Safety Manual
Paver

Guidelines
for the Correct Use
and Application of
Pavers

Keep this manual for future reference

Order number for this manual: D717.41.00.52

22JAN2010
VALUE QUALITY
THE ORIGINAL

Your Authorized Dynapac Dealer:
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Safe operation of the machine requires specific knowledge that is imparted by the present operating instructions. The information is provided in a concise, clearly structured form. The individual chapters are arranged in alphabetical order and every chapter starts with page 1. The individual pages are identified by the chapter letter and the page number.

Example: Page B 2 is the second page of chapter B.

These operating instructions cover various machine options. Make sure that during operation and maintenance work the description appropriate to the machine option is used.

Safety instructions and important notes are identified by the following pictograms:

⚠️ **DANGER**

Danger is used to indicate the presence of a hazard which *will* cause severe personal injury, death, or substantial property damage if the warning is ignored.

⚠️ **WARNING**

Warning is used to indicate the presence of a hazard which can cause severe personal injury, death, or extensive property damage if the warning is ignored.

⚠️ **CAUTION**

Caution is used to indicate the presence of a hazard which will or can cause minor personal injury or property damage if the warning is ignored.

⚠️ **NOTICE**

Notifies people of installation, operation or maintenance information which is important but not hazard-related. Hazard warnings should never be included under the Notice indicator.

**NOTE:**

Note is used for supplementary information not directly effecting safety or damage to the equipment. Note can also refer to special information on the efficient use of the equipment.

In the interest of continued development, the manufacturer reserves the right to make changes to the machine (which will not, however, change the essential features of the type of machine described) without updating the present operating instructions at the same time.
1 General safety instructions

1.1 Acts, directives, accident prevention regulations

**NOTICE**

The locally applicable acts, directives and accident prevention regulations shall be observed, even if the attention is not specifically directed to these. The operator himself shall be responsible for the observation and performance of the related regulations and actions!

**NOTICE**

The following alerts, prohibitions and instructions refer to the risks to which people, machinery and environment are exposed.

**NOTICE**

Ignoring these instructions, bans and commands may lead to fatal injuries!

**NOTICE**

Furthermore, the Dynapac publication "Directives for the correct and specified application of pavers" shall also be observed.

1.2 Warning instructions

**WARNING**

Warning: areas of hazard or danger!
Not observing the warning instructions may lead to injuries or death!

**WARNING**

Warning: rotating parts!
Rotating parts or transport parts can cause severe injury or death!
Perform each operation only with equipment switched off!
**CAUTION**

Attention: electric voltage!

All maintenance and repair work on the screed's electrical system must always be carried out by an electrician!

**CAUTION**

Attention: suspended load!

Never stand under suspended loads!

**WARNING**

Warning: risk of crushing!

Operation of certain parts or functions and moving the machine can produce a risk of crushing.
Always make sure that no one is in the areas exposed to risk!

**CAUTION**

Caution: risk of hand injury!

**CAUTION**

Caution: hot surfaces or hot liquids!

**WARNING**

Warning, risk of falling off!

Falling can cause severe injury or death!

**CAUTION**

Caution: hazardous batteries!

Combustible gas can cause severe burns, blindness or death!

Keep sparks and open flame away from batteries.
Caution: materials harmful to health and irritating substances!

Caution: flammable materials!

Caution: gas bottles!
1.3 Prohibitive signs

It is prohibited to open / step on / reach into / perform / adjust during operation or when the paver engine is running!

Do not start the engine/drive!
Maintenance and repair can be carried out only with the Diesel engine turned off!

Do not spray with water!

Do not extinguish with water!

Unskilled maintenance is prohibited!
Maintenance can be performed by skilled professionals only!

NOTICE
Contact the Dynapac service for maintenance assistance!

Danger of fire: do not use open flame and no smoking!

Do not turn on!
1.4 Protective gear

NOTICE

The applicable local regulations may define the use of different protective gear! Observe these specifications!

Protect your eyes with goggles!

Wear appropriate head protection!

Protect your hearing with appropriate ear muffs!

Protect your feet with safety footwear!

Always wear tight, conforming working coveralls! Wear visibility vest for good visibility!

In case of polluted air, wear respiratory mask!
1.5 Environmental protection

**NOTICE**

The locally applicable acts, directives and waste disposal regulations shall be observed, even if the attention is not specifically directed to these. During cleaning, maintenance and repair operations, pollutants such as:

- lubricants (oils, grease)
- hydraulic oil
- gas oil
- coolant
- detergents

may not enter the soil or the sewer system!

These materials shall be collected, stored, transported in the correct containers until professional disposal!

Material harmful for the environment!

1.6 Fire prevention

**NOTICE**

The applicable local regulations may specify that appropriate fire extinguishers be mounted! Observe these specifications!

Fire fighting device
(optional equipment)
1.7 Further instructions

**NOTICE**
Observe the manufacturer's and other instructions!

(i.e. the maintenance instructions from the engine manufacturer)

**⚠️ WARNING**
Indicates a bottled gas heated design!

**⚠️ WARNING**
indicates an electrically heated design!
A Introduction (area of application, purpose)

The present guidelines are part of the operating instructions enclosed with every paver finisher. They contain notes on the correct use and application of paver finishers as well as information on improper use and potential risks, indicating also how these risks can be avoided.

⚠️ WARNING

Any unauthorized modification or alteration of the construction of the paver finisher can affect safety. There will be no liability for personal injury or material damage caused by unauthorized modification or alteration done to the construction of the paver finisher!
B Definitions

1 Correct application

Application for which the paver finisher is suited according to the specifications provided by DYNAPAC or by the authorized dealership.

2 Correct use

The manner in which the paver finisher is used.

3 User

An authorized person who either uses the paver finisher himself, or on whose behalf it is used. In special cases, such as leasing or renting, the user is considered the person who, in accordance with the contractual agreements between the owner and the user of the paver finisher, is charged with observance of the operating duties.

4 Expert

An expert is a person of adequate experience who has been specially trained, has acquired sufficient experience and is familiar with the applicable regulations and guidelines for safety at work and for the prevention of accidents as well as with the approved technical rules so that he can assess the condition of the machine in terms of safety.

Supervisor: A person charged by the user with instructing the operator on the correct use and application of the paver finisher and, if no other provisions have been made within the company or within the contract, with ordering any required or regular maintenance work as well as regular tests.
C Correct application and areas of application

1 Correct application of the paver finisher

Pavers must only be used for laying mixed materials, roll-down concrete or lean-mixed concrete, track-laying ballast and unbound mineral aggregates for foundations for paving. If a paver is to be used for other purposes, an approval from DYNAPAC and, if necessary, from the appropriate authorities must be obtained beforehand to avoid any risks.

**NOTICE**
Correct usage includes consulting and following the operating and maintenance instructions.

1.1 Damage, defects

Any damage or other defect on the paver or on its extensions must be immediately reported to the supervisor. Pavers and extensions that cannot be safely operated must not be used until they have been properly repaired.

Safety installations and switches must not be removed or rendered ineffective. Permanently set values may only be changed after an approval has been obtained from DYNAPAC.

1.2 Danger area

Apart from the operator on the operating stand, no other person must remain in the danger area of a paver finisher. The danger area is considered to be the area within which persons are endangered by the movements of the paver and its operating devices.

