

ESP-05

HYDROSTATIC SENSOR PAVER

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AN ISO 9001 : 2015 CERTIFIED COMPANY



WORKSHOP MANUAL



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ESP-05

Machine Serial No. : _____

Engine Serial No. : _____

Manufacturing Year : _____

Manufactured By:

UNIPAVE ENGINEERING PRODUCTS

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GENERAL INTRODUCTION

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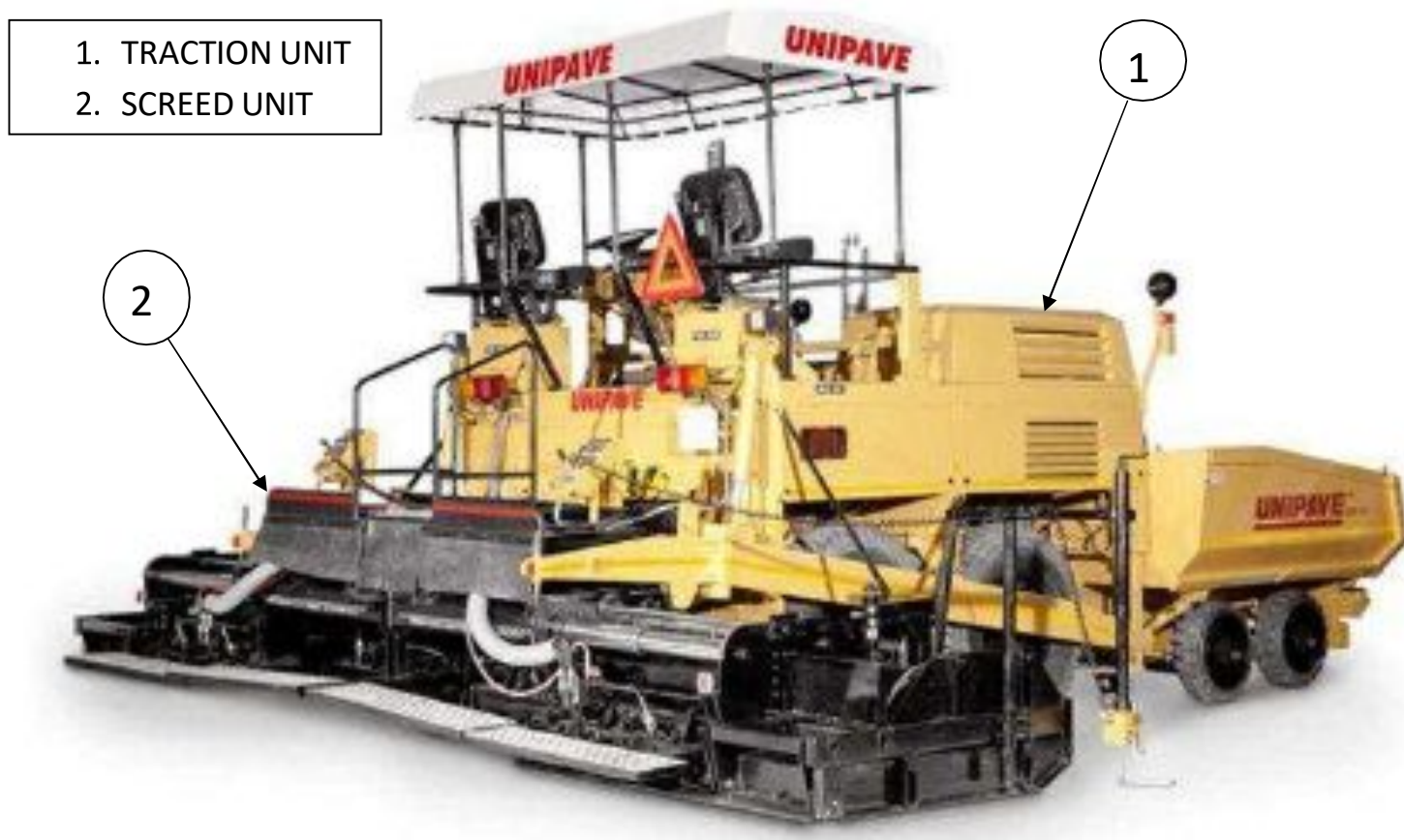


Fig 1.1

(Design and Construction are subject to change without notice due to modification, alteration and custom engineering without reference to illustration or description in this publication.)

MACHINE INTRODUCTION

Unipave Paver Finisher ESP-05 is a self-propelled unit suitable for paving Bituminous, Wet mix GSB, WMM and DLC material. It is powered by Ashok Leyland make water-cooled electric start diesel engine model H4C413022 developing 130 hp (95KW) @ 2200 RPM (or equivalent).

The Paver consists of two sections viz. the tractor unit and the screed unit (see Fig1.1). Tractor unit conveys material and spreads it in front of the screed and tows the screed forward over the paving material. The towed screed thereby consolidates and levels the material being laid.

The engine transmits the power through a flexible rubber couple to the Distribution gearbox. The Distribution gearbox shafts are coupled with Traction Pump, Conveyor Pump and Auxiliary Pump. The Traction Pump transfers pressurized oil to operate the Traction Motor mounted on the Traction Gearbox Unit. Rear Wheels mounted on the equalizer beam are driven by this gearbox via a differential unit housed in the gearbox. Differential Lock arrangement is provided to have traction under adverse condition.

