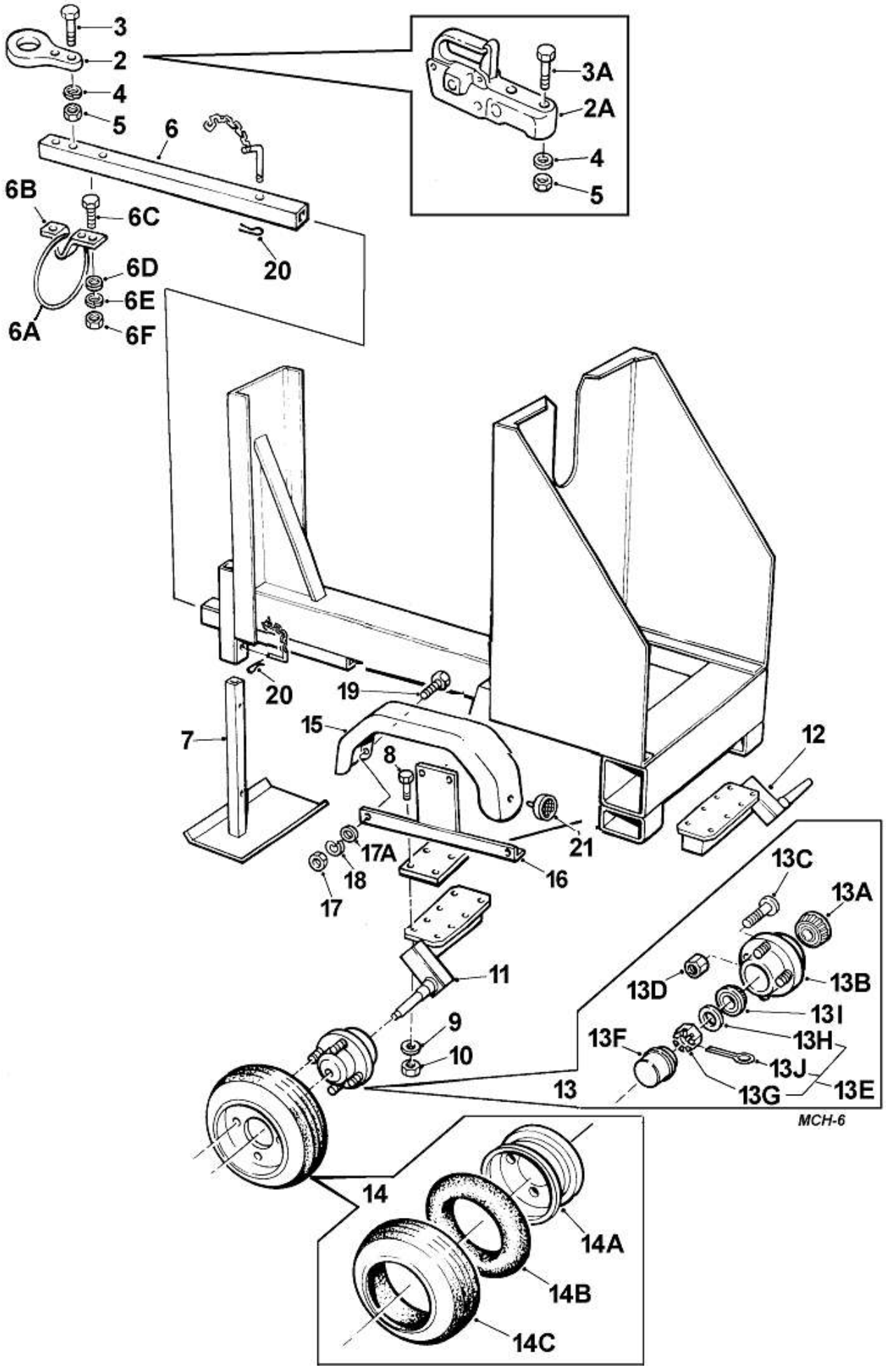
Item	Part no	Serial no	Description	Qty
5	513287000		TOP PLATE, engine housing	1
9	513286800		LID, engine housing	1
10	513248700	/05810	GUARD, belt, L48N5SJ1S	1
10A	513371400	05811/	GUARD, belt, L48V5VSJ1	1
12	513205300		STOP, rubber	1
16	513270300		PLATE, closing	1
22	241859000		PLUG, polythene	1
25	11S04E		SCREW, set	2
26	7S04		NUT	2
26A	555170000		SPACER	2
26B	513340800		SPACER	2
27	513287200		STAY, housing lid	1
28	267S06		WASHER, flat	2
29	66S03CC		SCREW, set	4
30	104S03		NUT	4
35	41S05		WASHER, spring	10
36	11S02A		SCREW, set	2
36A	66S03CC		SCREW, set	6
37	7S02		NUT	4
37A	104S03		NUT	6
38	17S03		WASHER, spring	4
40	52S02C		SCREW, c'sunk socket head	2
41	11S02A		SCREW,set	2
42	267S04		WASHER, flat	2
43	61S02		NUT, Binx, self-locking	2
46	6S02E		BOLT, *obsolete use*	1
46	8S03E		BOLT,	1
48	87S02		NUT, binx, *obsolete use*	2
48	61S03		NUT, binx,	2
70	513151800		BRACKET, trunnion	1
71	104S03		NUT	6
72	41S05		WASHER, spring	6
75	66S03CC		SCREW, set	6
80	513362600		PLATE	1
81	11S02C		SCREW, set	2
82	61S02		NUT, Binx	2

100T & 150T Mixers

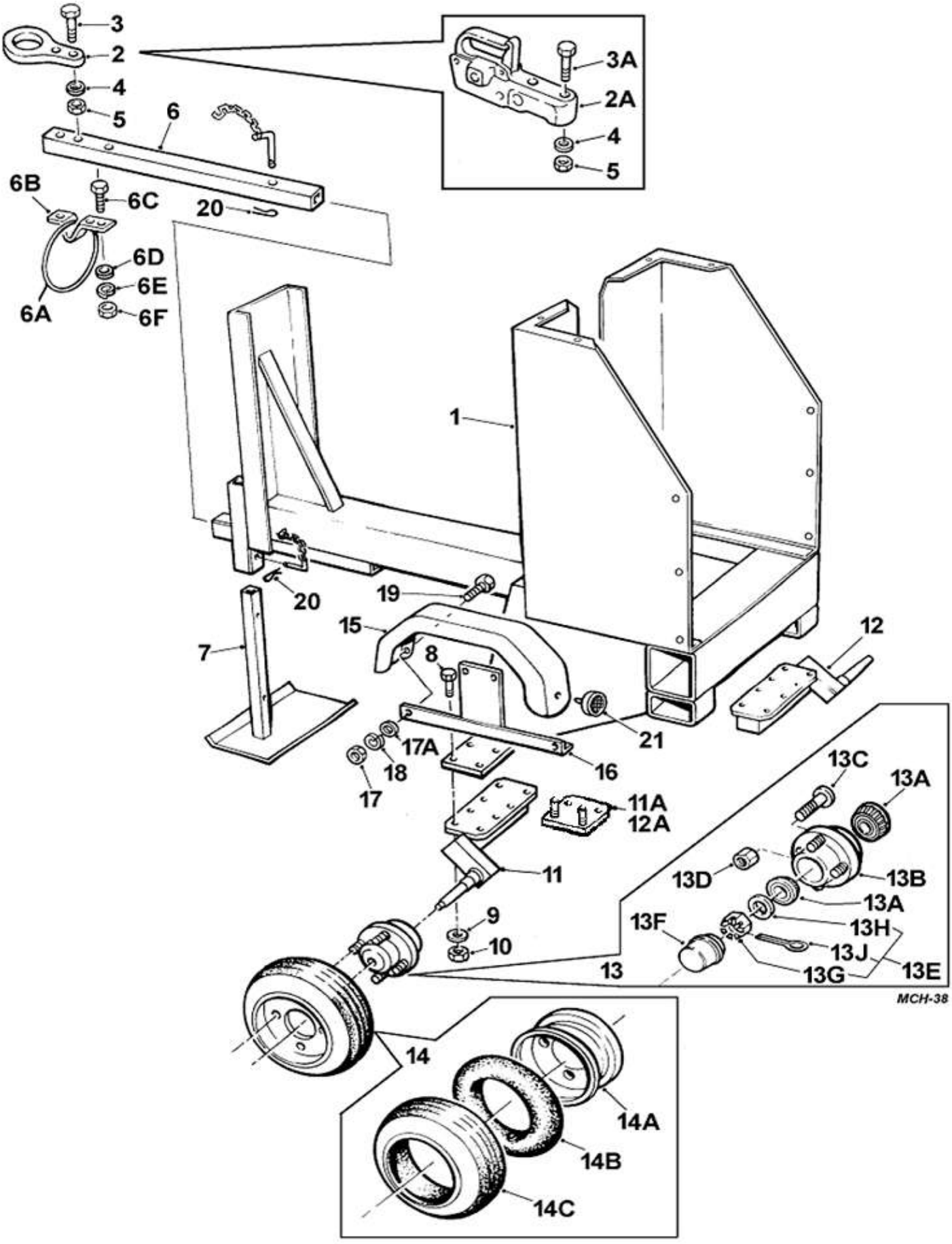


Item	Part no	Date	Description	Qty
-	513342200		MAINFRAME, assembly, **100T**	1
-	513342300		MAINFRAME, assembly, **150T**	1
1	513344200		MAINFRAME, **100T**	1
1	513344300		MAINFRAME, **150T**	1
2	513344000		EYE, towing	1
2A	513364700		COUPLING, towing	1
3	8S04E		BOLT	2
3A	8S04L		BOLT	2
4	V2004220		WASHER, flat, special	2
5	59S03		NUT	2
6	513343800		ARM, towing, adjustable	1
6A	V2004765		CABLE, breakaway, towbar	1
6B	V2004765A		SUPPORT, towbar	1
6C	11S04C		SCREW, set	3
6D	267S06		WASHER, flat	3
6E	17S05		WASHER, spring	3
6F	7S04		NUT	3
7	513343900		LEG, adjustable	1
8	8S03B		BOLT	16
9	267S05		WASHER, flat	16
10	61S03		NUT, locking	16
11	475130300		# SUSPENSION UNIT, L.H.	2
12	475130400		# SUSPENSION UNIT, R.H.	2
13	475130200		# HUB, wheel, assembly	2
13A	V600149		KIT, bearing	2
13B	V600150		HUB	1
13C	V600151		$ KIT, stud, imperial 3/8" UNF	set of 4
13C	V603612		$ KIT, stud, metric M10 fine	set of 4
13D	V600152		$ KIT, nut, imperial 3/8" UNF	set of 4
13D	V603611		$ KIT, nut, metric M10 fine	set of 4
			$ *When ordering state whether "Metric" or "Imperial"*	
13E	V600153		KIT, fastening	1
13F	V600154		CAP	1
13G	216S08		NUT, "metric"	1
13G	92S07		NUT, "imperial"	1
13H	10S05		WASHER	1
13I	475117006		BEARING	1
13J	44S03C		PIN, split	1
14	475117021		# WHEEL, assembly	2
14A	V600155		RIM, wheel	1
14B	475117008		TUBE, inner	1
14C	475117007		TYRE	1

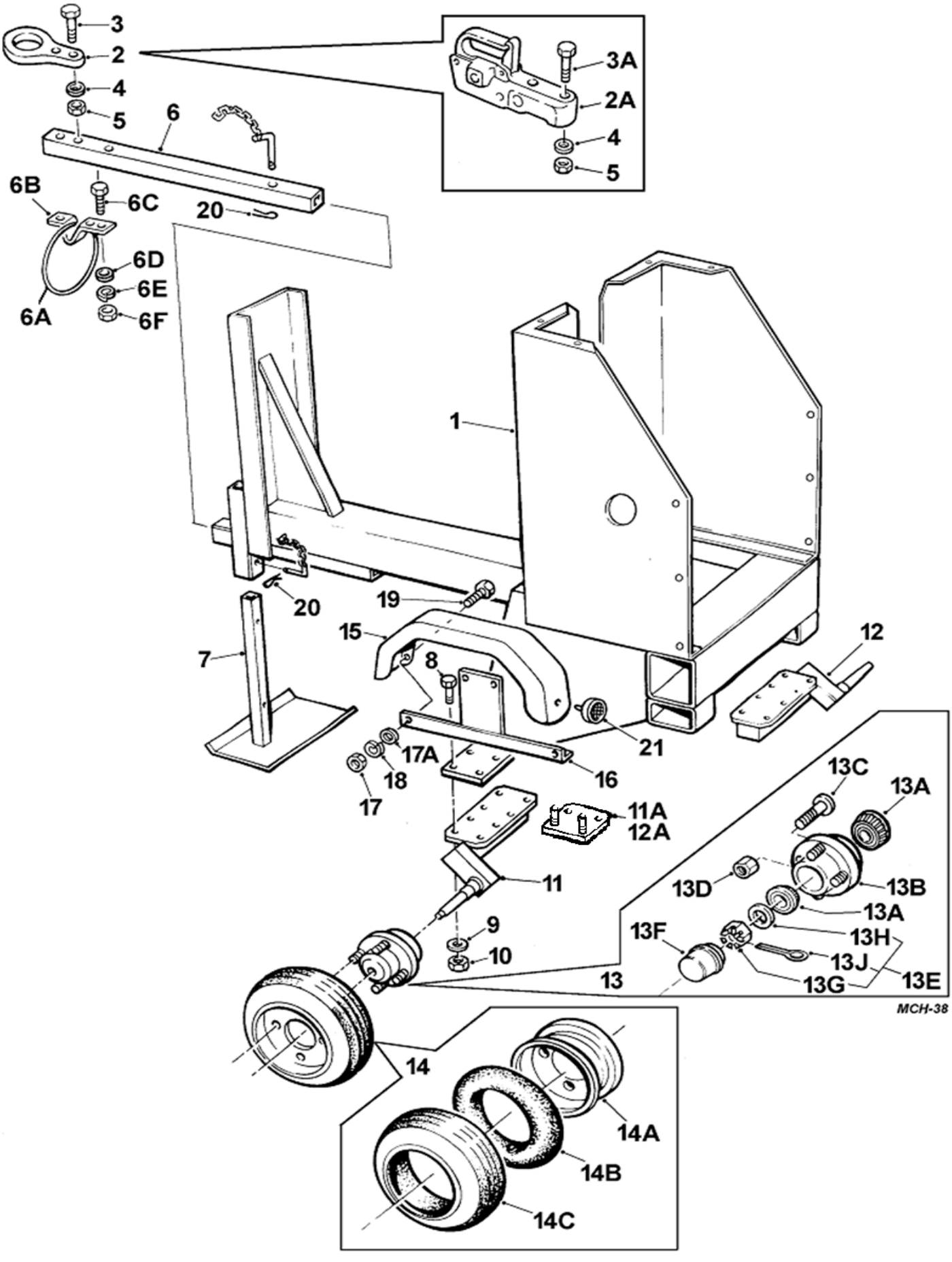
 # Items 11, 12, 13, & 14 are supplied as part of kit suspension. Part number 513343700