1.3 Regulations for the use of roadways and for the area of application

Only the roadways specially allocated for work by the user or his representative must be used. There must be no obstacles on these roadways.

1.4 Dangerous spots

Dangerous spots must be indicated using the usual traffic signs and any additional warning signs that may be required.

1.5 Slopes and inclines

Negotiating slopes and inclines are only permitted if they do not exceed the values specified by DYNAPAC.
2 Correct application of extensions

2.1 Using extensions

Extensions may only be applied as described in the pertaining operating instructions. The operator must have been trained in the operation of the attachments.

2.2 Allocation of extensions to the paver finisher

If the extensions have not been supplied by DYNAPAC, USA, the instructions provided by DYNAPAC, USA and by the manufacturer of the respective extension must be observed.

2.3 Mounting

The extension must be mounted according to the instructions provided by the manufacturer. Each time an extension is mounted, it must be checked for proper functioning before it may be used.

3 Operation

3.1 Emergency stop button

Pressing the emergency stop button (e.g. when someone enters the danger area, when the machine is no longer under control, etc.) causes the motor, the drives and the steering system to be switched off. The paver brakes to a standstill. Before the paver can be started up again, the cause of the malfunction must be determined and the malfunction eliminated. The finisher must then be started up again as described in the operating instructions.

3.2 System-specific devices

System-specific devices must be agreed upon by the user and by DYNAPAC, USA. Safety devices related to the paver must be checked at regular intervals.

4 Liability

⚠️ CAUTION ⚠️

If the paver is not used correctly, safe operation of the machine cannot be assured.

Dynapac USA, Inc. accepts no liability for personal injury or material damage resulting from improper use.
D Information about the paver

1 Description of the paver, the equipment and the extensions supplied

A description of the paver and its extensions can be found in the pertaining operating instructions.

2 Safety devices and warning signs

The safety devices described in the operating instructions must be used in the proper manner. All warning signs and warning notes must be observed.

3 Airborne sound and vibration

The noise limits specified in the operating instructions were established in accordance with EN 500-6 and ISO 3744.

However, the values given for the sound level of the paver cannot be applied for determining the noise emission at the workplace according to ISO standards. If necessary, the actual values must be determined on site under actual conditions (additional sources of noise, special conditions of use, sound reflection).

Vibration acting on the entire body:

When used correctly, the weighted effective values for acceleration defined by ISO standards are not exceeded.

These values are characteristic values of the paver finisher under defined conditions. If necessary, the driver’s exposure to vibration over a workday must be determined on site so that additional factors such as the distance travelled, the intensity, etc. can be taken into account.

4 Dimensions

The dimensions are given in absolute values to ensure safe manoeuvring. Any federal, state or local regulations must be observed.
E Driving permission

1 Driver seat and driver platform

Paver finishers with a driver seat or driver platform may only be operated by persons who are at least 18 years of age, who have been trained in the operation of paver finishers, who have demonstrated to the user or his representative their capability of driving and handling the paver finisher, and who have expressly been charged by the user or his representative with the operation of the paver finisher. In addition, special knowledge about the paver finisher to be operated is required.

2 Rights, duties and conduct of the driver

The driver of a paver finisher must have been informed on his rights and duties. All necessary rights must be granted to him. He should wear protective clothing suited for the operating conditions. The driver must be familiar with the operating instructions, and a copy of the operating instructions must be available to him at all times. The user must ensure that the driver has understood all information related to safety.

3 Prohibition of unauthorized use

The driver is responsible for the paver finisher during working time. He must forbid unauthorized persons from operating the paver finisher. When leaving the paver finisher, he must protect it from unauthorized use. The driver may only transport persons if the paver finisher is specially equipped for this purpose. The maximum number of persons that may be transported must not be exceeded.
4 Persons in the danger area

Before starting up and during operation of the paver finisher, the driver must make sure that there is no persons in the danger area. He must give a warning signal whenever a situation presenting danger to persons might develop. He must immediately stop work if any person, although asked, does not leave the danger area. All persons that are in the vicinity of the paver finisher must be informed of the dangers that can result from the operation of the paver finisher.

⚠️ WARNING

Do not climb or reach into moving parts.
### Travelling on public roads

**NOTICE**

Crawler-type pavers are not allowed to travel as self-propelled vehicles on public roads in the United States. Pavers with wheels may only use public roads for short distances in the United States. National regulations for using public roads with pavers must be observed.

### Checks to be carried out before starting daily work

Before starting up the paver, the driver must ensure that the machine can be safely operated. Before starting work:

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<th>How?</th>
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<tr>
<td>Emergency stop buttons on the operating panel and on the two remote controls*.</td>
<td>The diesel engine and all drives that are switched on must immediately stop.</td>
</tr>
<tr>
<td>Service brake** (pedal brake)</td>
<td>Step on the pedal while travelling at slow speed in the transport gear (with screed lifted). The paver must stop immediately and must not pull to one side.</td>
</tr>
<tr>
<td>Parking brake** (hand brake)</td>
<td>Pull the lever as far as possible while travelling at slow speed in the transport gear (with screed lifted). The paver must stop immediately.</td>
</tr>
<tr>
<td>Steering system</td>
<td>The paver must immediately follow all steering movements in a precise manner.</td>
</tr>
<tr>
<td>Horn - on the operating panel, - on the two remote controls*</td>
<td>Briefly press the horn button. The horn must be sounded.</td>
</tr>
<tr>
<td>Lights</td>
<td>With the ignition switched on, check the following lights by switching them on: - Parking/rear lights, low/high beam; - stop lights; - direction indicators, hazard warning lights</td>
</tr>
<tr>
<td>Hazard warning lights of the screed (with various screeds)</td>
<td>With the ignition switched on, press the switches for extending/retracting the extendable parts of the screed. The rear lights (if equipped) must flash.</td>
</tr>
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</table>

* Option  
** Paver with wheels
<table>
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<th>Check!</th>
<th>How?</th>
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<tr>
<td><strong>Gas heater system:</strong>&lt;br&gt;- Bottle holders&lt;br&gt;- Bottle valves&lt;br&gt;- Pressure reducer&lt;br&gt;- Hose break safety devices&lt;br&gt;- Closing valves of dual branch piping&lt;br&gt;- Main shut-off valve&lt;br&gt;- Connections&lt;br&gt;- Switch box control lamps</td>
<td>- Firm seating&lt;br&gt;- Cleanliness and tightness&lt;br&gt;- Operating pressure (1.5 bar)&lt;br&gt;- Proper functioning&lt;br&gt;- Proper functioning&lt;br&gt;- Proper functioning&lt;br&gt;- Tightness&lt;br&gt;- All lamps must be lit when the paver finisher is switched on.</td>
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<tr>
<td><strong>Auger cover</strong></td>
<td>For larger working widths, the width of the walkway plates must be increased and the auger tunnels must be covered. Hinged walkway plates must be folded down. Check that the side shields and plates and the covers are firmly seated.</td>
</tr>
<tr>
<td><strong>Screed covers and walkway plates</strong></td>
<td>When the screed is lifted (using the lever underneath the seat), it must be possible to push the locking rods sideways into the recesses in the crossbeam.</td>
</tr>
<tr>
<td><strong>Hopper transport safeguards</strong></td>
<td>When the hopper is closed, it must be possible to fold the catches over the lock studs on the two halves of the hopper.</td>
</tr>
<tr>
<td><strong>Protective roof</strong></td>
<td>Both locking bolts must be in the provided bore hole and secured by means of a split pin.</td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>Check that the hoods and the flaps are firmly seated:&lt;br&gt;- motor hood&lt;br&gt;- lateral flaps</td>
</tr>
<tr>
<td><strong>Accessories:</strong>&lt;br&gt;- wheel chocks&lt;br&gt;- warning triangle&lt;br&gt;- first-aid kit</td>
<td>The accessories must be in the provided holders.</td>
</tr>
<tr>
<td><strong>Option</strong></td>
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<tr>
<td><strong>Paver with wheels</strong></td>
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7 Functions of the controls and display instruments

Follow all information given in the operating instructions on these items.