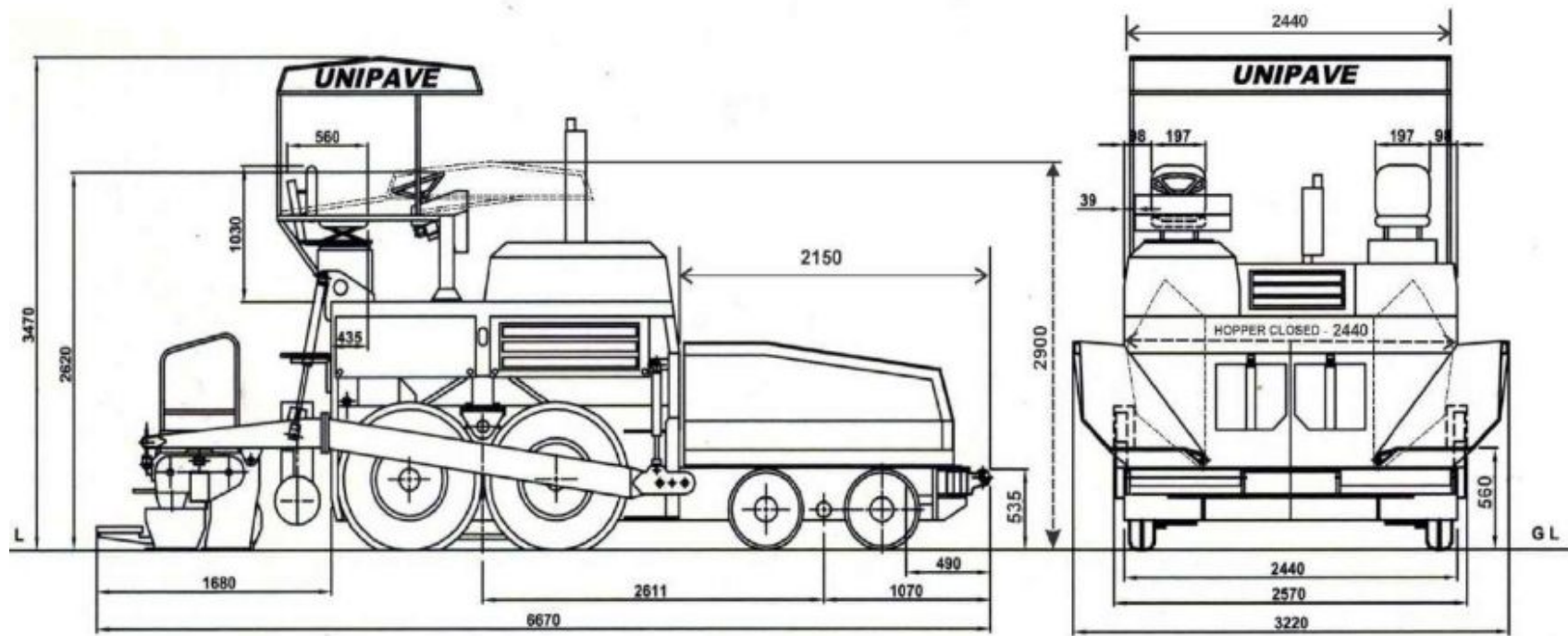
The Conveyor Pump transfers pressurized oil to conveyor motors for operating the conveyor chains. Both the conveyor chains can be operated individually with electrical switches provided on Control Panel.

The Auxiliary Pump transfers pressurized oil for operating the Tamping, Vibrating Motors mounted on the screed and the hydraulic jacks provided in the machine.

Most of the functions being hydraulic the operation of the machine is hassle free. The sliding type Operating Panel and Functional levers are within easy reach of operator. Brakes and Operator seats are provided on both left and right sides.

Mat thickness can be easily adjusted with the Leveling Jacks. The Slope and Grade Sensors provided with the machine enable precise adjustment for Grade and Slope of material being laid. The tamping and vibration arrangements assist the compaction and finishing of material being laid. Special attention is given to ensure easy maintenance and adjustment of all units of the paver. The screed adjustments for mat finish can be made easily.

TECHNICAL SPECIFICATIONS



* All dimensions are in mm.

2. TECHNICAL SPECIFICATIONS **UNIPAVE[®] ESP-05**

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POWER UNIT						
Engine	Ashok Leyland make water-cooled electric start diesel engine model H4C413022 developing 130 hp (95KW) @ 2200 rpm		Emmission standard	As per ARAI		
Gearbox	Speed reduction gearbox to achieve low speed for paving and high speed for travelling.		Electrical System	12 V DC		
OPERATOR STATION						
Control panel type		Sliding	Operator seat		Double Operator Seat	
Travelling function		Left and Right Side	Operating function		Left and Right Side	
Steering		Hydraulic	Brake		Caliper disc brake on both the sides	
PERFORMANCE						
Laying suitability			Option 1: Bituminous material Option 2: Bituminous, Wet mix, GSB, DLC, DBM material (Dual Purpose)			
Laying capacity			300TPH			
Laying thickness			10mm to 300mm (3/8” to 12”)			
Transmission			Hydrostatic			
Working speed			0 to 30 m/min			
Travelling speed			0 to 16 kmph			
Weight			14100 kg (31085lb) approx			
Slope and grade control			MOBA, Germany make electronic sensor (Auto and Manual mode available)			
Maintenance shutters			On three sides of machine			
Traction and conveyor pump-motor			Sauer Danfoss, Germany or equivalent			
CONVEYOR AND AUGER SYSTEM						
Conveyor and auger		2 sets, one on each side		Auger screw size		Dia 350mm
Drive		Hydraulic		Auger material		Ni-Hard Steel Material

2. TECHNICAL SPECIFICATIONS **UNIPAVE[®] ESP-05**

WORKSHOP MANUAL

HOPPER AND FEEDING SYSTEM			
Hopper operation	Hydraulic	Hopper capacity	5 cubic meter (176 cubic feet)
Hopper width	Working : 3.22m (10' 6.75") Closed: 2.44m (8')	Feed tunnel width	1.268 m (4' 1.625")

SCREED			
Screed width	2.5m (8' 2.5") basic width, Hydraulically extendable up to 4.5m (14' 9.125") Option: Attachment up to 6.0m (19' 8.25")		
Crown (manual)	-1° to 4°	Screed heating	Yes, with 8 LPG burner facility
Screed vibration	Yes, infinitely variable (0 to 50.00 Hz)	Screed tamping	Yes, infinitely variable (0 to 33.33 Hz)