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Item	Part no	Serial no	Description	Qty
15	513167900		MUDGUARD	2
16	513345700		BRACKET, mudguard	2
17	104S03		NUT	8
17A	V2004220		WASHER, flat	8
18	41S05		WASHER, spring	8
19	200S03E		SCREW, round head	8
20	902S02		PIN, lynch	2
21	386102000		REFLECTOR, red, non triangular, rear of mudguard, not EU from serial nos below	2
	Following parts are not illustrated			
	From serial nos 100T-09456, 150T-05103			
22	386103000		REFLECTOR, white, non triangular front of mudguard	2
22A	513369300S		BRACKET, reflector, white, straight	2
22B	11S01A		SCREW, set	4
22C	267S03		WASHER, flat	6
22D	59S13		NUT, nyloc	4
23	386104000		REFLECTOR, amber, non triangular top of mudguard	2
23A	513369300F		BRACKET, reflector, amber, folded	2
23B	11S01A		SCREW, set	4
23C	267S03		WASHER, flat	6
23D	59S13		NUT, nyloc	4
24	V2006349		BOARD, lighting	1
24A	513369700		BUSH, flanged, plastic	4
25	513369600		PLATE, lighting board mounting	1
25A	8S04F		BOLT, plate retaining	2
25B	V2004220		WASHER, special	4
25C	59S03		NUT, nyloc	2
26	V2006351		NUT, winged	2
27	267S06		WASHER, flat	2
	From serial nos 100T-11752, 150T-05813			
28	513371700		PLATE, vent	2
29	11S02A		SCREW, set	8
30	17S03		WASHER, spring	8


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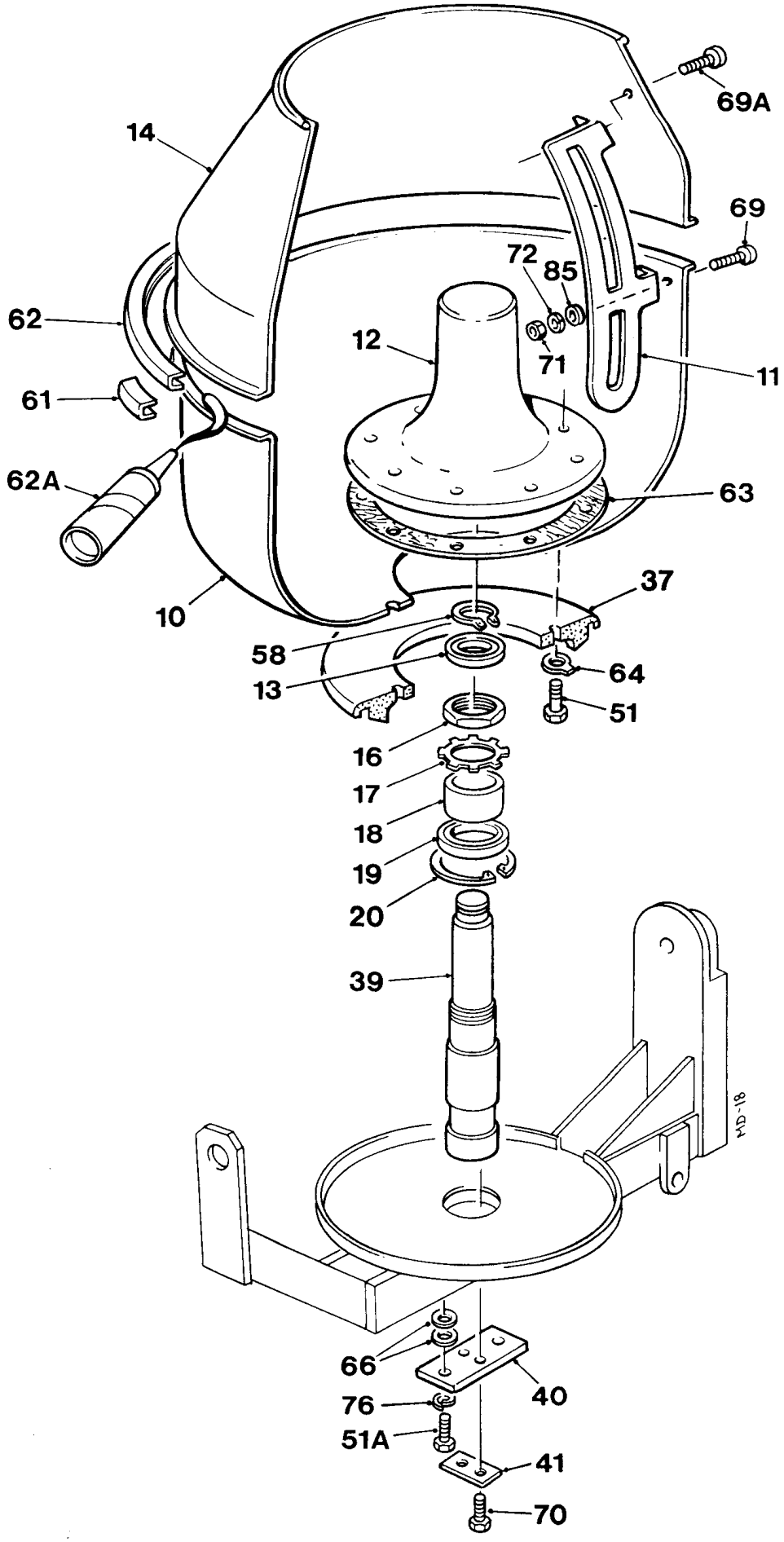
Item	Part no	Serial no	Description	Qty
.....	513345100	02184 /	MAINFRAME, assembly	
1	513360200		MAINFRAME, **175T FT**	1
2	513344000		EYE, towing	1
2A	513364700	Nov-03 /	COUPLING, towing	1
3	8S04E		BOLT	2
3A	8S04L	Nov-03 /	BOLT	2
4	V2004220		WASHER, flat, special	2
5	59S03		NUT	2
6	513343800		ARM, towing, adjustable	1
6A	V2004765		CABLE, breakaway, towbar	1
6B	V2004765A		SUPPORT, towbar	1
6C	11S04C		SCREW, set	3
6D	267S06		WASHER, flat	3
6E	17S05		WASHER, spring	3
6F	7S04		NUT	3
7	513343900		LEG, adjustable	1
8	11S05E		SCREW, set	16
8A	11S05F	05250/	SCREW, set, *use with 11A & 12A*	4
9	267S07		WASHER, flat	16
10	61S05		NUT, locking	16
11	475130500		SUSPENSION UNIT, L.H.	2
	Peak Dynamic Suspension units with a longer radius arm introduced from S/No 05250. If replacing earlier units with Peak they must be replaced in pairs			
11A	513370200	05250/	BRACKET, mudguard LH (PEAK SUS)	1
11B	59S04	05250/	NUT, nyloc	2
11C	267S07	05250/	WASHER, flat	2
12	475130600		SUSPENSION UNIT, R.H.	2
	Peak Dynamic Suspension units with a longer radius arm introduced from S/No 05250. If replacing earlier units with Peak they must be replaced in pairs			
12A	513370100	05250/	BRACKET, mudguard RH (PEAK SUS)	1
12B	59S04	05250/	NUT, nyloc	2
12C	267S07	05250/	WASHER, flat	2
13	475130800		HUB, wheel, assembly	2
13A	V602718		KIT, bearing	2
13B	V602719		HUB	1
13C	V602721		KIT, stud	4
13D	V602720		KIT, wheel nut	4
13E	V600153		KIT, fastening	1
13F	V602722		CAP	1
13G	216S08		NUT, "metric"	1
13G	92S07		NUT, "imperial"	1
13H	10S05		WASHER	1
13J	44S03C		PIN, split	1


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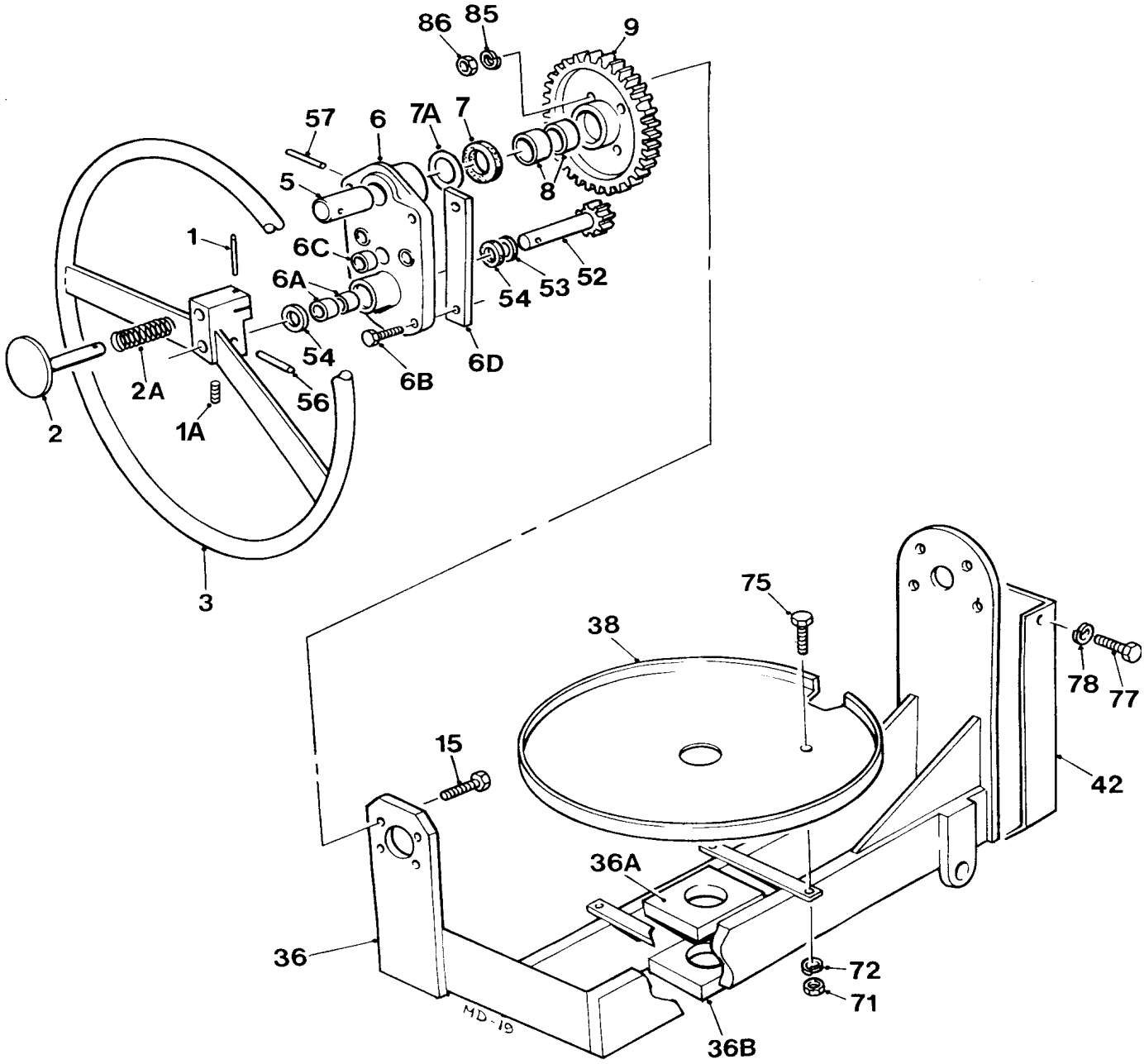
Item	Part no	Serial no	Description	Qty
13H	10S05		WASHER	1
13J	44S03C		PIN, split	1
14	475130700		WHEEL, assembly, 10"	2
14A	V602717		RIM, wheel, 10"	1
14B	475123001		TUBE, inner	1
14C	475123002		TYRE, 10"	1
15	513361000		MUDGUARD, plastic	2
16	513361100		BRACKET, mudguard	2
17	104S03		NUT	8
17A	V2004220		WASHER, "Special"	8
18	41S05		WASHER, spring	8
19	200S03E		SCREW, round head	8
20	902S02		PIN, lynch	2
21	386102000		REFLECTOR, red, non triangular rear of mudguard	2
	Following parts are not illustrated			
21A	386103000	05101/	REFLECTOR, white, non triangular front of mudguard	2
21B	11S01A	05101/	SCREW, set, reflector mounting	2
21C	267S03	05101/	WASHER, flat	2
21D	59S13	05101/	NUT, nyloc	2
22	V2006349	05101/	BOARD, lighting	1
22A	513369700	05101/	BUSH, flanged, plastic	4
23	513369600	05101/	PLATE, lighting board mounting	1
23A	8S04F	05101/	BOLT, plate retaining	2
23B	V2004220	05101/	WASHER, special	4
23C	59S03	05101/	NUT, nyloc	2
23D	V2006351	05101/	NUT, winged	2
23E	267S06	05101/	WASHER, flat	2