7.1 Starting up

**WARNING**

Starting the engine, the traction drive, the conveyor, the auger, the screed or the lifting devices can cause injuries or even the death. Make sure before starting any of these devices that no-one is working at, in or beneath the paver or within its danger area! Do not start the engine and do not actuate any controls when this is expressly forbidden! Unless otherwise specified in the operating instructions, the controls may only be actuated when the engine is running! Never crawl into the auger tunnel or step into the hopper or onto the conveyor when the engine is running. A moving auger or conveyor can cause severe injury or death!

**CAUTION**

Never start this machine in an environment where it is believed explosive gases may be present, and never work in enclosed, unventilated rooms below ground level / underground. Always remember that the engine emits toxic and potentially lethal gases. Always ensure that the working area is well ventilated.
Only mount or dis-mount the machine while the machine is stationary. Use the handles and retaining fixtures provided. Never adjust the driver's seat while the vehicle is in motion because the seat position may alter accidentally in the process. After setting the backrest position, check that it is properly secured in this position. When driving, always remain seated on the driver's seat.

7.2 Action after the start-up

- Check that all instruments display readings.
- Ensure the machine is working properly, and also check that it responds correctly to all its controls – especially the brakes. The instructions in the operating manual apply at all times.
- If you detect any malfunctions, switch the engine off and fit an appropriate warning label when leaving the machine.

7.3 Starting at low ambient temperatures

Follow the instructions for starting at low ambient temperatures. When using starter gas, always follow the manufacturer’s instructions for the type of gas being used.

When starting the engine with the help of jumper cables, follow instructions precisely. Otherwise there is a risk of serious injury and damage to the machine, electrical damage and damaged electronic equipment resulting from a battery explosion, corrosive acid etc.

Remove all the cell covers and place a cloth over the openings on the battery cells (this does not apply to zero-maintenance batteries).

Ensure that no sparks can be caused when connecting the cables.
7.4 Conduct during travelling

Always make sure during operation that no-one is endangered by the machine!
Ensure that all protective covers and hoods are fitted and secured accordingly!
When damages are detected, eliminate them immediately! Immediately stop operation when the paver finisher is defective!
Do not let any persons ride on the paver finisher or on the screed!
Remove any obstacles from the road and the work area!
Always try to choose a driver position that is opposite to the flowing traffic! Lock the operating panel and the driver’s seat.

While travelling,

- do not allow arms and legs to hang out of the driver stand,
- do not lean beyond the outer edges of the paver finisher,
- do not climb from one vehicle onto another or onto permanent structures.

Keep a sufficient safety clearance to overhanging objects, other machines and points of danger!
Be careful when travelling on rough terrain to keep the paver finisher from slipping, tipping or turning over.
Never use the paver finisher beyond its capabilities to avoid losing control over the machine!

⚠️ WARNING

Whenever the machine is operating, someone must always be in the driver’s seat at all times. Where necessary, wear a seatbelt.
7.5 Visibility

The driver must look in the direction of travel and must always have a clear view of the route ahead. Especially when driving in the reverse direction, he must ensure that his path and the working area are clear.

The machine must be equipped with the specified lighting equipment to suit prevailing working conditions. Check that all equipment operates in accordance with specifications. All headlights must be adjusted in such a way that other road users are not blinded by glare.

7.6 Braking

The driver must select a travelling speed that always provides a sufficient braking distance.
F  Installation, maintenance and charging of batteries

Always observe federal, state and local legal stipulations for the installation and operation of battery charging stations. Take special care to ensure that the batteries cannot be tipped over. The battery contains corrosive and toxic sulphuric acid.

**WARNING**

Wear protective goggles and avoid getting any sulphuric acid on skin, clothing or the machine. However, if you do come into direct accidental contact with sulphuric acid, immediately remove all affected items of clothing. Rinse your skin immediately for a 15-minute period under running water. If you get battery acid in your eyes, flush your eyes with water for at least 15 minutes, then go straight to the doctor. If possible, en route to the doctor, keep applying water to the injured eye with the help of a sponge or faceloth.

1  **Maintenance personnel**

Only specially trained personnel may charge, maintain and exchange batteries. When doing so, they must follow the instructions provided by the manufacturers of the battery and the battery charger and by DYNAPAC. The instructions for handling the battery and the operating instructions for the battery charger must also be observed.

2  **Fire protection measures**

**WARNING**

Do not smoke or use open flames when handling batteries. There must not be any flammable substances or spark-generating materials within a distance of 20 ft (about 2 m) from the battery to be charged and the battery charger. The location must be well ventilated and fire fighting equipment must be kept ready.
3 Rendering the paver safe

If work is to be carried out on the battery, the paver must be rendered safe as described in the operating instructions. The paver may only be started up again after all hoods and connections have been reverted to the normal state required for operation.

4 Battery installation

The battery must be installed in the paver according to the instructions provided by DYNAPAC to avoid any hazards resulting from unexpected movements. Check and, if necessary, replace the battery seat every time the battery has been exchanged.

5 Damaged cables

When removing and installing batteries, make sure the battery cables are not damaged. Before starting the charging process, check the battery cable and the charger cable for damage and replace them if necessary.

6 Maintenance of the battery

The battery cell covers must be kept dry and clean. Spilled battery acid must be neutralized immediately. Terminals and cable shoes must be clean, lightly greased with terminal grease and securely tightened.

7 Charging the battery

During the charging process, the tops of the battery cells must be exposed and the caps must be removed to ensure adequate ventilation and thus prevent explosive gases from collecting. Do not place any metal objects on the battery.
G Refuelling pavers

1 Approved fuels

Only the fuels specified in the operating instructions may be used.

2 Refuelling

The federal, state and local regulations for storing and handling liquid fuels must be observed.

⚠️ DANGER ⚠️

Do not smoke or use open flames when refuelling the paver finisher or checking the filling level of the tank. Make sure that no fuel is spilled and that no fuel drops onto hot parts.

Safety measures when filling the fuel tank:

- Switch off engine
- Do not smoke
- No open flame near the machine
- Do not fill the fuel tank in enclosed spaces.
- Ground/earth the tank filler nozzle on the tank to prevent sparks from forming
- Always check that you are filling the correct tank with the correct fluid
- Always allow spilled fuel to dry before starting the engine
- Check that the tank cover is securely screwed down to prevent fuel from escaping in the event of an accident.