DIMENSIONS			
Operating height	3.47m (11' 4.625")	Shipping height (canopy tilted)	2.9m (9' 6.25")
Shipping width	2.57m (8' 5.25")	Shipping height (w/o canopy and exhaust silencer)	2.68m (8' 9.5")
Length (tractor unit + screed)	6.67m (21' 10.5")	Wheel base	2.61m (8' 6.875")

UNDER CARRIAGE			
Rear Wheel	Four Pneumatic Tyre Size:10.00 X 20	Front Wheel	Four Solid Rubber Tyre Dia 550 x 175mm wide

REFILL CAPACITIES			
Fuel	145L	Hydraulic oil	220L
Cooling system	6.5L	Engine oil	14L

UNIPAVE ESP-05 [WORK SHOP MANUAL]

SAFETY INSTRUCTIONS

Safety instruction and symbols mentioned in this manual and on the machine should be followed strictly. Failure to follow the instruction may result into personal injury, death or property damage.

SAFETY LABELS

Following SAFETY LABELS located at places in the manual and machine must be taken note of by the operator to avoid hazards as mentioned with the symbol.

 **CAUTION**

Indicates presence of hazard that can cause personal injury or property damage if the warning is neglected.

 **DANGER**

Indicates presence of hazard that may cause severe personal injury or death if the warning is neglected.

NOTICE

The label is used to convey important information related to installation, maintenance or operation.

Apart from the Safety instructions, Symbols and Labels mentioned in this manual and on the machine, the operators and maintenance personnel must be alert to recognize and avoid other potential hazard. The operators must be skilled and trained properly to perform the tasks.

UNIPAVE Paver finisher is made in accordance to recognized safety rules. Careless and misused operation of the machine may lead to potential death causing injury to the user, to the third parties and probable property damage.

The machine and its accessories must be assembled and operated as described in the manual. All the instruction related to Safety and Operation must be followed. Any minor operational or functional problem must be checked and rectified immediately.

The machine must be regularly inspected and maintained for longer service life. In case of queries related to maintenance you may contact your local UNIPAVE Dealer or Service Department at UNIPAVE ENGINEERING PRODUCTS.

Maintenance tasks like greasing, lubricating, oil change, screed plate cleaning and conveyor chain cleaning must not be performed while the paver is running or screed heaters are on.

MANDATORY SAFETY INSTRUCTIONS

1. The operator of the machine must obey the mandatory Vehicle Traffic Rules.
2. The operator, site supervising personnel or the third parties must not have radio or music headphones on while working.
3. Follow the Pre-start Inspection Instructions stated on Page 30.
4. Always tie back or otherwise secure long hair to avoid injury due to entanglement of hair in the machinery.
5. Safety boots, gloves, eye glasses, jackets, masks and helmet must be utilized by required persons.
6. Smoking is prohibited within 15m radius of the machine.
7. The operator of the machine must obey the mandatory Vehicle Traffic Rules.
8. The operator, site supervising personnel or the third parties must not have radio or music headphones on while working.
9. Always tie back or otherwise secure long hair to avoid injury due to entanglement of hair in the machinery.
10. Safety boots, gloves, eye glasses, jackets, masks and helmet must be utilized by required persons.
11. Smoking is prohibited within 15m radius of the machine.

MAINTENANCE TASKS

All machinery maintenance tasks of assembling, disassembling and replacement of parts must be carried out by personnel trained and experienced in handling such tasks. Failing to do so may result into damage to machinery parts. In case of electrical faults and maintenance, the work should be executed by trained electrician having proper experience and knowledge.

SUPERVISION

The machinery operation must be supervised by qualified person. The supervisor must be alert of potential onsite risks and must make sure that the safety instructions are followed. He must make sure that the assisting work force or third parties are working with safety jacket, gloves, shoes, helmets, eye glasses and masks on. The persons being trained in operation and maintenance must be supervised by experienced personnel.

3. SAFETY

LOADING AND UNLOADING

UNIPAVE Paver Finisher ESP-05 can be easily loaded or unloaded using a loading dock that is in level with the truck platform.

In absence of loading dock a ramp with maximum 10 % slope may be used. The ramp must be rated to support the weight of machine. The weight of UNIPAVE ESP-05 being 14Tons, the ramp must be rated to support minimum 16 Tons of weight.

Make sure the trucks parking brakes are engaged while loading or unloading.

After loading the Paver on truck or trailer proper wedge elements must be fastened wheels of machine in order to lock the machine in position. This is necessary to avoid may cause major accidents while transporting.

Note: The Paver can be lifted using cranes in case if required. To do so use the place the hook in the hole depicted in Fig 1 .



Fig 1

SHIFTING THE PAVER

Drive the paver if it is to be shifted to nearby destination. While driving the paver to nearby destination, make sure to raise the screed and lock its position using SIDE CHANNEL LOCK PIN (Fig 2).

Never fail to use SIDE CHANNEL LOCK PIN. This is necessary to prevent accident due to failure of Screed Lifting Jack.

For shifting the paver through a longer distance it must be shifted in a Truck or Trailer. Make sure to fasten or weld proper obstructing elements in order to lock the machine position. **Failing to do so may cause major accidents while transporting.**

INSTRUCTIONS TO AVOID ELECTROCUTION HAZARD

Make sure machine remains sufficiently away from electric power lines. In case if required remove the Operator Umbrella and Engine Exhaust Silencer.

Failing to do so may result into Paver and surrounding property damage and death due to electrocution in some cases.

In case the electric power supply lines get in contact with the machine follow below mentioned instructions. Stay in operator's seat.

1. Warn the worker to stay away from machine.
2. If it is possible to break the contact, drive the machine away from the lines.
3. If not possible to do so, stay on the seat till the power supply is switched off.

Failing to follow above instructions may result in operator getting an electric shock which may result in third degree burns or death.



Fig.2

3. SAFETY

TANK REFILLING:

- Refill your diesel tank and diesel spray tank only after turning off the engine.
- Make sure that screed heating burners are turned off and Gas bottle regulator is turned off while refilling the tanks.
- Do not smoke while refilling the diesel tanks.