The mudguard, item no 15, part no 513361000, is normally supplied fitted with a rectangular amber side reflector, should the mudguard not be supplied with the integral reflectors the following parts may be fitted

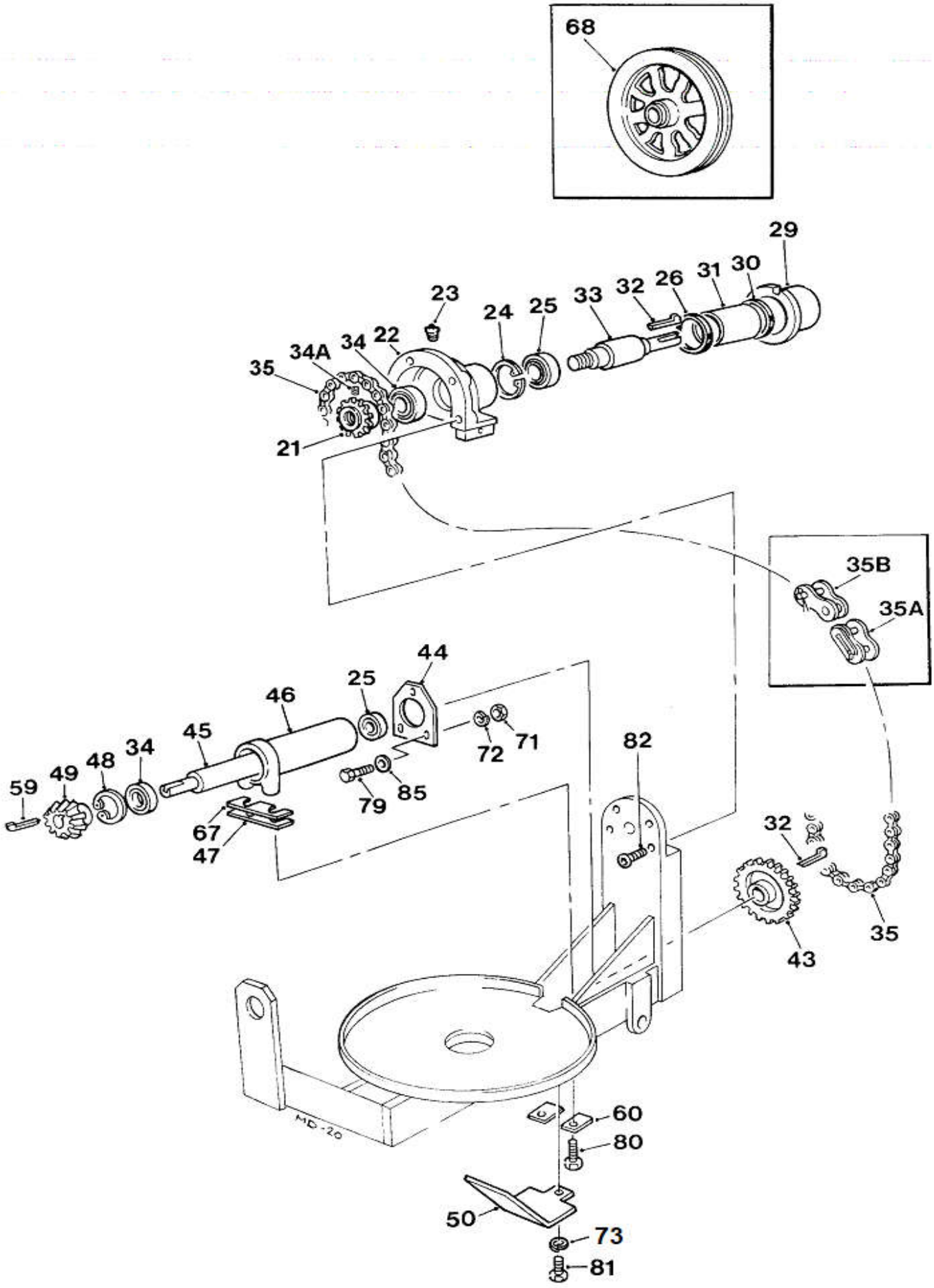
24	386104000	05101/	REFLECTOR, amber, non triangular top of mudguard	2
24A	513369300F	05101/	BRACKET, folded, amber reflector	2
24B	11S01A	05101/	SCREW, set	6
24C	267S03	05101/	WASHER, flat	10
24D	59S13	05101/	NUT, nyloc	6
		05811/		
25	513371700		PLATE, vent	2
26	11S02A		SCREW, set	8
27	17S03		WASHER, spring	8


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Item	Part no	Serial no	Description	Qty
10	513152901		BASE, drum, **100T**	1
10	513161001		BASE, drum, **150T** & **175T**	1
11	513151100		BLADE, **100T**	2
11	513157500		BLADE, **150T** & **175**	2
12	513149600		DRUM CENTRE	1
13	88S07D		BEARING	1
14	513152902		CONE, drum, **100T**	1
14	513161002		CONE, drum, **150T**	1
14	513203202		CONE, drum, **175T**	1
16	513208800		NUT, locking	1
17	22096210		WASHER, locking	1
18	513152300		DISTANCE PIECE, drum shaft	1
19	88S20D		BEARING	1
20	132390000		CIRCLIP	1
37	513150100		BEVEL GEAR, drum	1
39	513152200		SHAFT, drum	1
40	513152000		FLANGE, drum shaft	1
41	513152100		WASHER, tab	1
51	66S05D		SCREW	8
51A	28S05G		SCREW	2
58	142330000		CIRCLIP	1
61	513203900		BRIDGE PIECE, **100T**	1
61	513203800		BRIDGE PIECE, **150T** & **175T**	1
62	513203600		CLIP, drum, **100T**	1
62	513203100		CLIP, drum, **150T** & **175T**	1
62A	V2000772		SEALANT	tube 1
63	513202800		GASKET	1
64	513199800		WASHER, tab	6
66	10S04		WASHER, flat	AR
69A	200S03E		SCREW, blade upper, **100T**	4
69	200S03G		SCREW, blade lower, **100T**	4
69A	200S03G		SCREW, blade upper, **150T** & **175T**	4
69	200S03H		SCREW, blade lower, **150T** & **175T**	4
70	28S05G		SCREW	2
71	104S03		NUT	8
72	41S05		WASHER, spring	8
76	41S07		WASHER, spring	2
85	10S03		WASHER, flat	13

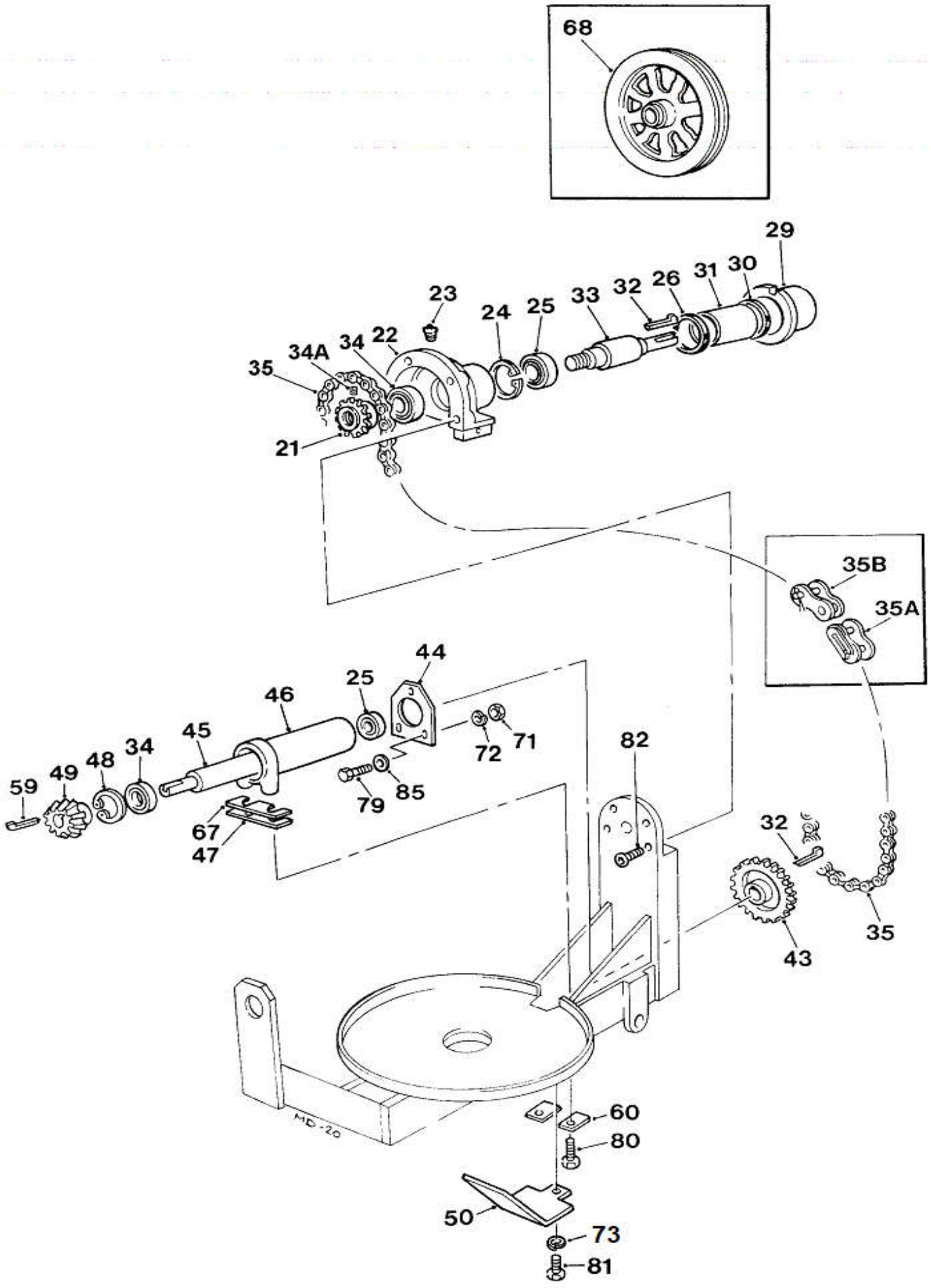

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Item	Part no	Serial no	Description	Qty
1	54S01A		PIN, spirol	1
1A	57S06F1		SCREW, grub,	1
2	513194400		PLUNGER, locking	1
2A	513345300		SPRING, plunger	1
3	513345400		HANDWHEEL	1
5	513151000		STUB, trunnion journal	1
-	513149400		BRACKET, tilting, assembly	1
6	-		BRACKET, tilting (order assembly)	1
6A	112821000		BUSH	2
6B	103S04C		SCREW, socket head cap	4
6C	114625320		BUSH	3
6D	513212300		RETAINING BAR, tilting bracket	2
7	225520280		FELT SEAL	1
7A	10S09		WASHER, flat	AR
8	112820000		BUSH	2
9	513149300		GEAR, tilting	1
15	6S03E		BOLT	4
36	513211400		TRUNNION, **100T**	1
36	513211500		TRUNNION, **150T** & **175T**	1
36A	513212000		PLATE, upper (welded)	1
36B	513212000		PLATE, lower (welded)	1
38	513153000		GUARD, bevel gear	1
42	513152700		GUARD, chain, **100T**	1
42	513203300		GUARD, chain, **150T** & **175T**	1
52	513345600		PINION, tilting	1
53	10S18		WASHER, flat	1
54	225514220		WASHER, felt	2
56	513374900		PIN, grooved	1
57	55S07Q		PIN, spirol	1
71	104S03		NUT	4
72	41S05		WASHER, spring	4
75	66S03CC		SCREW, set	4
77	66S02CC		SCREW, set	2
78	41S04		WASHER, spring	2
85	10S03		WASHER, flat	4
86	107S14		NUT, ‘Nyloc’ self-locking	4