Ensure that no fuel comes into contact with hot components.
Park the machine on a flat, clean surface which enables you to spot any fuel escaping or leaking. If fuel is escaping or leaking, clean and dispose of it immediately.

**WARNING**

Fuel is flammable. May cause serious injury or death. Shut down engine, extinguish all open flames, and do not smoke while filling fuel tanks. Always wipe up any spilled fuel immediately.
H Guidelines for handling the gas heater system

**DANGER**

There is a danger of fire and explosions when handling gas bottles and working on the gas heater system. Do not smoke! Do no use open flames!

1 Transportation

Before transporting full or empty gas bottles, make sure the protective caps are fitted to protect the bottles valves.

2 Securing the gas bottles

Use the supplied strap retainers to secure the gas bottles on the paver finisher so that they cannot turn, tip over or fall down. Do not operate the gas heater system without the hose break safety devices and the pressure reducing valves.

3 Cleaning

Keep the gas bottle valves, the hoses and the hose connections free from oil and grease. Immediately remove any dirt. Keep the vent holes and slots on the screed free.

4 Prior to operation

Before putting the heater into operation, check the entire heater area for leaking gas lines. Immediately replace damaged hoses.

5 Breaks

Immediately switch off the gas heater when taking a break or terminating work:

- Switch off the On/Off switch in the switch box.
- Close the main shut-off valve, the two closing valves on the dual-branch pipe and the two bottle valves.

6 Maintenance

Follow the maintenance intervals for the gas heater system.
Check the flame control (option) for proper functioning.
Have the operational safety checked by an expert once a year. The responsibility for this check lies with the user of the machine.
1 Guidelines for handling the hydraulic system

1 Connecting or disconnecting hydraulic hoses

When connecting or disconnecting the hydraulic hoses or working on the hydraulic system, hot hydraulic oil can escape at high pressure. Starting the engine and the hydraulic drives (traction drive, conveyor, auger, screed, lifting devices) can endanger persons. Switch off the motor and depressurize the hydraulic system! Protect the eyes!

2 Work on the hydraulic system

Only carry out such work with the finisher motor at a standstill unless the instructions state the opposite!

Make sure the paver is secured against being put into operation and mechanically secure lifted machine parts (hopper halves or screed) from lowering (see the operating instructions).

Do not bend hydraulic lines or hit against them! Do not reuse any damaged pipes or hoses!

Carefully check all lines for leaks! All screwed connections as well as other connections must be properly tightened!

**NOTICE**

Regular maintenance of the hydraulic system is important. These machines operate with high oil pressure. Minor damage or a crack in a hose or connection can have devastating consequences. Bear in mind that hydraulic hoses are made of rubber, which means that they age over time and that this can cause cracks to start forming. If there is the least doubt about the durability of hoses, or if damage is detected caused by mechanical wear, replace the hoses using genuine Dynapac hoses. Never store hoses for excessively long periods: hoses need to be used while still relatively new.

Bear in mind that the hydraulic system may be pressurized even after the machine has been shut down and parked. Always work on completely depressurized systems. During any inspection of the hydraulic system, you must wear protective goggles and gloves at all times. You are advised to use a piece of cardboard to find any signs of leakage – never reach in with your hand to feel for leaks.

**WARNING**

Seek immediate medical attention if hydraulic oil permeates the skin, or if oil gets into the eyes.
Exercise great caution when filling with hydraulic oil from the moment the tank filler cap is removed. Smoking and naked flame are prohibited from the area when filling with hydraulic oil. Always allow time for escaped oil to be cleaned up.

**NOTICE** Check that the pressure relief valves are set correctly. Excessive pressure can give rise to hose ruptures and damage. If the pressure is too low, the machine may prove more difficult to manoeuvre.

3 Extension parts, modification parts and spare parts

Always install extension parts, modification parts and spare parts in the proper manner. In case of doubt, contact DYNAPAC!
J Transportation, commissioning and storage

1 Weights and dimensions

**NOTICE**

For weights and dimensions, see the operating instructions.

2 Transportation

The requirements listed in the operating instructions by DYNAPAC must be observed when transporting the paver finisher.

2.1 Transportation on low-bed trailers

2.2 Personal safety

**WARNING**

Loading or unloading of a machine from another vehicle can be hazardous.

**DANGER**

Never stop under or directly beside a machine which is being loaded or unloaded. Never attempt to move the machine or the tractor by hand. Be aware of the risk of getting trapped or snagged during loading and unloading work.

2.3 Transport vehicle

The transport vehicle must always comply with the requirements for transport i.e. gross weight, engine power, braking capacity etc. The transport vehicle must also be specifically intended for the transport of machines.
2.4 Loading and unloading with the help of a ramp

Large machines are loaded and unloaded with the help of a ramp. Always ensure that the ramp is intact. It is best to use a non-slip metal ramp. Never use wooden ramps, which are of inferior quality. Check that the ramp is properly secured to the transport vehicle and to the ground. Also keep the ramp completely clear of oil, snow, ice or slush at all times.

⚠️ CAUTION

Ensure that everyone is away from the machine in case the machine tips or slips off of the truck. Always use a signalman standing outside the danger area and within the field of view of the driver in these operations.

The driver must always obey signals from the official signalman.

Ensure that the transport vehicle is secured with brake blocks and that the pull rod is jacked up. Secure lifting chains to the machine and winch on the transport vehicle. Always use sufficiently powerful chains or steel cables: never use single cables.

When lifting the machine, always use cranes with adequate lifting capacities.

⚠️ WARNING

Maintain a safe distance from tensioned chains or cables.

Ensure you comply with the correct loading dimensions, especially overall width and height.

Ensure that the machine is cleaned before every transport operation.

Winch up the machine. Apply the parking brake/emergency stop switch on the machine. Secure the machine properly on the transport trailer (refer to instruction manual). Check that there are no loose parts on the machine.

3 Assembly of the paver and mounting of extensions

For assembling parts of the paver on site or mounting extensions, the pertaining specifications in the operating instructions must be observed. Prior to commissioning, check for the proper functions of the paver and of any extensions must be checked by an expert.
4 Checks prior to commissioning

Prior to commissioning, the paver must be checked according to the specifications in the operating instructions.

Items to be checked include, for example:

- engine oil level
- fuel level (to fill tanks)
- electrical system: electrical lines, cable connectors and cable connections (to be checked for damage and firm seating)
- battery: acid level and acid density
- hydraulic system: oil level
- brake system
- steering system
- extensions
- any automatic functions

5 Measures to be taken when decommissioning the paver for longer periods of time, storage and disposal

If the paver is to be decommissioned for a longer period of time, appropriate measures must be taken to protect it from corrosion. The battery must be removed and the fuel tank(s) must be topped off. Paver with wheels must be jacked up and supported to prevent the tires from flattening.

After worn parts or spare parts have been replaced or if the machine is to be placed out of service (scrapped), the individual materials must be properly sorted and disposed of. Iron, nonferrous metals, plastics, electronics, etc. must each be separately disposed of. Parts that have come into contact with oil or grease (hydraulic hoses, lubrication lines, etc.) must be separately treated.

NOTICE

Refer to the Operation manual pertaining to the operating instructions.
6 Transportation on public roads

If the machine is located outside fenced off construction sites (for example, when being relocated, transported or parked), the operator must carry out all specified lock-down and securing measures.

Before every road journey, always clean the wheels or track drives.