SAFETY DECALS

Given below are the safety decals used on paver finisher. It is the responsibility of the Paver owning firm to ensure that the labels are always in place on the machine.



Before starting the engine please note the following:

1. Make sure to inspect your paver finisher daily before use. Maintenance and lubrication must be performed at regular intervals as mentioned in LATER SECTIONS OF - MAINTENANCE and LUBRICATION AND INSPECTION CHART.
2. The problems arising in the machine must be immediately addressed and rectified to avoid any further damage arising out of it.
3. Repairs and replacement of parts should be executed as soon as the problem or damaged part is identified before operating the machine.
4. Take care there is sufficient fuel in the fuel tank for uninterrupted operation.
5. Before starting the paver make sure there's sufficient Oil in the Hydraulic Oil Tank through the level indicators on Tank.
6. Check the engine oil level regularly.
7. Check the radiator water coolant level.
8. Check Oil Level in the Traction and Distribution Gearbox is proper.
9. Note that no one is standing nearby the paver.
10. The Operating Panel and Operating platform must be clean.
11. Know the limitations of your machine in terms of material loading capacities, max travelling speed, grade-ability, steering, braking and material conveying capacity.
12. Always push the horn button once for 2-3 seconds to alert the workers nearby before turning the isolating switch clockwise second time to start the engine.

STARTING THE ENGINE

Turn the ignition switch clockwise to the first notch, note that ignition light is 'ON' and then turn further clockwise to start the starter motor of the engine. As soon as the engine starts release the isolating switch, it will come to first notch position. If the engine fails to start, do not operate the starter before all moving parts of engine come to rest, or it may damage the parts like pinion of starter and gear ring on flywheel. Try starting only when all moving parts come to rest.

STOPPING THE ENGINE

Turn the ignition switch anti-clockwise to the 2nd notch then to 1st notch.

GENERAL

This chapter contains the instruction and step to be taken for carrying out maintenance and service of paver finisher machine. For better output efficiency, results and longer machine life it is but necessary to get the paver finisher checked and serviced at suggested intervals.

The maintenance of paver finisher can be divided into following four categories:

1. Cleaning up of Paver Finisher Parts
2. Top up and Replacement of Oils and Coolant.
3. Hydraulics check and maintenance
4. Mechanical Maintenance

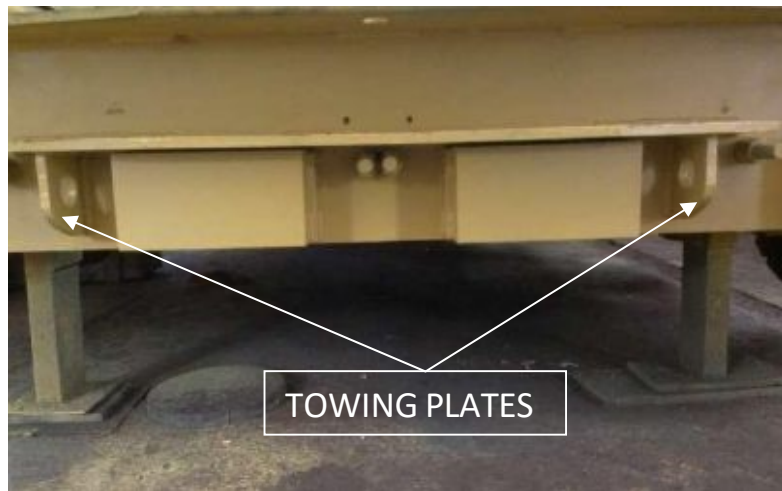


Fig 3

TOWING THE PAVER

For maintenance and servicing in case of breakdown you may have to tow the Paver Finisher to nearby destination. For this two towing plates are provided beneath the Oscillating Beam as shown in Fig 3. These plates can be used to tow the paver using ropes or ceilings.

Note that the drive chain must be disengaged to tow the paver. Also the paver must be towed only after lifting the screed and locking its position using side channel lock pin (See Fig4.1). This is necessary to prevent accident due to failure of Screed Lifting Jack.

1. Cleaning up of Paver Finisher Parts

Below mentioned parts must be cleaned using diesel spray at regular intervals (especially at the end of day)

1. Push Rollers
2. Conveyor Chain
3. Hoppers
4. Screed Plate Bottom
5. Control Gates.
6. Conveyor Chain Covers
7. Augers

2. In addition to above mentioned parts do clean and Top Up the Tanks and Gearboxes mentioned below:

1. Hydraulic Oil Tank
2. Diesel Fuel Tank
3. Diesel Spray Tank
4. Distribution Gearbox
5. Traction Gearbox
6. Chain Box

3. Hydraulic Checks & Maintenance

1. This part of maintenance deals with checks and replacements required for maintenance of hydraulic system of your Paver Finisher. You need to replace the filters at regular intervals, check for leakages and hydraulic jack oil seal kits.

GENERAL INSTRUCTIONS

1. Oil level should be checked regularly, If Oil level is less it may cause damage to pump
2. Cleaned the hydraulic connections daily contamination is mother of any hydraulic failures.
3. Change all hydraulic filters after first at 50 hours then after interval of 500 hour regularly.
4. Change the complete hydraulic oil after 1000 hours of operation.
5. Stop any external leakage of oil immediately.

OIL TRAYS

Unipave Paver Finisher ESP-05 comes with Oil Trays. In case of leakage from hydraulic fittings and joints the oil leaked accumulates in these trays, thereby preventing the oil spillage on material to be laid. Regular check of Oil Trays also helps to note whether there is leakage in any of fittings. If Oil is found in the tray the point of leakage must be checked. The oil accumulated in Trays must not be poured in tank for reutilization. The trays are situated below the control gates. (See Fig 4) Loosen the Allen Key Bolts to and slide them out when needed

(Fig 4)



Replacement of Filters

Filters are an important part of the hydraulic system. They need to be replaced regularly to prevent the contaminated oil from damaging hydraulic pump, motors and valves, etc.