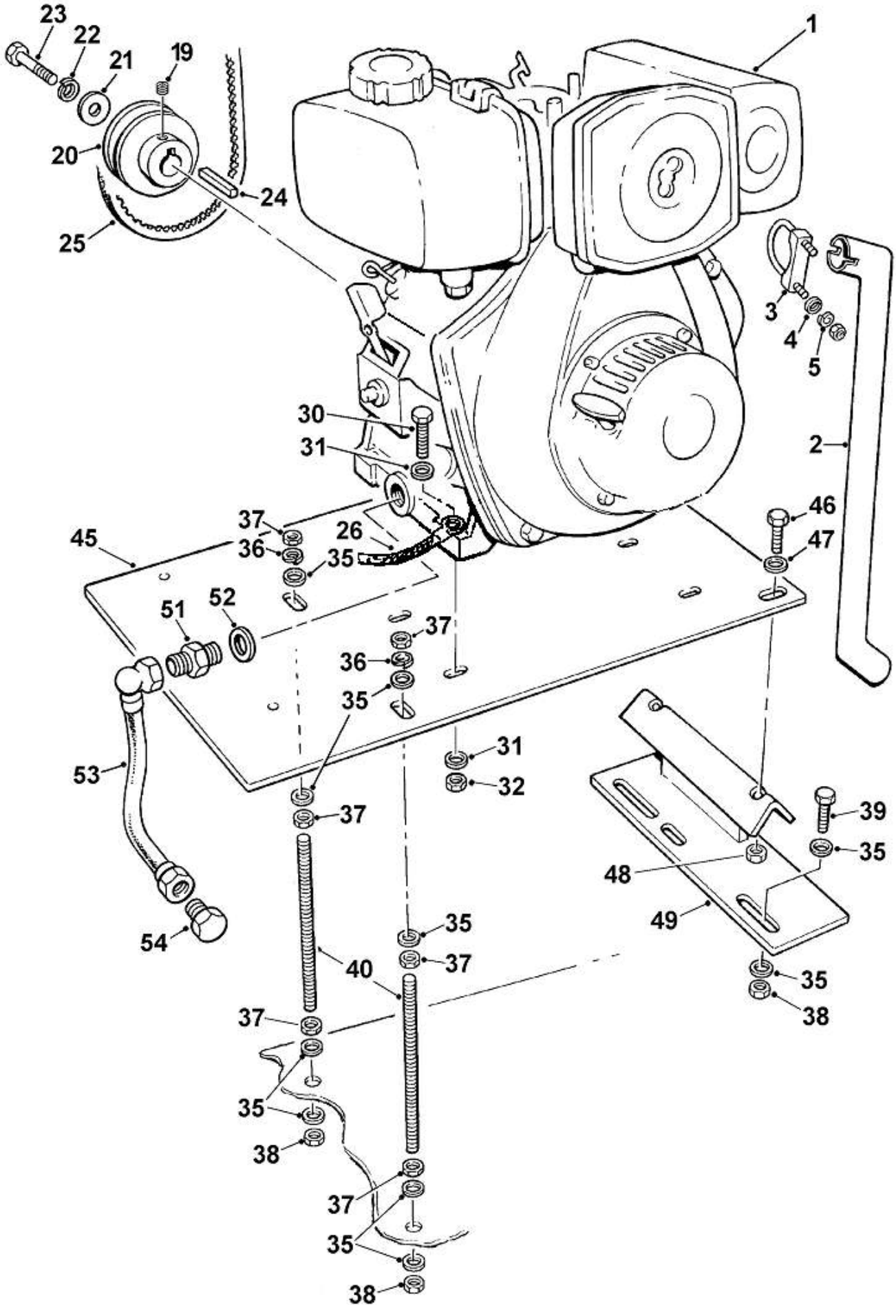

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MD-20

Item	Part no	Serial no	Description	Qty
21	513151600		SPROCKET, countershaft, L.H. thread	1
22	513149700		JOURNAL, trunnion	1
23	315803100		PLUG, lubricating	1
24	132352000		CIRCLIP	1
25	88S15D		BEARING	2
26	49S41		O' RING, 79mm I/D	1
29	513150400		BEARING, trunnion	1
30	49S42		O' RING, 75.5mm I/D	1
31	513153100		BEARING	1
32	300204140		KEY, gib head	2
33	513151700		COUNTERSHAFT, L.H. thread	1
34	88S05D		BEARING	2
34A	57S04D2		SCREW, grub	1
35	134105056		CHAIN, **100T**	1
35	134105060		CHAIN, **150T** & **175T**	1
35A	134105002		LINK, connecting	
35B	134105001		LINK, half	AR
43	513150300		SPROCKET, bevel pinion shaft	1
44	513298900		PLATE, adjusting	1
45	513152500		SHAFT, bevel pinion, **100T**	1
45	513158700		SHAFT, bevel pinion, **150T** & **175T**	1
46	513149800		HOUSING, pinion shaft, **100T**	1
46	513160700		HOUSING, pinion shaft, **150T** & **175T**	1
47	513152400		PACKING PIECE *(set of 4)*	sets 2
48	132362000		CIRCLIP	1
49	513278400		BEVEL PINION	1
50	513211800		GUARD, bevel pinion	1
59	300204140		KEY, gib head	1
60	513211900		WASHER, tab	2
67	513211700		PACKER	1
68	513290700		PULLEY, 'V'	1
71	104S03		NUT	2

100T, 150T & 175T Mixers

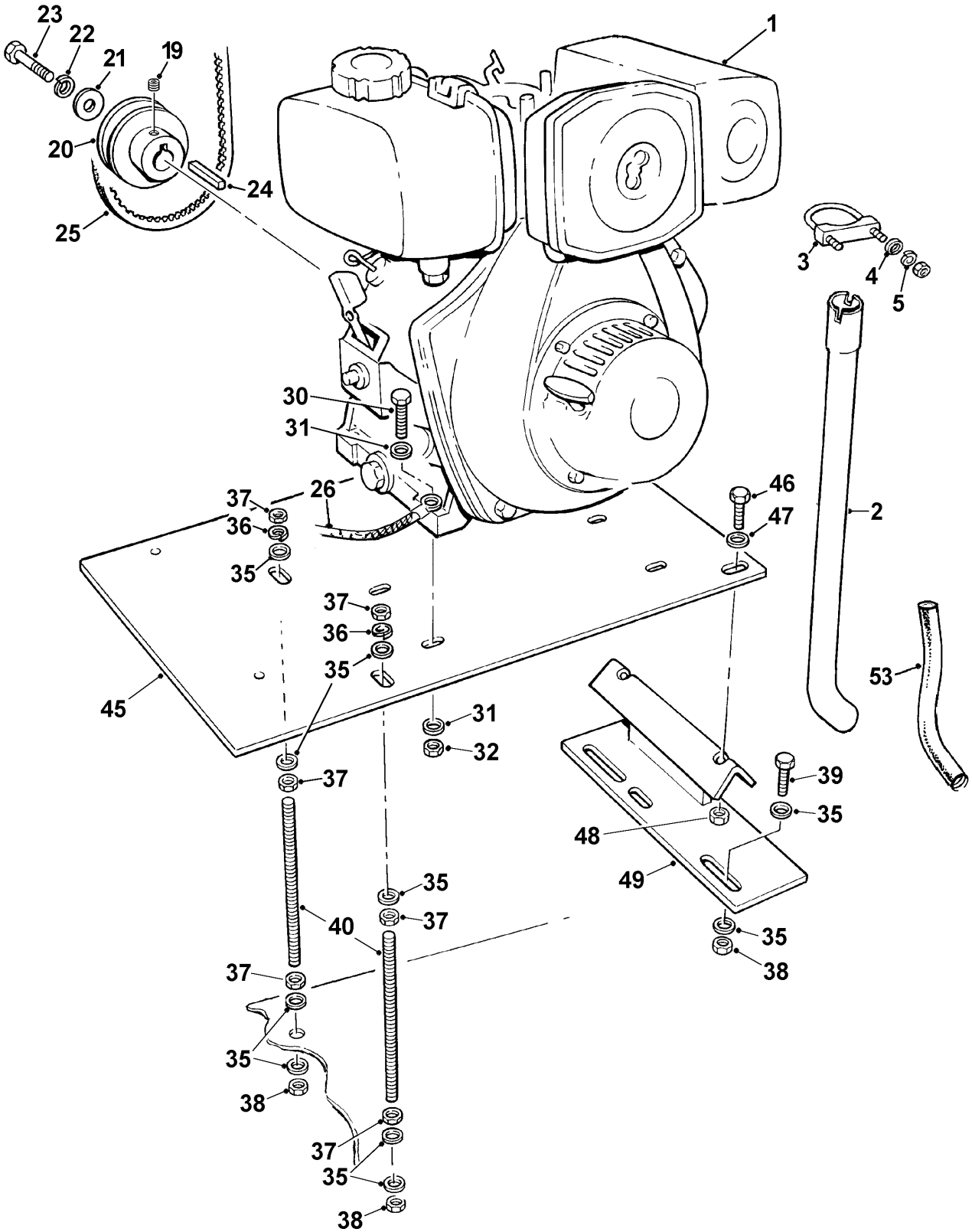


Item	Part no	Serial no	Description	Qty
72	41S05		WASHER, spring	2
73	41S05	**100T** /12474 **150T/175T** /06400	WASHER, spring, imperial	1
73	17S05	12475/ **100T** 06401/ **150T/175T**	WASHER,spring, metric	1
79	66S03C		SCREW, set	2
80	66S03D		SCREW, set	2
81	66S03AA	**100T** /12474 **150T/175T** /06400	SCREW, set, imperial	1
81	11S04A	12475/ **100T** 06401/ **150T/175T**	SCREW, set, metric	1
82	208S03F		SCREW, c/sunk socket	4
85	10S03		WASHER, flat	2


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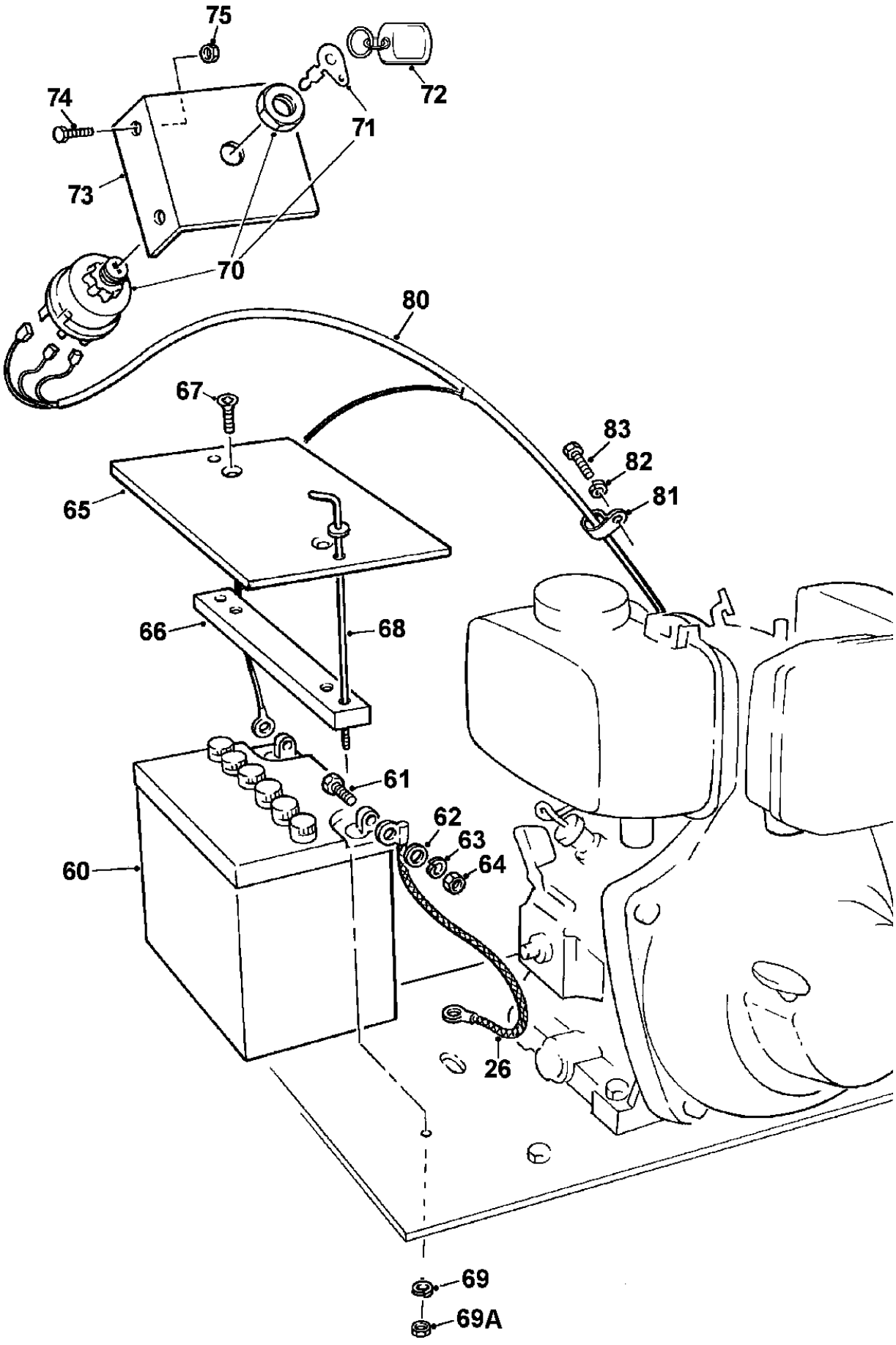
Engine & mounts

Item	Part no	Serial no	Description	Qty
	NOTE: ***For Battery, start switch & loom, see page C-6***			
1	V2005210		ENGINE, Yanmar L48N5SJ1	1
	For Stage 5 Emission Compliant Engine, L48V5VSJ1, see page C-5A			
2	513361600		PIPE, exhaust	1
3	153S02		CLAMP, exhaust	1
4	267S05		WASHER, flat	2
5	17S04		WASHER, spring	2
19	57S04D2		SCREW, grub	1
20	V2005220		PULLEY	1
21	V2004220		WASHER, 'Special'	1
22	17S04		WASHER, spring	1
23	8S03D		BOLT	1
24	305110550		KEY, parallel	1
25	397400200		BELT, 'V', **100T**	1
25	397400600		BELT, 'V', **150T** & **175T**	1
26	.....		CABLE, negative *(See page C-6)*	1
30	8S03D		BOLT	4
31	267S05		WASHER, flat	8
32	61S03		NUT, self- locking “Binx”	4
35	267S07		WASHER, flat	12
36	17S06		WASHER, spring	2
37	7S05		NUT	6
38	61S05		NUT, self- locking “Binx”	4
39	11S05D		SCREW, set	2
40	513333100		STUD	2
45	513361800		PLATE, engine mounting	1
46	8S04D		BOLT	2
47	V2004220		WASHER, flat	2
48	61S04		NUT, self- locking “Binx”	2
49	513358800		SUPPORT, bracket	1
51	325S04		ADAPTOR, male/male	1
52	298S05		SEAL, bonded	1
53	31S02LL		HOSE, hydraulic	1
54	127S03		PLUG, blanking, engine oil drain	1