Check the permitted transport height/width (protective roof, steps, ladders etc.). When negotiating bridges, tunnels, overhead wires, underpasses etc., always ensure that you maintain a safe distance from them at all times.
Before driving over cellar roofs, hump-back structures, bridges etc., always first check that they are capable of supporting the weight of the machine.

Agree on a set of clear signals and hand signals with your signalman and with all construction site personnel involved (i.e. truck drivers).
K Maintenance and repairs

1 Training and qualification requirements for personnel to be charged with maintenance and repairs

Maintenance work may only be carried out by qualified, authorized personnel. The yearly inspection must be carried out by a qualified, experienced specialist. This specialist must assess the condition of the paver and its extensions from a standpoint purely concerned with safety aspects, uninfluenced by any company-related or economic aspects. This person must be adequately trained and experienced to be able to assess the condition of a paver and the effectiveness of the safety installations on the basis of the technical rules and on the principles governing the inspection of pavers.

2 Kind and frequency

2.1 Maintenance and inspection intervals

The intervals must be chosen according to the specifications provided by DYNAPAC, USA. See the operating instructions.

2.2 Regular inspections

The yearly inspection carried out by a specialist must include a check of the technical condition of the components and installations as well as a check of the safety devices for completeness and effectiveness. Apart from this, the paver must be thoroughly checked for damage possibly caused by incorrect use. The inspection results must be recorded in an inspection report which must be kept available for a period of at least the next two inspection intervals. The user has to ensure that all defects are eliminated without delay.

⚠️ CAUTION

To prevent the risk of fire, immediately repair or replace any damaged oil and plastic lines as well as any leaking hoses and pipes. Inspect the electrical wiring and plug connections for chafing points. Take immediate corrective action if you find any defective areas.
Check that all arrester cables, bolts and other retaining elements are properly mounted and in perfect condition.

3 Quality and amount of operating materials required

Only the operating materials specified in the operating instructions may be used.

4 Spare parts

Only the spare parts specified by DYNA-PAC may be used. Using spare parts that have not been released can lead to an increased risk of accidents due to insufficient quality or incorrect allocation. Anybody who uses spare parts other than those approved of will be fully liable for any resulting damage. Hydraulic hoses must be stored in such a manner that they cannot prematurely age.

5 Maintenance work that does not require any special qualification

Simple maintenance work such as checking the oil level or checking the acid level in the battery may also be carried out by persons who have not received special training. This kind of work does not require any qualification. See the operating instructions for more details.
6 Disposal of greases, oils, batteries, lubricants and diesel fuel

The substances left over after repairs, maintenance and cleaning must be properly collected and disposed of according to the national regulations. Repair work, maintenance and cleaning may only be carried out at the locations provided for this purpose. These substances are extremely harmful to the environment; therefore, they must be prevented from penetrating the soil or entering drains. These substances and any items that have come into contact with these substances (containers, cleaning rags, etc.) must be disposed of by the appropriate collecting stations for used oil and hazardous waste. Information on the applicable regulations for disposal can be obtained from the local authorities.

7 Special measures

7.1 Preparation of repair and maintenance work

Before starting work on the machine, find out the location of fire extinguishers, first aid materials and the telephone for reporting emergencies.

Use common sense to help prevent incidents and accidents. If an accident occurs despite these precautions, stay calm and act swiftly and effectively – first of all to save human life and secondly to prevent damage to equipment.
For your own protection, always wear:

- Helmet
- Protective working gear with nip protection
- Ear defenders
- Work gloves

When required, wear protective goggles.

Smoking and any use of naked flame or hot objects are prohibited at all times in the working environment. During welding work, preparations for repair and maintenance.

Always fit a label to the machine whenever repair work is in progress. Shut down the battery using the battery isolator switch and keep the key safely in your pocket. Ensure that the machine is clean.
To prevent accidents during maintenance and repair work, take all necessary safety precautions, e.g.:

- If necessary, disconnect the battery to prevent the engine from starting up accidentally.
- If any maintenance or repair work requires the engine to be kept running, always work in the company of a second trained specialist who can stop the machine in any emergency situation.
- Secure the wheels or tracks with chocks to prevent accidental movement in both directions.
- Open up both halves of the hopper.
- Secure the screed and, if necessary, the auger.
- Never carry out work on hopper, conveyor or auger while the machine is running. Danger to life.

- During assembly work above body height, always use the proper lifting equipment and working platforms. Never use machine components as climbing aids. If maintenance work is required at greater heights, always wear safety harnesses and associated equipment.
Do not work on the machine while the engine is running. It is important to keep the engine cover closed at all times while the engine is running. When starting up the machine inside a building, connect the exhaust to a ventilation system to prevent exhaust gases from building up in a confined space.

- If any safety equipment needs to be dismantled to allow maintenance or rigging work to be carried out, always ensure that it is reattached or reinstalled following completion of that work.
  Fit the correct number of warning notices to the machine, and ensure that they are all clearly legible.

### 7.2 Raising and lowering

If the machine needs to be lifted for maintenance or repair work, ensure that it is properly supported.
Always use appropriate sizes of lifting and load-bearing equipment.
Always locate lifting equipment on level surfaces which are capable of bearing the weight of the machine.
Always fit lifting fixtures to the approved lifting points on the machine.

Always use a reliable vehicle jack when lifting the machine. Never leave the vehicle standing in a raised position if supported only on the vehicle jack.
7.3  Welding work

If welding work or other work involving great heat or naked flame needs to be carried out, drain and ventilate the tanks thoroughly. During welding work on the tanks, fill them with water. Always ensure that a fire extinguisher is located close to the workplace. During electric arc welding, always check that the battery connection is isolated, i.e. switched off.

⚠️ WARNING

Never weld near plastic or rubber materials because these release toxic gases when heated.

When working on the electrical system, always ensure that the battery connector is isolated, i.e. switched off.

⚠️ CAUTION

Never use petroleum/gasoline for cleaning purposes. Store materials which constitute either a fire hazard or a health hazard in well sealed containers whenever these materials are not required. Wear a breathing mask whenever you are using materials which constitute a health hazard.
7.4 Working on the diesel engine

Exercise great caution whenever the engine is running. Whenever possible, always switch off the engine before starting any work on it. On completion of work, reinstall any protective equipment or guards you may have removed. When working on the engine, never wear loose clothing which might snag. Always take note of the warning notices contained in the engine manufacturer’s manuals. Allow the engine to cool down before starting work on it.

⚠️ WARNING

If allowing the engine to cool before starting work on it, always wear protective clothing to prevent burns.

⚠️ WARNING

When draining hot engine oil, always wear protective clothing to prevent burns.

⚠️ WARNING

The vee-belts must always be inspected or tensioned while the engine/drive system is switched off. Rotating belts and pulleys can cause severe injury. Do not wear loose clothing around rotating belts and pulleys.
7.5 Working on the cooling system

Switch off the engine before examining the system. If possible, allow the engine to cool down. If the engine is still hot, exercise great caution when opening the cover on the coolant tank. Wear robust gloves, clothing and protective goggles. Do not remove the cover from the coolant system until the system is fully depressurized. Exercise caution when filling a warm container with cold fluids.