Replace or clean the filters mentioned below at intervals mentioned in the table.

Sr. No	Filter/ Strainer	First Replacement (Hrs.)	Second Replacement (Hrs.)	Third Replacement (Hrs.)	Thenafter
1	Suction Filter	50	500	1000	Every 500 Hrs
2	Return Line Filter	50	500	1000	Every 500 Hrs
3	Hyd. Tank All Strainers	500	1500	2500	Every 1000 Hrs
4	Diesel Tank Strainers	500	1500	2500	Every 1000Hrs

Top-up and replacement of oil Coolant

Observe the below mentioned chart for top up and replacement of oil and coolant.

Gearbox/Radiator	Theoretical Capacity	Oil/Coolant	Qty	Top up	Replacement Period
Engine Oil	14 Lts	15W-40	Up to Max level mark on dip stick.	Weekly	As directed in Engine manual
Radiator	29 Lts (3 Lts coolant+26 Lts Water)	TVS Girling EzCool Radiator Coolant Concentrate Green	Full up to inlet	Weekly	Half Yearly or as required
Distribution Gearbox	5.5-6 Lts	SAVSOL Auto Gear Oil EP90	Up to the Indicator window mid level	Weekly	Half Yearly
Traction Gearbox	40-45 Lts	Hydraulic Oil No. 90	Above lower level mark and below higher level mark on Oil Level Stick	Weekly	Half Yearly
Auger Chain box	1.25 Lts	Oil and Grease Mixture	Up to centre of Lower chain wheel	Weekly	Half Yearly
Hydraulic Oil Tank	220 Lts	Hydraulic Oil No. 68	Up to third level indicator window on tank	Weekly	1000 hrs
Brake Cylinders	200 ml	TVS Girling DOT3 Heavy Duty Brake and Clutch Fluid	Upto Max level on brake cylinders	Weekly	Yearly

PROCEDURE TO CHANGE ENGINE OIL

- Drain the oil out of chamber through the drain plug at the end of engine drain hose pipe. (See Fig 5)
- Refill the engine oil through the inlet provided in front of the engine.
- Make sure to use a funnel while pouring the engine oil.
- Check engine oil level using the Level Dip Stick provided besides the Engine name plate. The engine oil level should not get below the L level mark on the Level Dip Stick.

PROCEDURE TO CHANGE OIL IN HYDRAULIC OIL TANK

- Drain the oil by opening the drain plug at the end of drain hose pipe on the right hand side of paver.
- Fit the drain plug back.
- Clean the Hydraulic Tank using diesel. Check the filters and replace timely (It is always advisable to change the filter while changing Hydraulic Oil.)
- Open the Central Bonnet Door and then the Oil Inlet Pipe Cap. (See Fig 6)
- Pour in the oil till it is visible in the top level indicator window.

(Fig 5)



(Fig 6)



PROCEDURE FOR TOP UP / REPLACEMENT OF RADIATOR WATER COOLANT

To top up the radiator water coolant level, open the Inlet Cap provided at top of radiator and pour in the water coolant. Make sure to maintain the proportion of Coolant Fluid + Water (3 lts coolant fluid with 26 lts of water or as directed by coolant manufacturer).

PROCEDURE TO CHANGE DISTRIBUTION GEARBOX OIL

- Drain the oil through the gearbox drain plug at the bottom of gearbox.
- To refill the oil open the Oil Pipe Cover on the bonnet.
- Open the Oil Inlet Pipe Cap.
- Pour the oil till it is visible in the Level Indicator Window. The Oil Level should not rise above the centre of Level Indicator Window.

PROCEDURE TO CHANGE TRACTION GEARBOX OIL

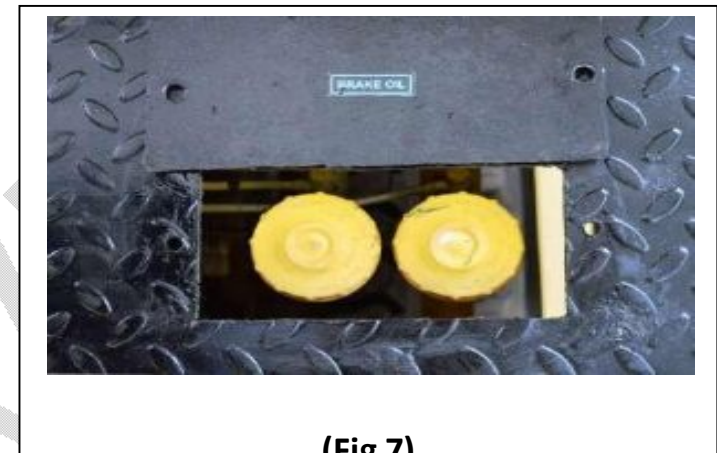
- Drain the oil by opening gearbox drain plug on drain hose pipe at the rear left end of gearbox.
- To refill the oil open the Oil Inlet Plug at the top of gearbox.
- Pour the Oil inside the gearbox and refill it to required level.
- The Oil level should not be above the Higher Level mark and not below the Lower Level mark on Oil Level Dip Stick.

PROCEDURE TO TOPUP AUGER CHAINBOX OIL + GREASE

- Open the central cover of the Chainbox and pour in the mixture of Oil Grease (2 Lts : 1 kg) until the Auger Shaft Chain wheels are half submerged in the Oil Grease bath.

PROCEDURE TO TOP UP THE BRAKE FLUID IN BRAKE CYLINDERS

- To top-up open the Brake oil window on the Operator Platform (Refer Fig 8.4).
- Then open the Cylinder caps and pour the brake fluid till the maximum level mark on the Cylinder is reached.
- Open the brake pipe end of the Brake Cylinder and drain the brake fluid out.