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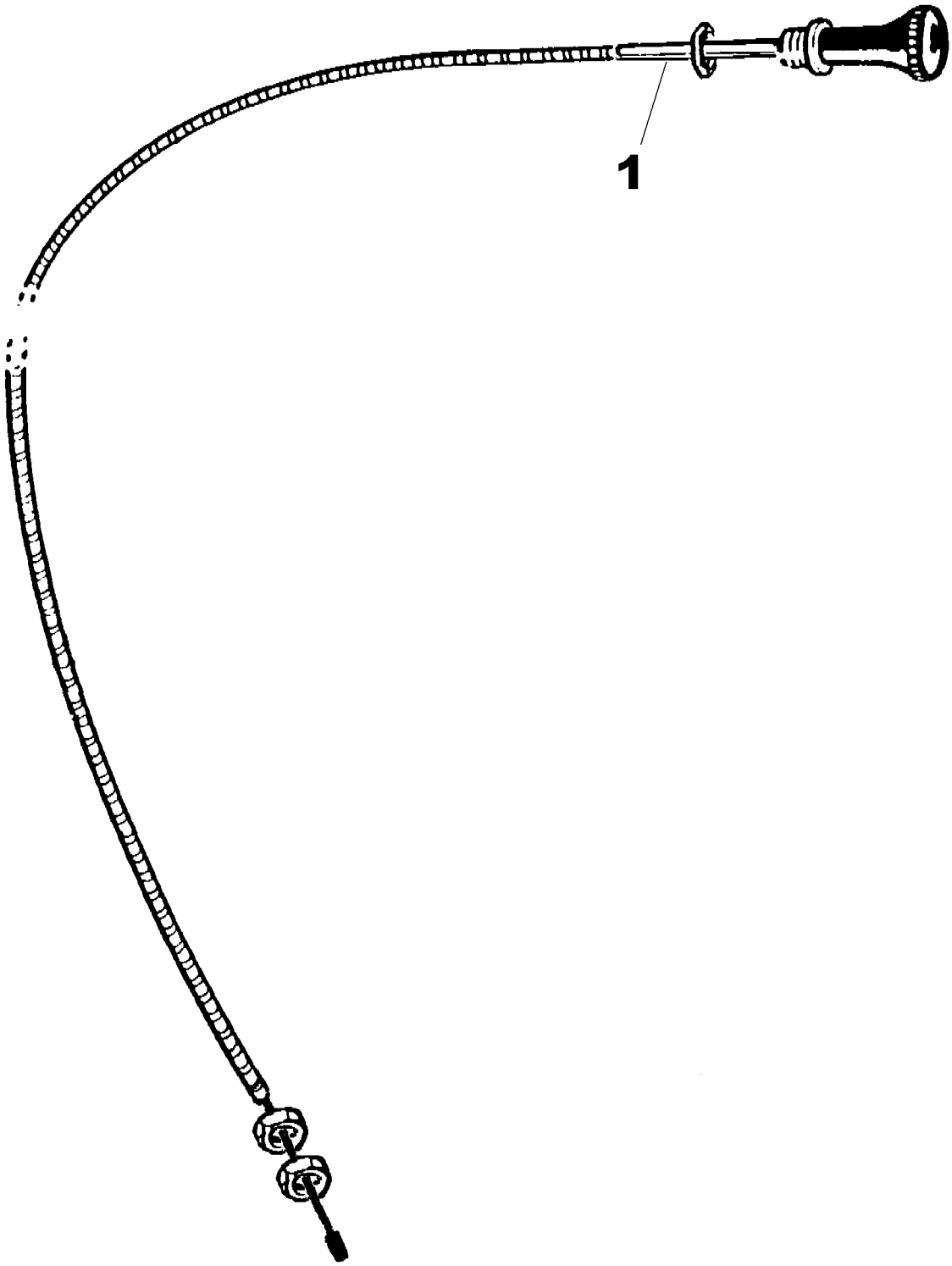
YANMAR L48V5VSJ1 (electric start) Stage 5 Compliant C - 5A
Engine & mounts

Item	Part no	Serial no	Description	Qty
	NOTE:	***For Battery, start switch & loom, see page C-6***		
		11752 /	**100T**	
		05855 /	**150T**	
		05858 /	**175T**	
1	V2006401		ENGINE, Yanmar L48V5VSJ1, Stage 5	1
2	513371300		PIPE, exhaust	1
3	153S02		CLAMP, exhaust	1
4	267S05		WASHER, flat	2
5	17S04		WASHER, spring	2
19	57S04D2		SCREW, grub	1
20	V2005220		PULLEY	1
21	V2004220		WASHER, 'Special'	1
22	17S04		WASHER, spring	1
23	8S03D		BOLT	1
24	305110550		KEY, parallel	1
25	397400200		BELT, 'V', **100T**	1
25	397400600		BELT, 'V', **150T** & **175T**	1
26	.....		CABLE, negative *(See page C-6)*	1
30	8S03D		BOLT	4
31	267S05		WASHER, flat	8
32	61S03		NUT, self- locking “Binx”	4
35	267S07		WASHER, flat	12
36	17S06		WASHER, spring	2
37	7S05		NUT	4
38	61S05		NUT, self- locking “Binx”	6
39	11S05D		SCREW, set	2
40	513333100		STUD	2
45	513361800		PLATE, engine mounting	1
46	8S04D		BOLT	2
47	V2004220		WASHER, flat	2
48	61S04		NUT, self- locking “Binx”	2
49	513358800		SUPPORT, bracket	1
51	.....		TAP, oil drain, not illustrated *(refer to engine parts manual)*	1
53	29S22		HOSE,oil drain, 450mm long	1


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Battery, start switch & loom

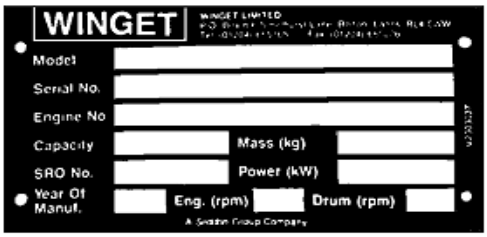
Item	Part no	Serial no	Description	Qty
		06737 /	**100T**	
		02719 /	**150T** & **175T**	
26	V2005211		CABLE, negative	1
60	109S11		BATTERY, 12 volt	1
61	11S02B		SCREW, set	2
62	267S04		WASHER, flat	2
63	17S03		WASHER, spring	2
64	7S02		NUT	2
65	513362000		COVER, battery	1
66	513361900		CLAMP, battery	1
67	52S02E		SCREW, counter sunk	2
68	513361700		ROD, battery clamp	2
69	17S03		WASHER, spring	2
69A	7S02		NUT	2
70	V2003561		SWITCH, start, c/w key	1
71	V601179		KEY	2
72	V2003540		KEY RING	1
73	513359200		BRACKET, start switch	1
74	11S03A		SCREW, set	2
75	61S03		NUT, self-locking, 'Binx'	2
80	513362200		LOOM	1
81	V2005209		CLIP, 'P'	1
82	17S04		WASHER, spring	1
83	11S03A		SCREW, set	1


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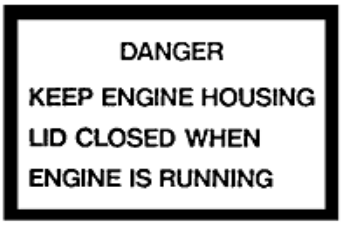
Emergency Stop Cable

Item	Part no	Serial no	Description	Qty
		11195 /	**100T**	
		05637 /	**150T**	
		05604/	**175T**	
1	513370900		CABLE, emergency stop	1
2	267S04		WASHER, flat	2
3	V2006398		TIE, Cable, panel mount	1

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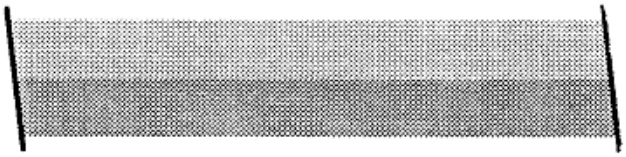
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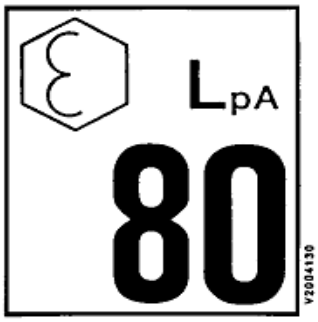
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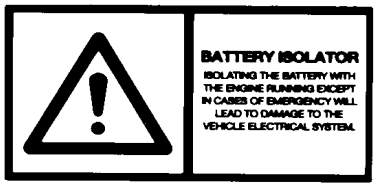
Item	Part no	Serial no	Description	Qty
				1
2	V2003037		PLATE, serial	1
—	101S05B		RIVET, pop	4
3	504600900		DECAL, “Engine housing lid closed”	1
4	504694600		DECAL, “Safety Warning”	1
8	V2003039		DECAL, “WINGET” logo,	3
9	V2003038		DECAL, stripe, 2 colour	AR
10	V2003101		DECAL, “Diesel fuel”	1
13	V2003665		DECAL, “Sling point”	1
14	V2003598		DECAL, “Britsh made”	1
15	V2004130		DECAL, “LPA 80"	1
17	V2004307		DECAL, “Electrical hazard”	1
18	V2005208		DECAL, "Engine starting procedure"	1

1 **100 T**

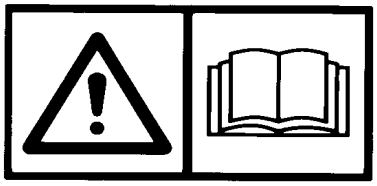
2 **150 T**

3 **175 T**

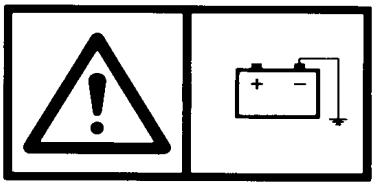
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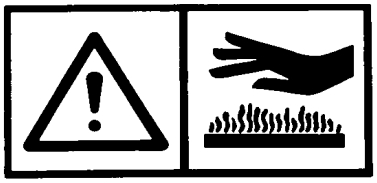
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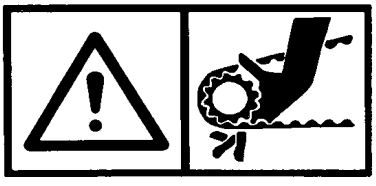
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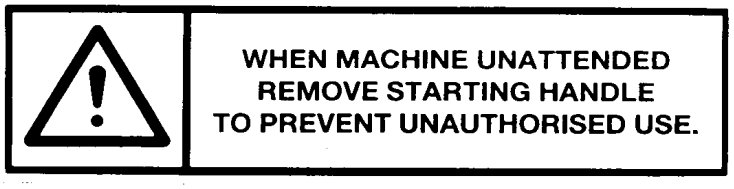
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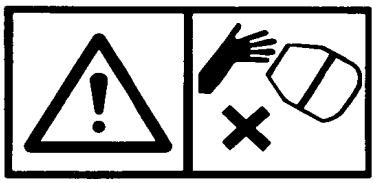
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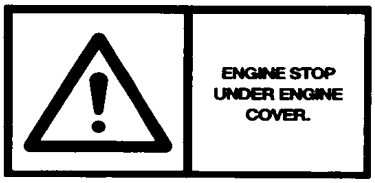
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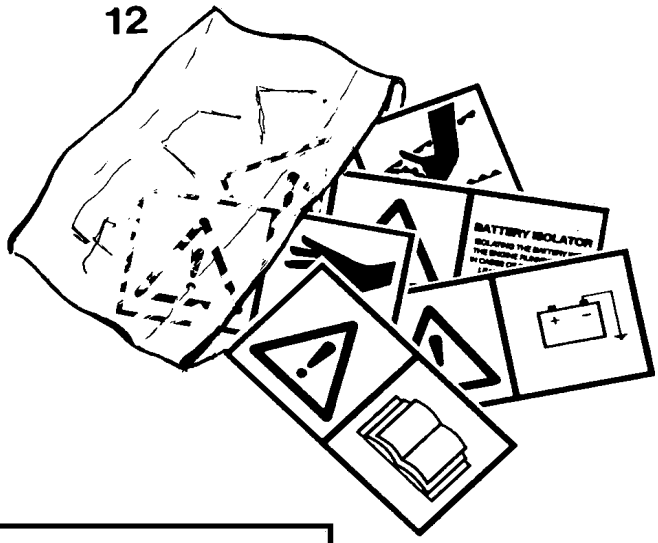
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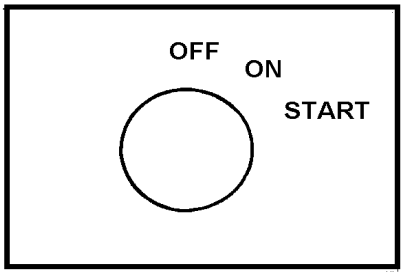
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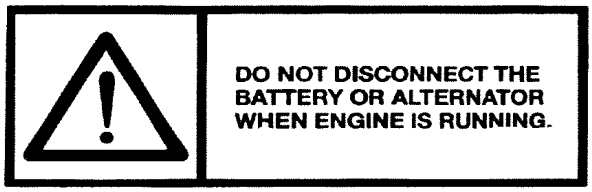
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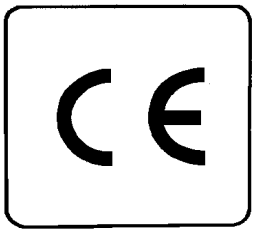
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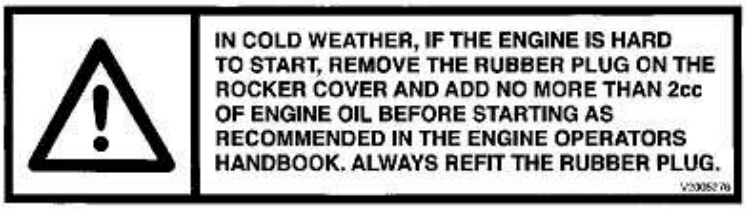


15



Item	Part no	Serial no	Description	Qty
1	V2003105		DECAL, “100T”, Black	2
2	V2003106		DECAL, “150T” Black	2
3	V2003107		DECAL, “175T” Black	2
4	V2004227		DECAL, “Battery isolator”	1
5	V2004229		DECAL, “Operators handbook	1
6	V2004235		DECAL, “Negative earth”	1
7	V2004282		DECAL, “Hot surface”	1
8	V2004281		DECAL, “Chain drive	1
9	V2004288		DECAL, “Remove start handle”	1
10	V2004289		DECAL, “Keep hands clear of drum”	1
11	V2004302		DECAL, Engine stop"	1
12	V601906		KIT, decals, 100T, 150T, 175T Each kit contains all of the decals required for one machine.	1
13	V2005218		DECAL "Key switch"	1
14	V2004796		DECAL "Do not disconnect battery"	1
15	V2004223		DECAL "CE mark"	1

1


IN COLD WEATHER, IF THE ENGINE IS HARD TO START, REMOVE THE RUBBER PLUG ON THE ROCKER COVER AND ADD NO MORE THAN 2cc OF ENGINE OIL BEFORE STARTING AS RECOMMENDED IN THE ENGINE OPERATORS HANDBOOK. ALWAYS REFIT THE RUBBER PLUG.