⚠️ WARNING

The cooling system is a pressurized system. Hot coolant can cause serious burns. To open the cooling system filler cap, stop the engine and wait until the cooling system components are cool. Loosen the cooling system pressure cap slowly in order to relieve the pressure.

⚠️ CAUTION

Do not add cold coolant to a hot engine. Engine castings can be damaged. Allow the engine to cool to below 120° F (50° C) before adding coolant.

⚠️ WARNING

Injury can occur when removing the radiator cap. Steam or fluid escaping from the radiator can burn. Inhibitor contains alkali. Avoid contact with skin and eyes. Always shut down the engine and allow it to cool down before removing the radiator cap. Remove the cap slowly to relieve pressure. Avoid contact with steam or escaping fluid.
7.6 Cleaning

Inflammable liquids must not be used for cleaning the paver finisher and its extensions. All safety measures required to prevent sparking by short-circuits must be taken (for example, disconnecting the battery).

If the paver finisher is to be cleaned using hot water, all components that should not get wet - especially the electrical components - must be carefully covered.

⚠️ WARNING

When using compressed air, water jets or steam cleaning methods, ensure that appropriate protective clothing is worn to protect eyes and exposed parts of the body. Maximum air pressure at the nozzle must be less than 30 psi (205 kPa) for cleaning purposes.

⚠️ CAUTION

Do not use caustic solutions on the coolers as they may degrade the fin material and cause a leak.

Electrical and electronic components must be cleaned using weak compressed air and a metal-free brush.

For cleaning work, never use readily flammable substances such as petroleum/gasoline and never use aggressive cleaning agents. When working with greases, oils and other chemical agents, pay due attention to the safety regulations applicable to this product.

⚠️ WARNING

Many chemical cleaning agents are flammable. They may cause serious injury or death. Shut down engine, extinguish all open flames, and do not smoke while using chemical cleaning agents. Always wipe up any spilled chemical cleaning agents immediately.
7.7 Work on the electrical equipment

Work on the electrical equipment of the paver may only be carried out after the paver has been deenergized. Before starting work on electrical equipment or the batteries, the main switch must be switched off and the batteries must be disconnected.

⚠️ CAUTION ⚠️

Improper work on the electrical equipment can cause short-circuits, explosion of the batteries or damage to the on-board electronics.

Function checks, inspections and adjustments on live parts may only be carried out by trained persons who have been charged with these tasks. When carrying out this work, the appropriate precautions must be taken. Rings, metal bracelets, etc. must be removed before starting work on electrical components.

To prevent any damage to electrical systems comprising electronic components, these systems must be removed from the paver finisher or disconnected before any welding is undertaken.

⚠️ NOTICE ⚠️

Components bearing this symbol may only be opened, check and replaced by trained electricians.

⚠️ WARNING ⚠️

Monitoring and repair work on electrical systems with medium levels of voltage, i.e. the screed heating system, must always be carried out by trained electricians or persons instructed in electrical engineering work and only using appropriate test equipment. Always comply with relevant technical electrical protection precautions. Danger to life can result in accidents involving medium voltage levels.
Wheel-driven paver operators must check the tires on a daily basis for signs of damage, cracks or blister formation. Never work with the tire pressure too high or too low. Check that all wheel nuts or bolts are fitted, and that they are correctly tightened.

**DANGER**
A tire explosion can cause serious or even fatal injury. Always maintain the correct tire pressure. Never run the machine with tires above their specified tire pressure level.

**NOTE:**
A slight increase in tire pressure during operation is normal and there is no need to relieve pressure. If necessary, allow overheated tires to cool.

**WARNING**
Always set the tire pressure using a self-regulating filler connection. Never stand directly in front of the tires when filling them with air.

**WARNING**
Never do welding work in the immediate vicinity of the tires. Before carrying out repairs on a wheel rim, first depressurize and remove the tire.
7.9 Safety installations

After maintenance work and repairs have been completed, all safety devices and assemblies must be reinstalled and checked for proper functioning.

7.10 Settings

When repairing or replacing hydraulic or electrical components, the component settings must be retained.
Additional notes regarding safety

1 General hazardous situations

1.1 Crushing warning!

⚠️ WARNING

Warning: risk of crushing!

Operation of certain parts or functions and moving the machine can produce a risk of crushing. Always make sure that no one is in the areas exposed to risk!

⚠️ CAUTION

Keep away from areas where there is a risk of being crushed!

1.2 Rotating parts warning!

⚠️ WARNING

Warning: rotating parts!

Rotating parts or transport parts can cause severe injury or death! Perform each operation only with equipment switched off!

⚠️ CAUTION

Be alerted of areas with rotating parts!

1.3 Danger of falling!

⚠️ WARNING

Always use both hands when climbing onto or down from the paver finisher or its extensions! Do not hold any tools or other items in your hand. Never jump onto or down from the paver or its extensions while travelling! Only climb onto or down from the paver or its extensions while the paver is at a standstill. Only use the steps and access boards provided for this purpose! Do not stand on other parts.
1.4 Hot surface warning!

**WARNING**

Several areas on the machine (i.e. screed body, exhaust system, hydraulic cylinders) generate hot surfaces. Hot surfaces can cause severe injury.

**CAUTION**

Be aware of hot surfaces! Use protective clothing when working with hot surfaces!

1.5 Malfunctioning equipment warning!

**WARNING**

A malfunctioning of the paver or failure of its safety devices can result in failure of the steering and braking functions, uncontrolled movements of components and leaks.

**CAUTION**

Immediately stop the paver if such a malfunction occurs! Warn persons of the risk of danger!

1.6 Danger resulting from misconduct!

**WARNING**

Misconduct, horse play, carelessness and operating errors can cause severe injury to persons and serious damage to equipment. Always act in a responsible manner.
2 General rules of conduct

2.1 Protective clothing

Always wear all required protective clothing! Missing or carelessly used protective clothing can cause damage to your health.

For your own protection, always wear:
- Helmet
- Protective working gear with nip protection
- Ear protections
- Reflective clothing
- Work gloves
- When required, wear protective goggles.

2.2 Cleanliness

Keep the operating platform, the access ladders and the steps clear! Keep the access ladders, the hand grips and the operating platform free from dirt, grease, etc. and do not spray them with solvents.

2.3 Parts

Properly secure all loose parts and stow them in the provided boxes. The doors, containers, boxes etc. must all be properly closed and secured.

2.4 Visibility

The view of the travelling and working area must never be obstructed.
2.5 Noise

The noise produced by the motor and by other construction machines can interfere with communications (commands, warning cries or horn signals).

2.6 Surroundings

Always keep an eye on the entire area around the paver! Maintain visual contact with the spotter or guide! Agree on the signals to be used with the spotter (guide) and only follow the signals given by the spotter (guide).

2.7 Vibration

The vibrations resulting from the operation of the paver can cause operator concentration and efficiency to deteriorate.

Take a break or ask to be relieved before this occurs!

2.8 Inadvertent starting

Always avoid switching on or starting the machine inadvertently or accidentally.

Remove the ignition key immediately after the motor has been switched off!

Secure the operating panel using the lockable hood and remove the main switch of the battery.
2.9 Parking

If the paver obstructs traffic when parked, secure it by conspicuous means (warning signs, lamps, etc.)!

Allow the hopper, conveyor and auger to run until empty.
Never park the machine in front of steps/stairways, docks, hydrants or similar items.
The height-adjustable equipment components must be lowered and may need to be secured in this position.