(Fig 7)

4. Mechanical Maintenance

Check for wearing of parts on periodic basis to ascertain whether any replacement is required:

1. Drive Roller Conveyor Chain - Chain Wheel
2. Roller Drive Roller External- Chain Wheels
3. Floor Plate
4. Conveyor Chain
5. Idler Chain Wheels
6. Screed Plates
7. Traction Drive Chain Wheels
8. Augers and Auger Extensions
9. Conveyor Motor Chain Wheels
10. Intermediate Shaft Chain Wheels.
11. Upper Housing Chain Wheels
12. Chain Tightening Bracket Chain Wheels
13. Auger Chain Box Chain Wheels
14. Brake Disc And Brake Calipers

Drive Roller Conveyor Chain – Chain Wheels

Check for wearing of Conveyor Chain Drive Chain Wheels. When worn out Conveyor chain- Chain Wheels might not convey the material to the Augers properly. The chain links may slip from chain wheel teeth resulting in discontinuous motion of Chain. Hence the Drive Rollers need to be replaced for better material conveying.

Drive Roller External -Chain Wheels

Check for wearing of Roller Drive Chain Wheels. If worn out the motion transmitted from the Intermediate Shaft to Drive Roller and thereby the conveyor chain may get affected. For uninterrupted transmission to conveyor chain while paving operations the Chain Wheels need to be changed.

Floor Plates

Due to constant movement of Conveyor Chain and / or material on the Floor Plates, they may wear after considerable long time. The Floor Plates must be checked yearly in order to know its suitability for working. If required the plates must be replaced.

Conveyor Chain

The conveyor chains due to constant wearing resulting from the motional contact with the Floor Plates and Paving Material starts wearing. The flats of the conveyor chain are the most affected due to this motion resulting in gradual decrease in thickness. With decreased thickness the conveyor chain links will continually wear the Floor Plates on its sides at an extended rate. Hence the Conveyor Chain must be replaced if the slats have worn out too much.

Idler Chain Wheels

Four units of Idler Chain Wheels are provided in paver- Two for tensioning of Drive Roller Chain and Two for tensioning of Auger Upper Housing Drive Chain. Wearing of the chain wheels will result in reduced chain tension thereby affecting the drive transmitted. Hence the chain wheels must be replaced once excessive wearing is noticed.

Screed Plates

Screed Plates continuously wear due to constant motional contact with the laid material. The screed while floating exerts pressure on the material due to self weight resulting in friction at the bottom of screed plate. This wearing of plates decreases its thickness. If the thickness decreases considerably the plates must be replaced for uninterrupted paving operations otherwise it may start wearing screed body.

Traction Drive Chain Wheels

Traction Drive Chain Wheels are responsible for transmission of drive to the Driving Wheels. Wearing of the Chain Wheels will result in improper drive transmission thereby affecting the motion of paver. The Chain Wheels must be replaced if wearing is observed.

Auger and Auger Extensions

The Augers spread the material along the required screed width. They may wear after a long time. The wearing must be observed regularly to check its suitability for paving operations and must be replaced if required or else they may not spread material efficiently resulting in low flow of material.

Conveyor Motor Chain Wheels

Wearing of Conveyor Motor Chain Wheels may result in improper drive transmission primarily to Intermediate Shaft and further to conveyor chain and augers. Hence they must be checked and replaced if required.

Intermediate Shaft Chain Wheels

Wearing of these Chain Wheels may result in improper drive transmission to Drive Rollers and Auger Chain Box Upper Shaft Housing. Therefore must be checked and replaced if required.

Upper Housing Chain Wheels

Wearing of these chain wheels may result in improper drive transmission to Augers. They must be checked and replaced when required.

Chain Tightening Bracket Chain Wheels

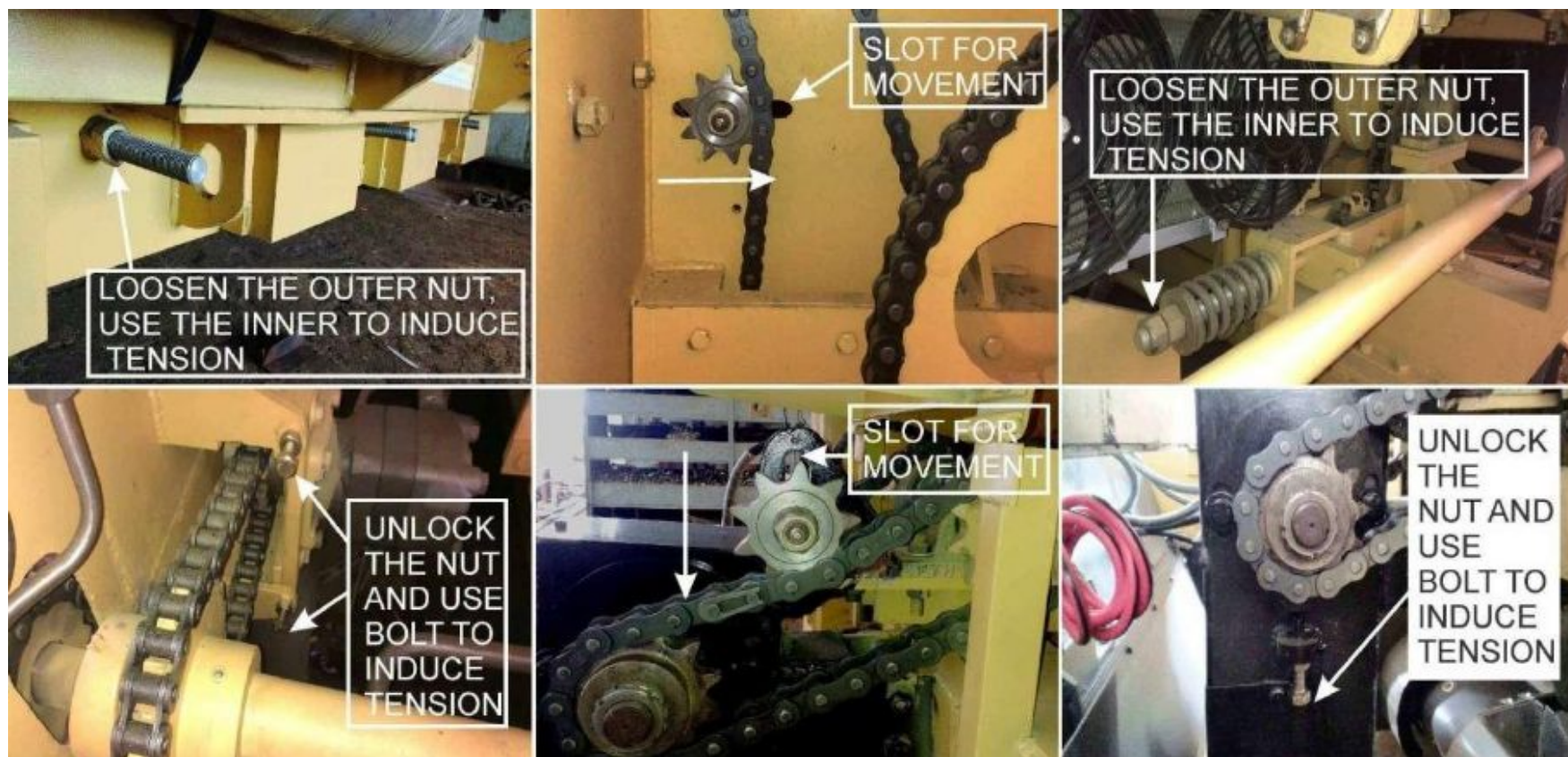
These Chain Wheels are responsible for tensioning of Traction Drive Chain. If worn out the drive transmission to the Rear Wheels is affected and hence must be replaced.