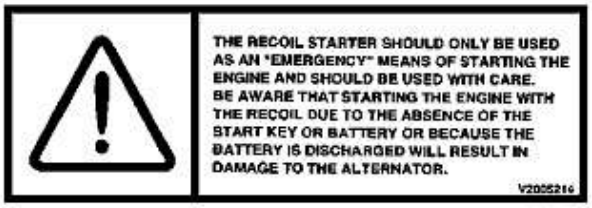
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LWA
101 dB

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EMERGENCY STOP
TO BE USED IN EMERGENCY ONLY

4


THE RECOIL STARTER SHOULD ONLY BE USED AS AN "EMERGENCY" MEANS OF STARTING THE ENGINE AND SHOULD BE USED WITH CARE. BE AWARE THAT STARTING THE ENGINE WITH THE RECOIL DUE TO THE ABSENCE OF THE START KEY OR BATTERY OR BECAUSE THE BATTERY IS DISCHARGED WILL RESULT IN DAMAGE TO THE ALTERNATOR.

9


UK
CA

5


ENGINE
STOP

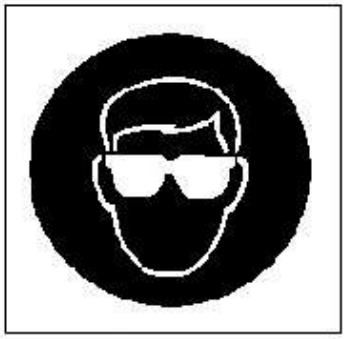
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IMPORTANT!
TO AVOID INJURY OR MACHINE DAMAGE DO NOT ENGAGE LOCKING PLUNGER WHILST HANDWHEEL IN MOTION

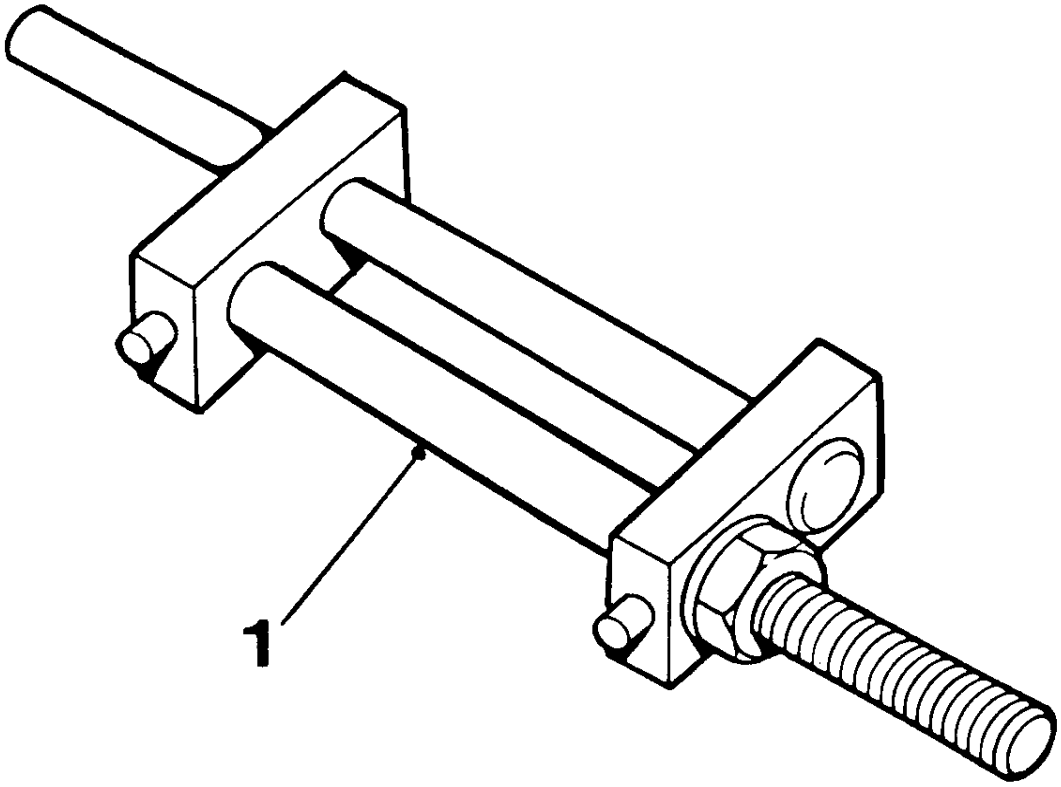
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UK
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Item	Part no	Serial no	Description	Qty
1	V2005276		DECAL, " Engine cold starting" (Not used with L48V5V Engine)	1
2	V2005311		DECAL, "LWA 101"	1
4	V2005214		DECAL, "The recoil starter"	1
5	FSE357		DECAL, "Engine stop	1
6	V2005630		DECAL, "Locking Plunger"	1
7	V2004744		DECAL, " Eye Protection"	1
8	513371100		DECAL, "Emergency stop"	1
9	V2006402		DECAL "UKCA"	1
10	V2006403		DECAL "UKNI"	1


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Item	Part no	Serial no	Description	Qty
1	513204000		CLAMP, drum clip	1

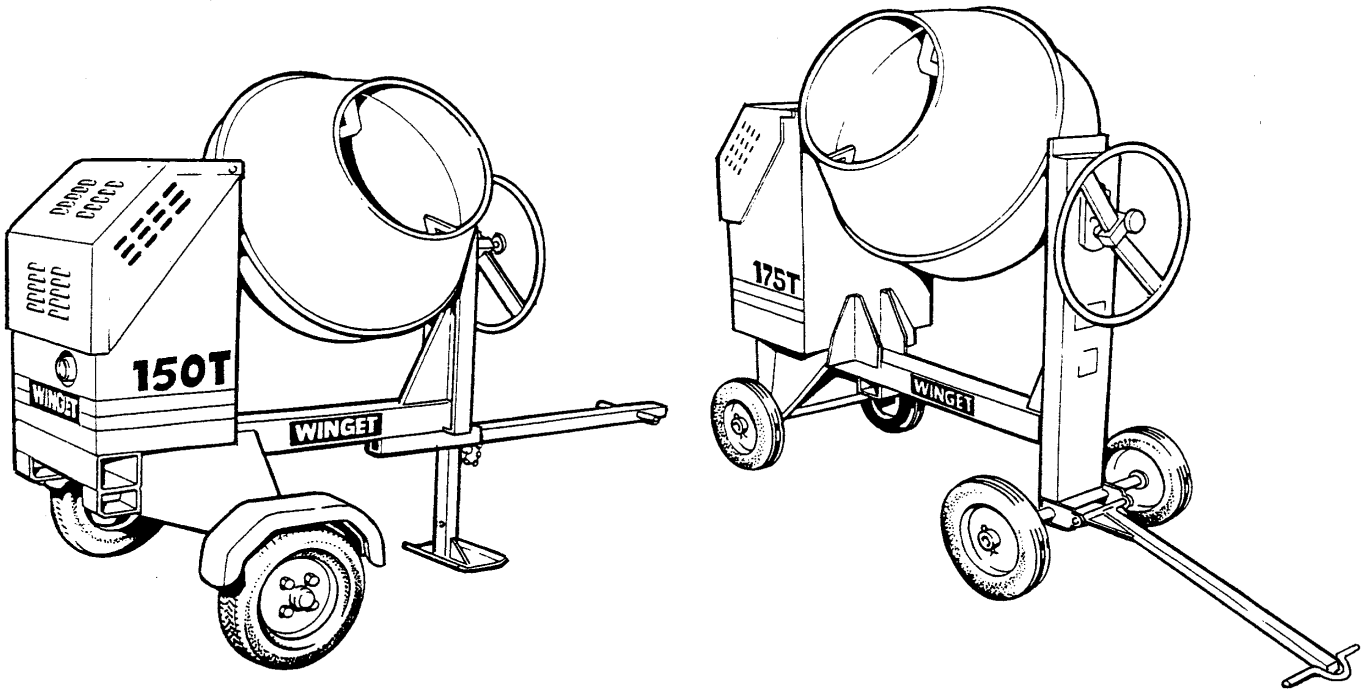
CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm

PARTS

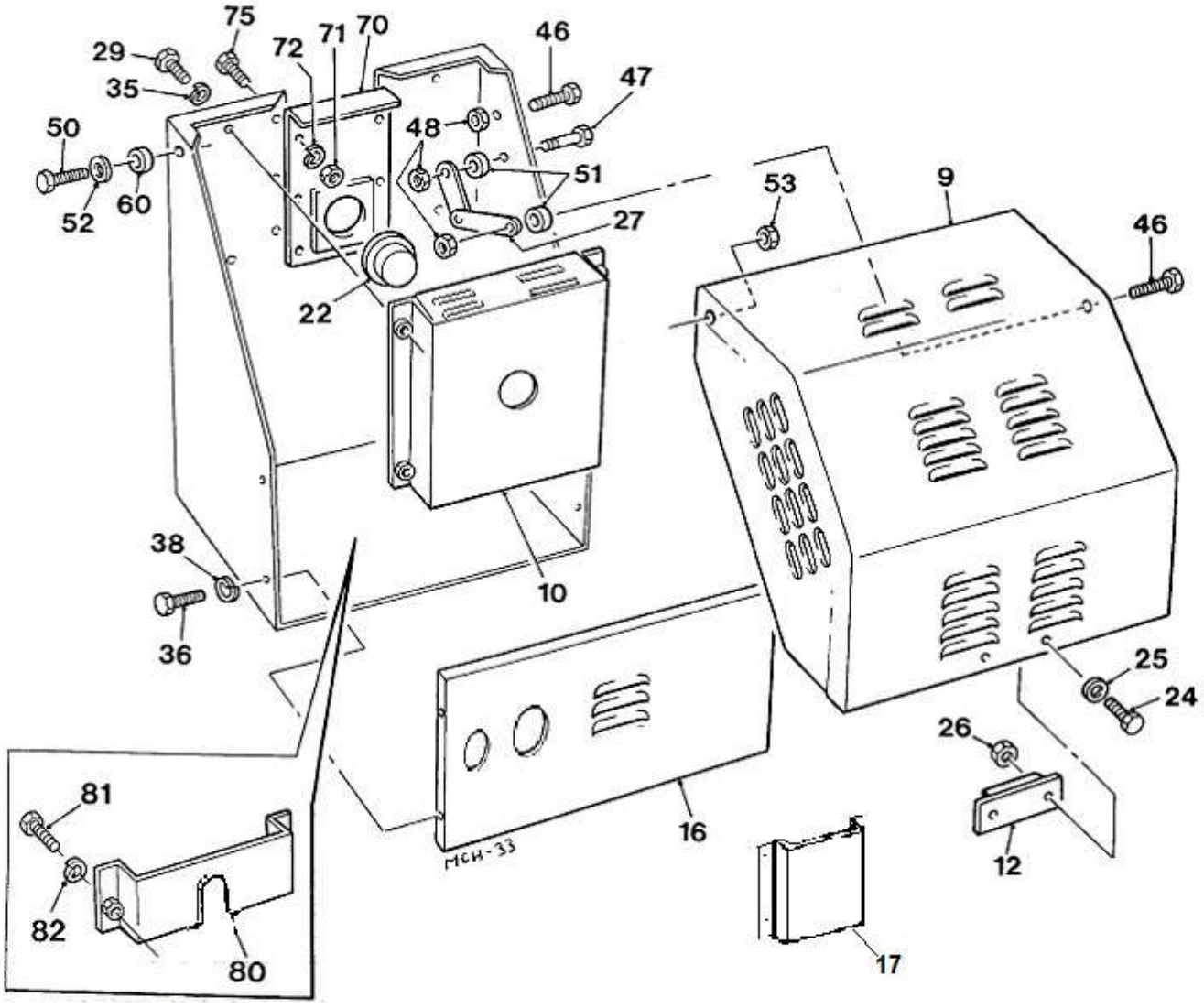
110V Mixers
100T
150T
175T



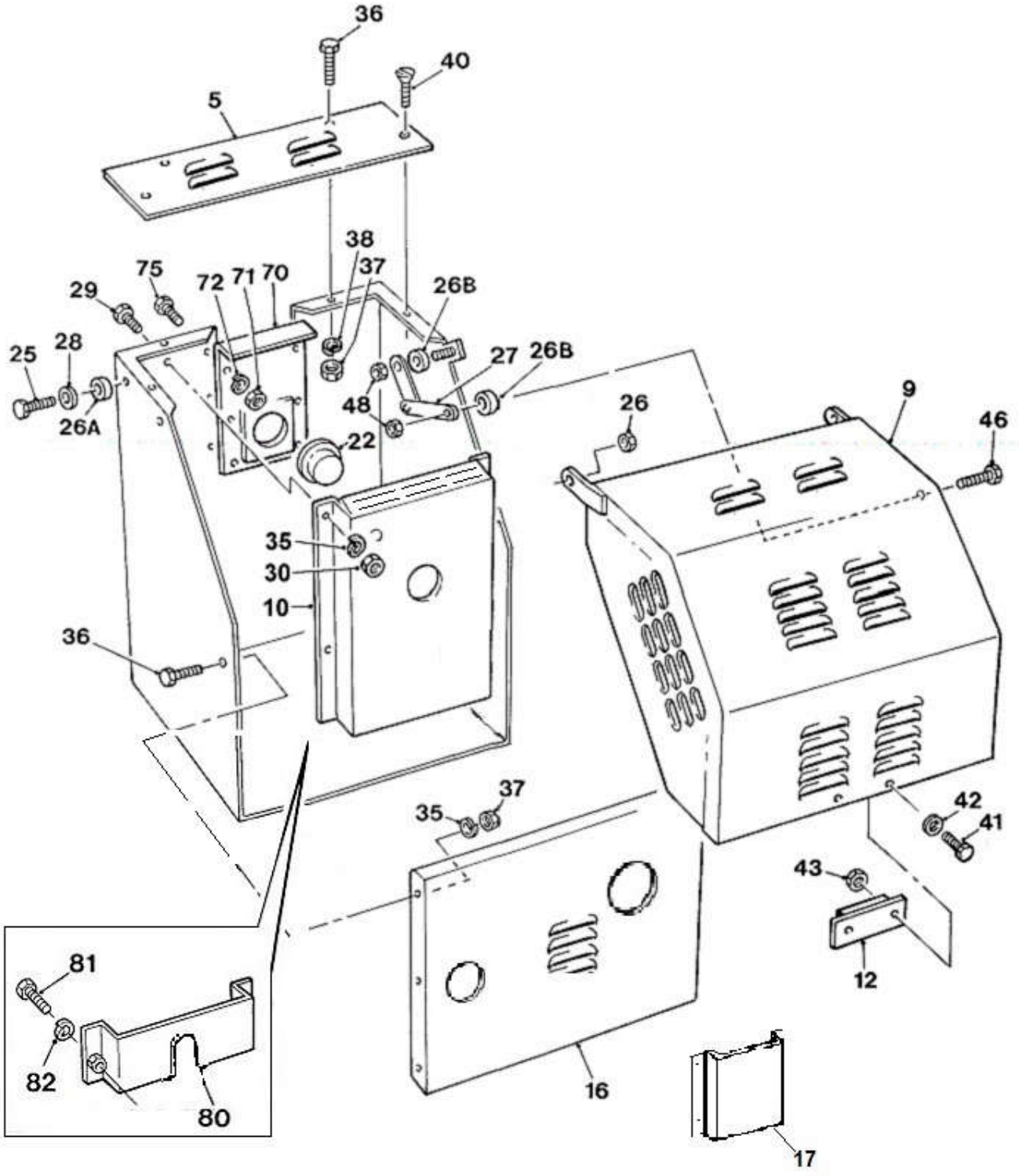
Contents

FROM SERIAL NUMBERS:- 100T -12194, 150T - 06045, 175T - 06046

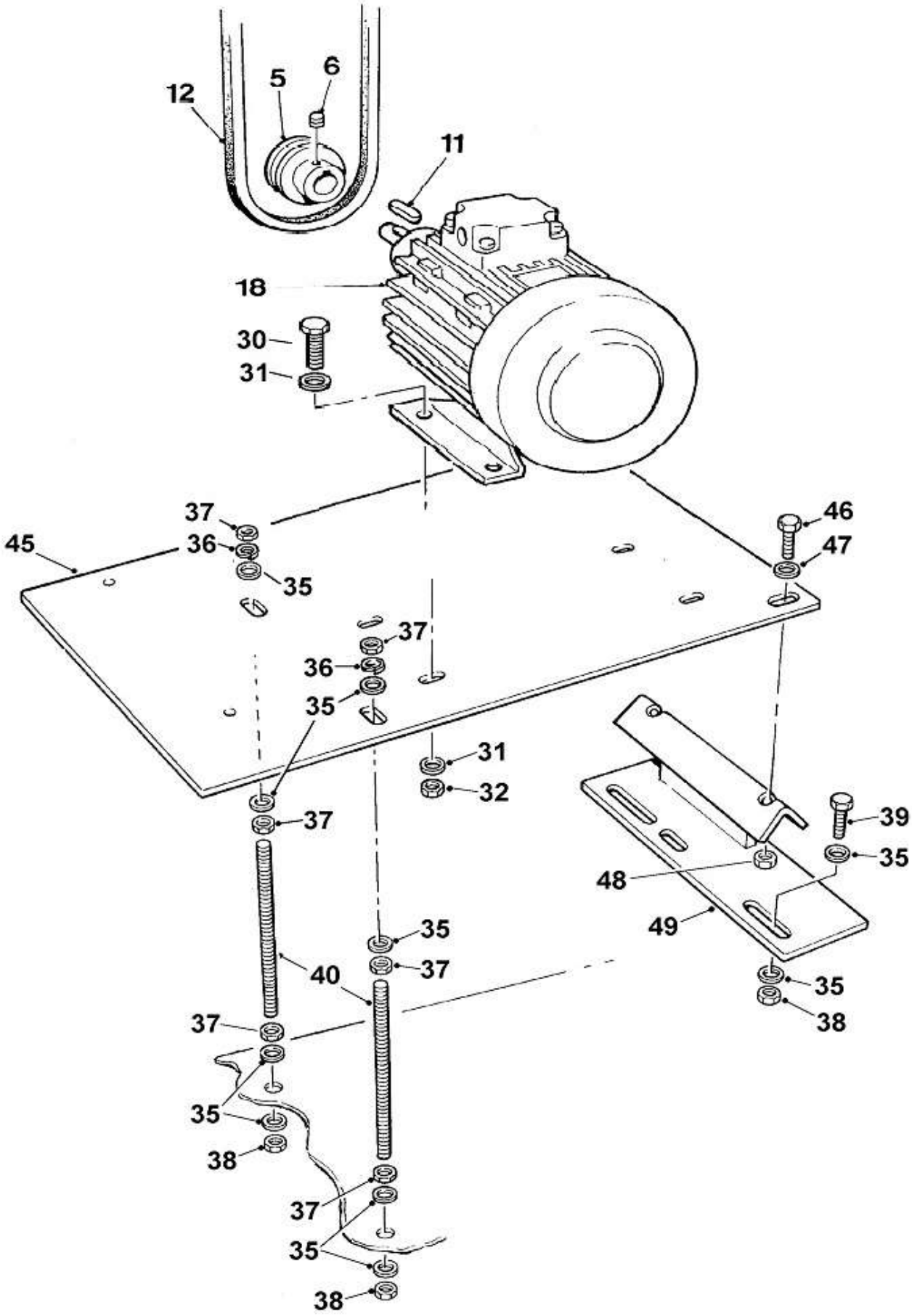
COVERS & GUARDS (100T & 150T)	A - 1B
COVERS & GUARDS (175T)	A - 2B
ELECTRIC 110V DRIVE ASSEMBLY	C-2
START SWITCHES 110V ELECTRIC DRIVE	C-3
DECALS & PLATES	D - 1
SPECIAL TOOLS	D - 3


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MCH-33

Item	Part no	Serial no	Description	Qty
9	513341300		LID, engine housing	1
10	513371800		GUARD, belt,100T	1
10	513372400		GUARD, belt, 150T	1
12	513205300		STOP, rubber	1
16	513372000		PLATE, closing, **100T**	1
16	513272500		PLATE, closing, **150T**	1
17	513372100		BOX, document, rivet on inside of item '	1
17A	101S05B		RIVET, pop	4
22	241859000		PLUG, polythene	1
24	11S02A		SCREW, set	2
25	267S04		WASHER, flat	2
26	61S02		NUT, Binx, self-locking	2
27	513287200		STAY, housing lid	1
29	11S02B		SCREW, set	4
35	17S03		WASHER, spring	4
36	11S02B		SCREW, set	4
38	17S03		WASHER, spring	4
46	28S02E		SCREW, set	2
47	6S02E		BOLT	1
48	87S02		NUT, binx, self-locking	3
50	11S04E		SCREW, set	2
51	513340800		SPACER	2
52	267S06		WASHER, flat	4
53	7S04		NUT	2
60	555170000		SPACER	2
70	513151800		BRACKET, trunnion	1
71	104S03		NUT	6
72	41S05		WASHER, spring	6
75	66S03CC		SCREW, set	6
80	513371900		GUARD, ***100T & 150T***	6
81	11S02A		SCREW, set	2
82	17S03		WASHER, spring	2

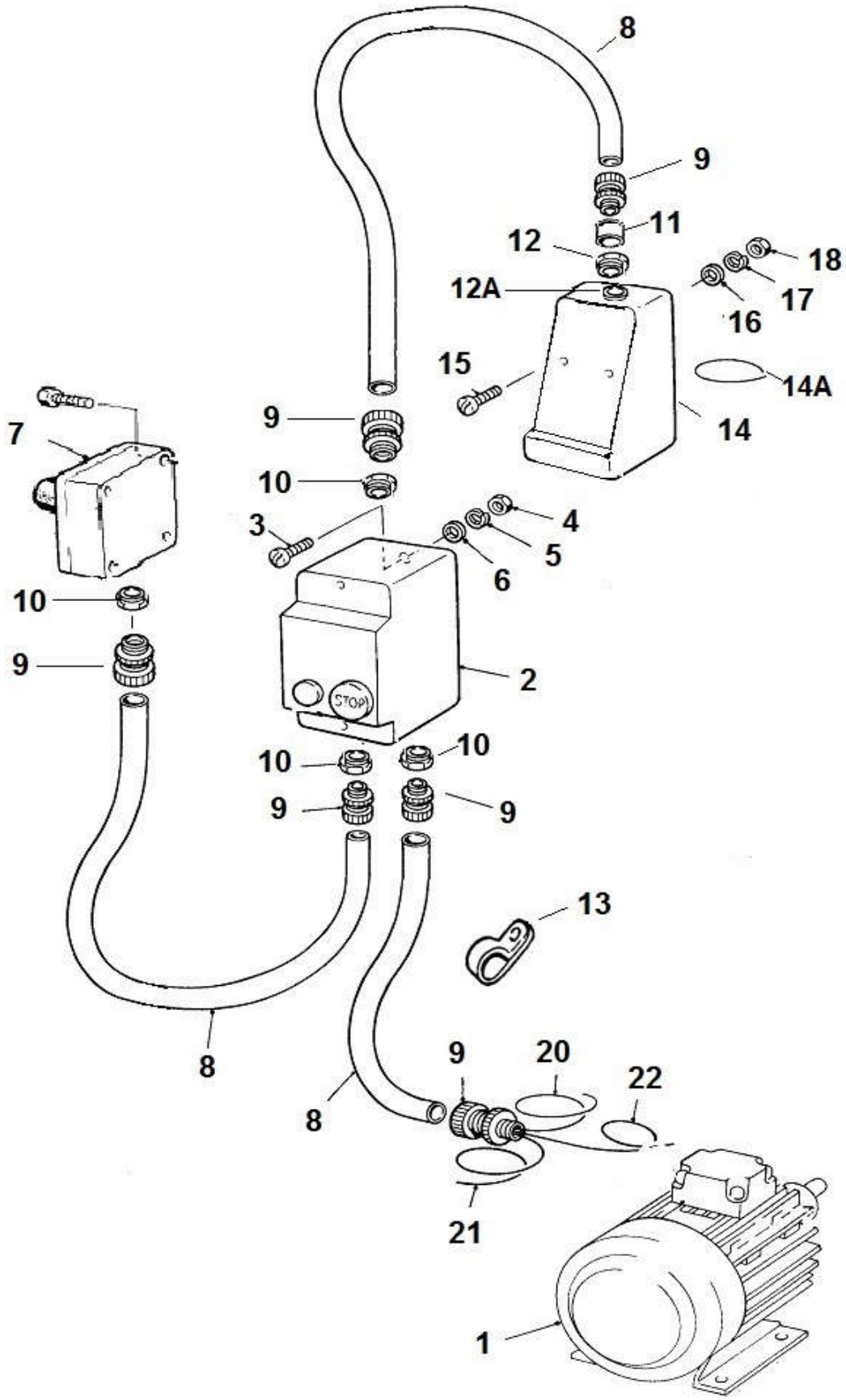

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Item	Part no	Serial no	Description	Qty
5	513287000		TOP PLATE, engine housing	1
9	513286800		LID, engine housing	1
10	513372300		GUARD, belt, 110V 175T	1
				1
12	513205300		STOP, rubber	1
16	513372200		PLATE, closing, 110V	1
17	513372100		BOX, document, rivet on insde of item 1	1
17B	101S05B		RIVET, pop	4
22	241859000		PLUG, polythene	1
25	11S04E		SCREW, set	2
26	7S04		NUT	2
26A	555170000		SPACER	2
26B	513340800		SPACER	2
27	513287200		STAY, housing lid	1
28	267S06		WASHER, flat	2
29	66S03CC		SCREW, set	4
30	104S03		NUT	4
35	41S05		WASHER, spring	10
36	11S02A		SCREW, set	2
36A	66S03CC		SCREW, set	6
37	7S02		NUT	4
37A	104S03		NUT	6
38	17S03		WASHER, spring	4
40	52S02C		SCREW, c'sunk socket head	2
41	11S02A		SCREW,set	2
42	267S04		WASHER, flat	2
43	61S02		NUT, Binx, self-locking	2
46	6S02E		BOLT	1
48	87S02		NUT, binx	2
70	513151800		BRACKET, trunnion	1
71	104S03		NUT	6
72	41S05		WASHER, spring	6
75	66S03CC		SCREW, set	6
80	513371900		GUARD, belt lower	1
81	11S02A		SCREW, set	2
82	17S03		WASHER, spring	2


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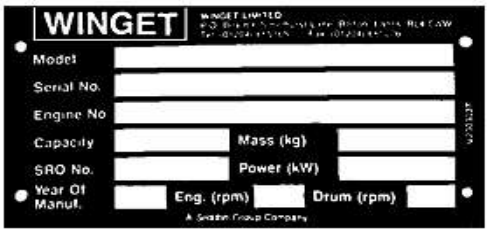
ELECTRIC 110 volt drive assembly