Always park the machine in such a way that it does not obstruct other traffic and cannot give rise to dangerous situations, especially during the hours of darkness. Red reflective strips must always face the direction of oncoming traffic. Always park the vehicle on firm, level ground. Always use the parking brake or emergency stop equipment.

Always use brake blocks when parking for extended periods. Never leave the machine without first making sure that it is unable to roll in any direction.

2.10 Switching off the engine

Always switch off the engine in accordance with the instruction manual. Never switch off the engine while the machine is still in motion.

Always remove the main battery isolator to prevent unauthorized persons from using the machine.

Always mount or dis-mount the machine while it is at a complete standstill. Use the handles, fixtures and steps provided. Never jump off the machine. When boarding and getting off of the machine, you should always maintain 3-point body contact with the machine, i.e. always move one hand or foot at a time.

2.11 Repairs

Immediately do any and all repairs required!

2.12 Miscellaneous

Secure machine parts that have been lifted or folded up from falling down or tipping.
Mark open flaps (with a light-colored piece of cloth or similar).

Keep unauthorized persons away from the paver.
3 Measures to be taken in emergencies

If no other measures are stipulated by law or internal regulations, the following measures must be taken in an emergency:

3.1 General measures

- Press the emergency stop button, remove the ignition key and switch off the main switch at the battery (by turning and pulling it).
- Stay calm!
- Avoid additional damage!

3.2 Accidents

- Render the scene of the accident safe (also within the construction site).
- Give first aid. Call a doctor.
- Alert the authorities if the accident happened on a public road.

3.3 Gas leaks

- Close the main shut-off valve and both bottle valves.
- Stub out burning cigarettes at a safe distance.
- Prevent the remaining gas from leaking out.

3.4 Leaking liquids

- Prevent the remaining liquid from leaking out.
- Collect diesel fuel and oils using a suitable, approved container.
- Alert the authorities if diesel fuel or oils enter the soil.
- Spread a binding agent over oil that has leaked out.

3.5 Fire

- Call the fire department.
- Only fight the fire if you do not endanger yourself.

3.6 Short circuit

- Switch off the main switch to the battery.
- Prevent a fire.
- Eliminate the cause of the short circuit.

3.7 Technical malfunctions

- Determine the cause of the malfunction.
- To eliminate the malfunction, refer to the operating instructions.
4 Notes regarding operation

Starting the engine, the propel system, the conveyor, the auger, the screed or the lifting devices can cause injuries or even the death of persons.

Make sure before starting any of these devices that no-one is working at, in or beneath the paver or within its danger area!

- Do not start the engine and do not activate any controls when this is expressly forbidden!

Unless otherwise specified, the controls may only be actuated when the engine is running!

**WARNING**

Never crawl into the auger tunnel or step into the hopper or onto the conveyor when the engine is running. This can result in severe injury or death!

- Always make sure during operation that no-one can be harmed by the machine and all persons are at a safe distance from the machine!
- Ensure that all protective covers and hoods are fitted and secured accordingly!
- When damages are detected, eliminate them immediately! The machine must not be operated when it is defective and requires repair!
- Do not let any persons ride on the paver or on the screed!
- Remove any obstacles from the road and the work area!
- Always try to choose a driver position that is opposite to the flow of traffic! Lock the operating panel and the driver’s seat.
- Keep a safe distance from overhanging objects, other machines and points of danger!
- Be careful when travelling on rough terrain to keep the paver finisher from slipping, tipping or turning over.
- Always keep control of the paver finisher; never try to use it beyond its capabilities!

4.1 Be aware of the following:

- Whenever the engine is running, never leave the driver’s seat without setting the drive lever to zero and shutting down all automatic functions.
- Always operate the machine carefully.
- Always keep the working area well supervised, especially when reversing the machine.
- Always keep a watchful eye for any possible signs of damage to the machine. Look for and listen for anything out of the ordinary. Rely on the sense of smell as an extra tool for detecting spilled fuel, burnt wires, hot oil or any thing else that may smell out of the ordinary.
- Do not inhale exhaust gases (these gases include carbon monoxide, which can be lethal).

- Always drive at a speed where the machine is fully under control so that at any time the machine can safely be brought to a complete stop.

- All work must be stopped immediately if ever anyone ignores warnings and moves inside the danger area.
5 Working safely

- Use the paver and equipment properly. Do not “misuse” them! Misuse of equipment may lead to severe injury or death!
- Be familiar with and heed all co-workers' signs and signals.
- Always monitor other workers and machines on the construction site!
- When working with heavy accessories, always observe the valid regulations and protective measures for raising heavy loads!
Operation with feeder

**NOTICE**

Please observe the following requirements when the paver is operated with a feeder:

- Always keep material transfer from the feeder to the paver centrally above the paver's material container to avoid endangering personnel due to hot material!
- Personnel must not enter the area between the feeder and the paver!
- Note that the paver's operating weight and braking characteristics change due to the use of an additional material container.
- Implement additional precautionary measures if visibility is limited due to an additional material container in the paver's hopper.

- Park the paver securely and pull the main battery switch before carrying out work on the additional material container in the paver's hopper!
Operation at night / night work

- Night time operations differ fundamentally from operations during daylight! Maximum attention is always required during night time operations! Persons passing the construction site area may possibly be unaware of the dangers which exist!

- Plan and discuss the operation carefully. Inspect the working area regularly during daylight and mark obstacles and danger points with reflectors or other suitable aids!

- All operating personnel must wear suitable, reflective protective clothing during night time operations!

- Make sure that the construction site area is adequately illuminated. Observe the local illumination regulations!

- Make sure that displays and controls are clearly visible and easily legible!

- Make sure that the paver finisher is adequately equipped with warning lights (rotary beacons, etc.). Observe the local regulations regarding warning lights!
- Always work using direct visibility at night. Do not use mirrors! If direct visibility is not possible, use official signalmen. Lighting can be reflected by mirrors, causing risks due to overlooking and blind spots.
- The lack of natural light increases the risk of being hit by vehicles or equipment!
- Always align the working lights so that blinding the operating personnel or other road users is avoided.
- Always be aware of the current locations of other workmen. Also inform other workmen around the area that the machine is moving.
- Avoid fatigue! Also check your co-workers for fatigue.
- Remain only in the assigned working areas.
- Always enter and leave the paver finisher on the side away from traffic.
Asphalt fume control system

- Always use the asphalt fume control system when paving hot material mixtures!
- Ensure that no paving material or other foreign bodies are able to enter the asphalt fume control system!
- Park the paver securely and pull the main battery switch before carrying out maintenance work on the asphalt fume control system!
- Ensure that sufficient clearance is available between the asphalt fume control system's air outlet pipe and obstacles such as bridges and overhead power lines!
Driving over unsure ground

Avoid driving close to curbs, roadworks (i.e. excavations) etc. Always bear in mind that humidity and poor ground conditions can adversely affect the load-bearing capacity of the machine. Pay careful attention to obstacles which may exist above the machine, e.g. low-hanging overhead power lines, branches etc.

⚠️ WARNING

Whenever working near electrical power lines, ensure that the machine never comes into contact with them. High voltage can cause severe injury or death!
Information must be obtained about the correct safety distances.