Auger Chain Box Chain Wheel

There are four chain wheels in Auger Chain Box. Two chain wheels at top are part of Upper Housing Assembly. Two at bottom are assembled to Main Auger Shaft. When worn out the chain wheels affect the drive transmission to the Augers and must be replaced if required.

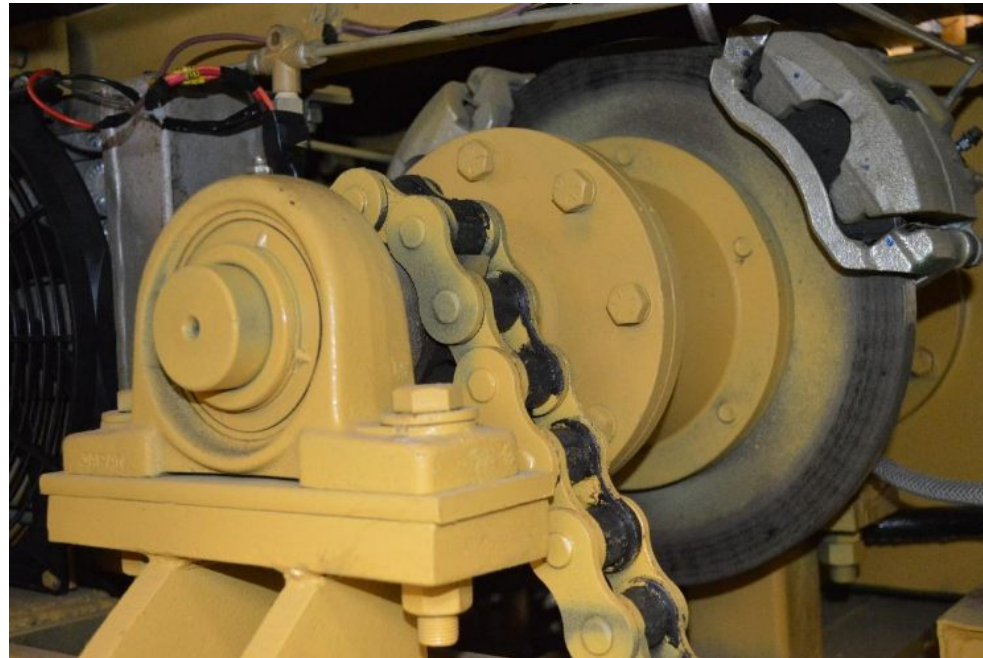
Note: Verify below given fig 8 for better understanding for disassembly

(Fig 8)



Brake Disc and Brake Calipers

Total four Brake Calipers are provided for braking application on two Brake Discs. The Brake Discs are coupled with Drive Chain Wheel shaft through hub. Visually inspect both the Brake Discs every three months to track its wearing. If the thickness decreases too much replace the discs. Braking application wears out the Brake Caliper Liners. Due to excess wearing of Liners, scratching sound may arise from contact of Brake Caliper Liner and Brake Disc when brakes are applied. In that case replace the Brake Caliper.



Conveyor Chain:

The Conveyor Chain must be in proper tension. Check that it's not too loose. If required tension can induced using Chain Tightening Pipe Spanner and the Tommy Rod provided for spanner. Both the Items are provided in the Tool-Box. Using the Pipe Spanner tighten the double nut on the Chain Tightening Studs provided in front of the paver.

Drive Roller Chain:

Idler Chain Wheels are provided for inducing the tension in these chains. To tighten the chain:

- Loosen the Inner nut of Idler Chain Wheel nut and shift it forward in the slot provided in chassis.
- Now tighten the nut when required tensioning is achieved.

Traction Drive Chain:

The chain should be checked whether or not in tension. Loosen the outer nut shown in figure and use inner nut to induce tension. Lock the inner nut using the outer nut once required tensioning is achieved.

Intermediate Shaft Drive Chain:

If not under proper tension use the bolts provided on the Conveyor Motor mounting bracket to induce tension.

- Firstly loosen the check nut to free the bolt's movement.
- Turn the bolt clockwise until required tension is achieved.
- Lock the bolt in position using the check nut.