Item	Part no	Serial no	Description	Qty
5	513290600		PULLEY, 'V' belt	1
6	57S4D2		SCREW, grub	1
11			KEY, parallel, supplied with motor	1
12	397400800		BELT "V" 100T	1
12	397400900		BELT "V" 150T/175T	1
18	202493800		MOTOR, 110v 1.5Kw 2.0Hp	1
20	11S03D		SCREW, set	1
21	267S05		WASHER, flat	2
22	17S04		WASHER, spring	2
23	7S03		NUT	2
30	8S03C		BOLT	4
31	267S05		WASHER, flat	8
32	17S04		WASHER, spring	4
33	7S03		NUT	4
35	267S07		WASHER, flat	12
36	17S06		WASHER, spring	2
37	7S05		NUT	6
38	64S05		NUT, binx self locking	4
39	11S05D		SCREW, set	2
40	513333100		STUD	2
45	513361800		PLATE, motor/engine mounting	1
46	8S04D		BOLT	2
47	V2004220		WASHER, flat, special	2
48	61S04		NUT, binx, self locking	2
49	513358800		BRACKET, support	1


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Item	Part no	Date	Description	Qty
1	202493800		MOTOR, 110V 1.5Kw 2.0Hp	1
2	208398900		CONTACTOR, Schneider 110v	1
.....	208398500		CASE, starter	1
.....	192928000		CONTACTOR	1
.....	207818004		RELAY, overload, 9-13 amp	1
3	11S01A		SCREW, set	2
4	7S01		NUT	2
5	17S02		WASHER, spring	2
6	267S03		WASHER, flat	2
7	208890000		SWITCH, stop, emergency push button	1
8	CR229109		CONDUIT, flexible, 20mm	2mt
8A	V2006398		TIE, cable, panel mount	3
8B	V2003253		TIE, cable,	1
9	CR229110		COUPLING, conduit 20mm	6
10	CR229114		RING, lock, 20mm	4
11	CR229112		COUPLER, female, galvanised, 20mm	1
12	205609700		INSERT, brass	1
12A	49S44		"O" RING, brass insert	1
13	V2003558		"P" clip	1
14	208400000		INLET, surface mount, 110V 16amp	1
14A	49S43		"O" RING, appliance inlet body	1
15	11S02B		SCREW, set	4
16	267S04		WASHER, flat	4
17	17S03		WASHER, spring	4
18	7S02		NUT	4
20	144700100		WIRE, live, brown	3.0m
21	144700300		WIRE, neutral, blue	1.0m
22	144700200		WIRE, earth, green/yellow	2.5m

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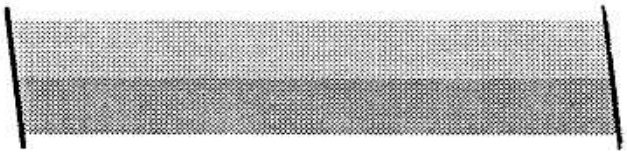
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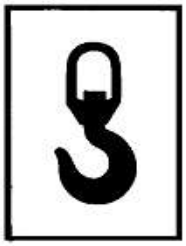
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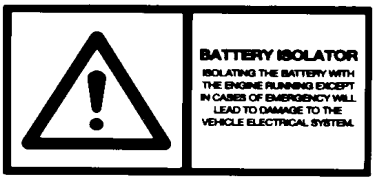
Item	Part no	Serial no	Description	Qty
				1
2	V2003037		PLATE, serial	1
—	101S05B		RIVET, pop	4
3	504600900		DECAL, “Engine housing lid closed”	1
4	504694600		DECAL, “Safety Warning”	1
8	V2003039		DECAL, “WINGET” logo,	3
9	V2003038		DECAL, stripe, 2 colour	AR
10	V2003101		DECAL, “Diesel fuel”	1
13	V2003665		DECAL, “Sling point”	1
14	V2003598		DECAL, “Britsh made”	1
15	V2004130		DECAL, “LPA 80"	1
17	V2004307		DECAL, “Electrical hazard”	1
18	V2005208		DECAL, "Engine starting procedure"	1

1 **100 T**

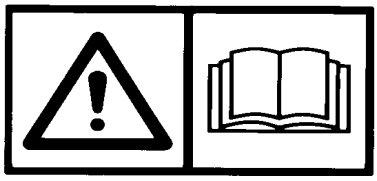
2 **150 T**

3 **175 T**

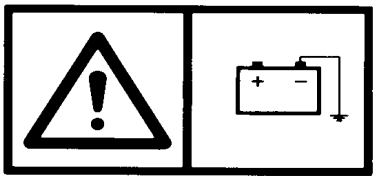
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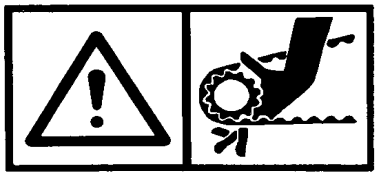
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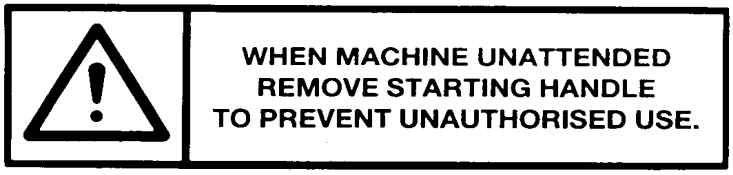
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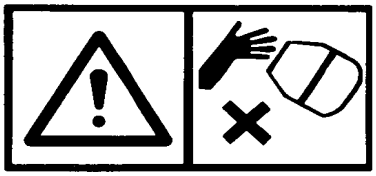
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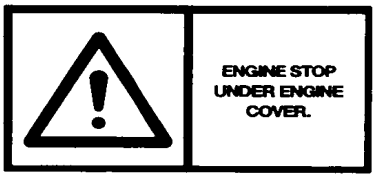
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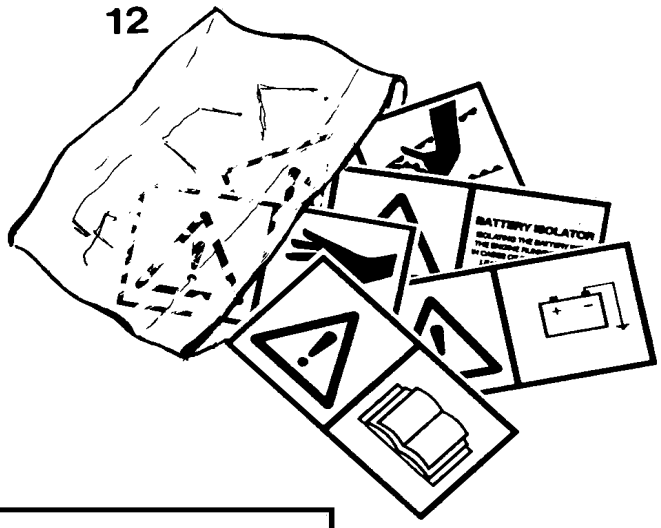
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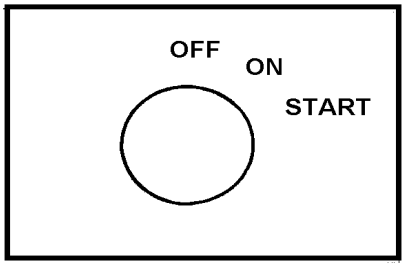
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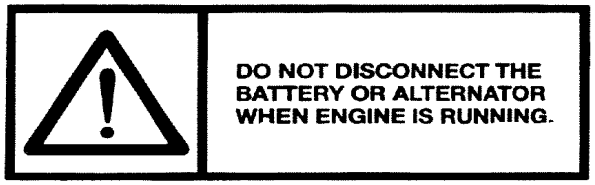
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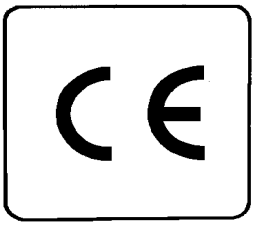
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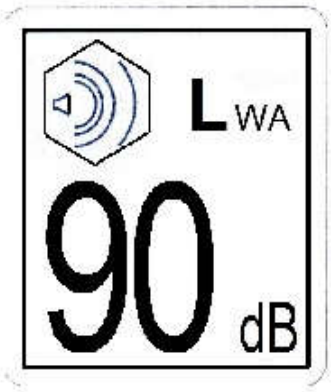


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Item	Part no	Serial no	Description	Qty
1	V2003105		DECAL, “100T”, Black	2
2	V2003106		DECAL, “150T” Black	2
3	V2003107		DECAL, “175T” Black	2
4	V2004227		DECAL, “Battery isolator”	1
5	V2004229		DECAL, “Operators handbook	1
6	V2004235		DECAL, “Negative earth”	1
7	V2004282		DECAL, “Hot surface”	1
8	V2004281		DECAL, “Chain drive	1
9	V2004288		DECAL, “Remove start handle”	1
10	V2004289		DECAL, “Keep hands clear of drum”	1
11	V2004302		DECAL, Engine stop"	1
12	V601906		KIT, decals, 100T, 150T, 175T Each kit contains all of the decals required for one machine.	1
13	V2005218		DECAL "Key switch"	1
14	V2004796		DECAL "Do not disconnect battery"	1
15	V2004223		DECAL "CE mark"	1

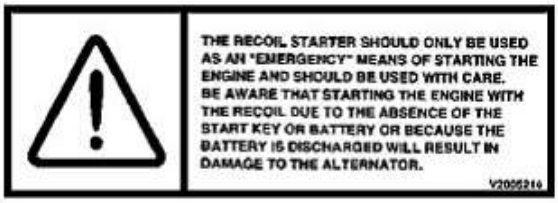
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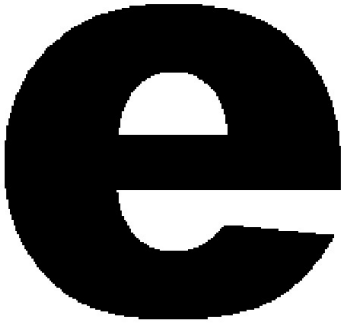
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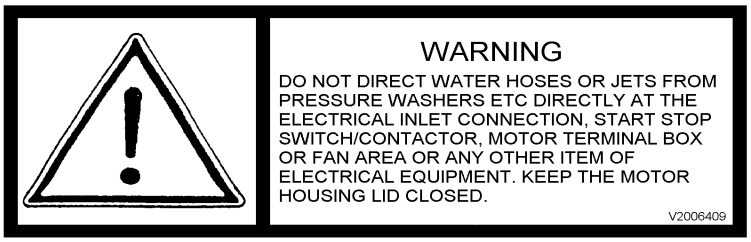
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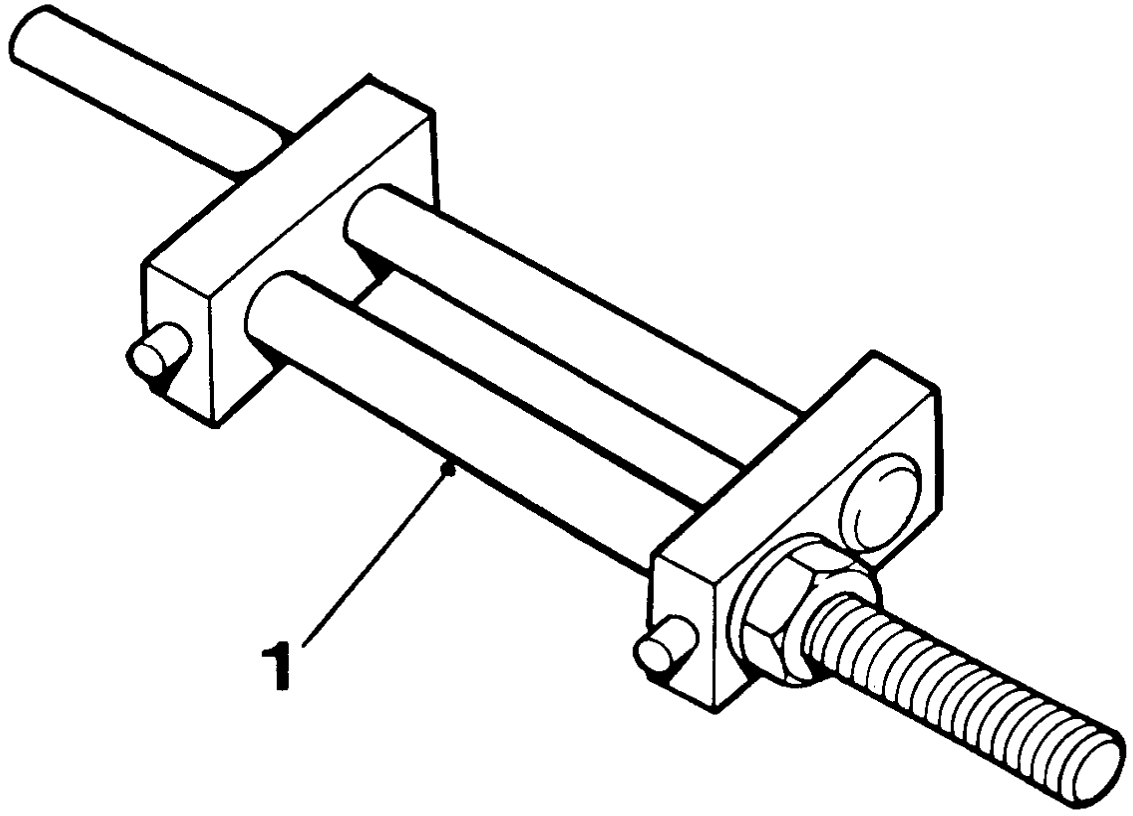
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Item	Part no	Serial no	Description	Qty
2	V2006408		DECAL, "LWA 90"	1
4	V2005214		DECAL, "The recoil starter"	1
5	FSE357		DECAL, "Engine stop	1
6	V2005630		DECAL, "Locking Plunger"	1
7	V2004744		DECAL, " Eye Protection"	1
8	513371100		DECAL, "Emergency stop"	1
9	V2006402		DECAL "UKCA"	1
10	V2006403		DECAL "UKNI"	1
11	V2006408		DECAL "e"	2
12	V2006409		DECAL "Warning Do Not"	1


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Item	Part no	Serial no	Description	Qty
1	513204000		CLAMP, drum clip	1