The following points must be observed if the machine makes contact with high-voltage power lines:

- Never leave the machine.
- If possible, the machine must be driven out of the danger area.
- Warn people to prevent them from approaching and touching the machine.
- Disconnect the power supply.
- Only leave the machine once you are certain that the damaged or contacted power line has been completely isolated (i.e. is electrically dead).
Always maintain an adequate safety distance from other equipment, overhanging items and other danger points. Maintain a safe distance at all times when negotiating bridges, tunnels, underpasses and overhead power cables.

Before driving over cellar roofs, bridges, hump-back structures etc., always first check that they are capable of supporting the weight of the machine.

⚠️ WARNING

The machine is grounded/earthed when in operation and may as a consequence attract lightning strike. During thunderstorms, leave the machine.
If there is not a clear view of any of the areas surrounding the machine, post monitoring personnel around the machine. Do not operate the machine until these monitoring personnel indicate that the danger area is clear. Follow the hand signals / signs made by monitoring personnel.

While cleaning the machine, never reach into the machine's conveyor equipment while still in operation. All drive units must be completely shut down before any work is started on the machine.

You should always choose the driver's seat on the side furthest away from road traffic.

When driving the machine, never lean out beyond the edge of the vehicle.
The auger, hopper, conveyor and screed must be switched on ONLY when work is being carried out. Never do so when the machine is in transit or is being driven to a different location.

Always select a driving speed appropriate for the safe braking distance of the machine.

Ensure all persons are a safe distance from the machine before working with the machine. If anyone ignores the warnings and enters the working area, you must stop work immediately.
M  Tips regarding laying material

Especially when laying bitumen materials, the quality of the material is of great importance. Cold material lumps produce an open structure (holes, nests) that requires unnecessary reworking. Using the wrong grain size can also cause open structures if there are stones in an otherwise fine grained material (especially when laying the final wear course).

**NOTICE**

The thickness of the layer should usually be triple or at least one and a half times the maximum grain size of the material being laid!

Spraying the foundation must be done with the required care. Spraying too much material can cause oversaturation of the surface. This is especially important with vibration screeds.

Laying material on slopes or inclines is better done by working up the slope or incline. In wet weather, however, it may be more advantageous to work down the slope or incline so that water is pushed aside. Generally, however, work should be stopped during heavy rain falls.

When paving one side of a road at a time, the working width of each successive layer should be varied by approx. 7.87 in. (20 cm). When the final wear course is laid, the seam must be in the middle of the road.

1  Layer thickness

The thicker the individual layers are and the smaller the number of layers, the greater the care that must be taken when laying the foundation. By using a large number of layers, it is possible to compensate any unevenness and to obtain a good, or level, wear course - even with an uneven subsoil of less load-bearing capacity.

On many construction sites, an additional layer of material is manually spread on top of the wear course to get a better surface. However, this produces exactly the opposite result. Owing to the rapid cooling rate of the additional layer, the road roller cannot fully compact and flatten the material so that the result is an uneven, rough surface which has holes in some places.

The compaction of a wear course by the different types of road rollers is of crucial importance for the stability and durability of an asphalt roadway. Often, careless compaction noticeably impairs the quality of the layers laid by the paver finisher.

The temperature of the material depends on the type of bitumen and the composition of the asphalt. If possible, the values given in the following table should always be adhered to. For different types, the stipulation pertaining to temperatures must be followed.
To obtain a well finished edge across the entire width of the layer, one must know how to correctly end the layer. It is well known that, when ending a layer, a right-angled, vertical edge should be made to obtain a good connection line across the entire width of the layer. There are different methods for ending a layer at right angles and obtaining a well finished edge.

1. One method often used is to place a piece of timber with a width matching the thickness of the compacted layer in front of the end of the layer.

At the end of the layer, the operator should adjust the conveyor and the auger in such a manner that the material will be evenly distributed in front of the screed. Then the conveyor must be stopped and the paver finisher must be moved forward. As soon as a part of the screed has been emptied, the paver finisher must be stopped and the screed lifted. Then, a right-angled gap is created along the edge of the layer and a piece of timber is placed into this gap. To keep the piece of timber in position, material must be pushed against the timber. After the layer has been rolled and consolidated, the piece of timber can be removed. In this way, a right-angled edge is created against which the next section can be properly closed up.

2. Another method often used to end a layer or move a roller to the beginning of a layer is to manually hovel a right-angled gap, finish the end and insert a piece of resin board. The resin board is then covered by asphalt, thus forming a ramp for the road roller.
3. It is also possible to lay a rope at the end of the layer and cover it with a layer of material. After compacting, a visible mark is left across the entire width of the layer. The material at the outer side of the rope must then be removed using shovels and the edge of the layer must be manually consolidated.

2 Joining layers

(Uncompacted layers)

If the paver finisher must be reversed to level a depression in the material laid while the material has not yet fully cooled down, the road roller should stop at a distance of at least 9.84 ft. (3 m) to the paver finisher. When joining layers, the paver finisher must be reversed with the screed lifted until approx. 3.28 ft. (1 m) of the material already laid is visible in front of the screed. The screed must then be lowered onto the layer, the auger must be filled with material and the layer must be laid again. Check that the height of the layers is the same as before joining the layers. If the height has changed, correct the height accordingly while the material is being laid by the screed.

3 Joining a fresh layer

(To a compacted layer)

To join a fresh layer to a compacted layer, the paver finisher can be used as described above. In this case, however, the height of the fresh layer must be 20-25% higher than that of the other layer to allow for compacting by the road roller.

4 Laying asphalt over manholes

Irrespective of what method is used, the manhole should be covered with plywood or any other suitable material so that excessive material on top of the manhole can be easily removed. Mark the curb stones or drain pipes in such a manner that the manhole can be easily located afterwards.
First method:

1. When laying the first layer, lay the asphalt until the screed almost touches the manhole. Then raise the screed and drive over the manhole.

2. Lower the screed on the other side of the manhole.

3. Spread the material left by the raised screed around the manhole and level it off.

Alternative:

1. Use a piece of timber or make a flat ramp of asphalt on both sides of the manhole.

2. When the wear course is laid, the screed rides up on the ramp and passes over the manhole.

3. This process should be carried out with the paver finisher moving at slow speed to give the screed and the levelling system time to react.
# Service card for delivery

To be filled in on delivery.

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Check:

- that the scope of delivery matches the order,
- that all items have been supplied,
- that the items supplied do not show any signs of transport damage.
O Service card for first after-sales service date

To be filled in at the first after-sales service date - after approx. 20 hours.

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**NOTICE**

The maintenance work required and the lubricants and operating materials approved for the first after-sales service are specified in the operating instructions.
TRAINING/EDUCATION

We offer our Customers various training programs on DYNAPAC equipment in our specialised training center in our factory. We hold training sessions also for special arrangements in addition to courses and programs held on

SERVICE

In case of operational failures and questions related to parts, please, contact one of our authorised service representatives. Our skilled specialists will arrange for fast and professional repair.

OPERATING ADVICE

Anytime when our dealers cannot help you, please, feel free to contact us directly. Our team of "Technical Advisors" is at your disposal.
Don’t hesitate to contact your local dealer for:

- service
- spare parts
- documentation
- accessories
- and information about the complete Dynapac paving and planing range