Auger Upper Housing Drive Chain:

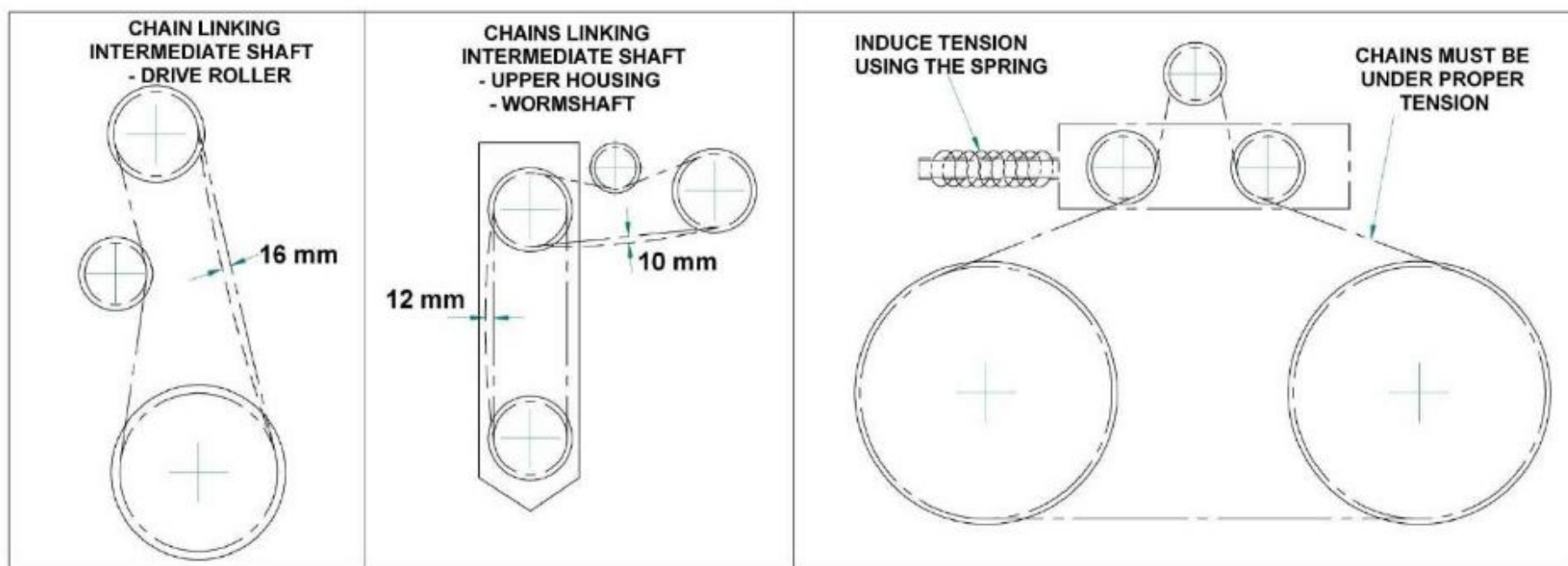
- To induce tension in these chains, loosen the Inner nut of Idler Chain Wheels and slide it downwards in the slot.

- Lock its position by fastening the Nut.

Auger Chain Box Chain:

To induce or reduce the chain tensioning move the Upper Housing using the bolt provided at the bottom of the housing after unlocking the position by loosening the nut.

Note: The chains should not be so loose that chain movement exceeds the values specified in below mentioned diagram.



(Fig 9)

Important point need to be taken care during Paver Operations

1. Asphalt dump truck must not push the paver during forward paving
2. Impact / contact of dump truck with paver must be smooth without jerks
3. Don't gather additional material around augers before start of paving as it may cause overload on augers & reduce its life.
4. Don't shift paver from one site to another by travelling of Paver on road.
5. After completion of work or every day clean Paver hopper, conveyor system, augers etc.
6. Need to lubricate (with grease) all chain & other moving parts every week

Common Issues in Paver and its Resolutions

Screed in-out / up-down

Hopper up-down

Resolution :- First check double solenoid valve & its cap that its showing light indication, if yes then push the center point of solenoid valve to either side if the movement of the function starts then its hydraulic / solenoid valve issue open the valve clean it and do re-fitment or replace it.

If solenoid valve doesn't showing light indication its electrical issue either in spring return switch, wiring connections to valve cap & valve coil rectify it by replacement of repair.

Conveyor chain stop working or slow movement

Resolution :- First perform above check if problem not resolved then check PRV adjust the require hydraulic oil pressure in system by setting it valve turn (std 6 turn open). If problem not solved then open PRV check o ring if not proper then replace o ring or PRV

Paver Forward & Reverse not working

Resolution :- First check F/R function by manual way. There is a lever on traction pump verify that by movement of lever paver starts moving forward or reverse if so then there is a problem in electrical parts. We need to check voltage of Circuit Board, Salary switch, Pot meter. If found faulty then replace it. If above tracing doesn't resolve the issue then we need to check Distribution Gear Box & mounted couple as describe in below resolution.

Abnormal noise or Burning smell in Distribution Gear box

Resolution :- First check oil level in G.B. if low level then top-up oil. Then uncouple the G.B. from engine mount disassemble the G.B. internals i.e. Helical Gears, Bearings and oil seals etc care fully verify the gear teeth and bearing movement is appropriate or not. If any item found faulty replace it and finally assemble the G.B. and mount it on Engine.

Paver moves with jerks during paving Operation

Resolution :- Check oil level in Traction G.B. if low level then top-up oil. Verify the T9 x 1.5" chain wheel teeth profile & internal spline also check Axial shaft external spline is correct or not, if not replace the C.W. & shaft. If problem persists then open the T.G.B top cover and verify the tooth profile of various gears & shafts if not correct replace that gear & Shaft. Also check bearing movement if not proper then replace the said bearing

Paver turning not as per steering inputs direction

Resolution :- First check steering hinges near front wheels verify its Key Slot not get wider and its fitment should be without free play. Also verify Tie Rod end fitment in Steering hinges is fixed firmly and its smooth movement. If above parts are not per requirement then replace it. Also verify bearing movement of Front Equalizer if not satisfactory replace the faulty bearing.