



# OPERATOR'S INSTRUCTION MANUAL

MODEL : **332 000** \_\_\_\_\_

ENGINE MODEL : \_\_\_\_\_

SERIAL : \_\_\_\_\_

ENGINE SERIAL : \_\_\_\_\_

DATE OF PURCHASE : \_\_\_\_\_

PURCHASED FROM : \_\_\_\_\_



## ⚠️ WARNING ⚠️

THIS PRODUCT IS DESIGNED AND MANUFACTURED TO PROVIDE SAFE AND DEPENDABLE SERVICE IF OPERATED ACCORDING TO INSTRUCTIONS. THE MANUFACTURER PROVIDES THE FOLLOWING INSTRUCTIONS FOR USE AND CARE OF THIS EQUIPMENT AND RELIES UPON THE PURCHASER TO SEE TO IT THAT THESE INSTRUCTIONS ARE MADE CLEAR TO THE PERSONS WHO WILL ACTUALLY BE USING THE EQUIPMENT. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR EQUIPMENT DAMAGE.



# INDEX

<b>INTRODUCTION</b>	<b>3</b>
<b>PREPARATION</b>	<b>4</b>
OPERATOR	4
<b>WEAR PROPER ATTIRE</b>	<b>4</b>
<b>ROOF PREPARATION</b>	<b>4</b>
INSPECT ROOF DECK	4
WARNING LINE SYSTEM	4
<b>HOISTING MACHINE TO ROOF</b>	<b>5</b>
INSPECT THE HOIST	5
CONNECTING TO LIFT RINGS	5
<b>SAFETY PRECAUTIONS</b>	<b>6</b>
<b>OPERATION</b>	<b>7</b>
BEFORE OPERATION	7
LOAD LIMITS AND CAPACITIES	7
BASIC POWER UNIT OPERATION	8
GRAVEL SPREADER OPERATION	8
DUMP HOPPER OPERATION	8
<b>HOT STUFF TANK OPERATION</b>	<b>8</b>
FILLING OF THE HOT TANK	9
TRANSPORTING AND DRAINING THE TANK	9
<b>THE CONTROLS</b>	<b>10</b>
FORWARD/REVERSE	10
DUMPING	10
<b>ATTACHMENTS</b>	<b>11</b>
GRAVEL SPREADER ATTACHMENT #330 500	11
DUMP TRAY ATTACHMENT #332 700	12
<b>ENGINE START-UP AND OPERATION</b>	<b>13</b>
<b>MAINTENANCE</b>	<b>14</b>
ENGINE SERVICE	14
LUBRICATION	14
HYDRAULIC OIL	14
BRAKE MAINTENANCE	14
<b>SAFETY HAZARDS</b>	<b>15</b>
FALLS	15
BURNS	15
HEAVY LIFTING	15
FIRE/EXPLOSION	16
ELECTROCUTION	16
FALLING OBJECTS	16
FLYING OBJECTS	16
UNGUARDED MACHINERY	16



## INTRODUCTION

### 332 000 - HYDRAULIC WORKHORSE

Thank you for purchasing this quality GRIZZLY product. With proper use and care this Workhorse will provide many years of reliable service. For the safety of all job-site personnel it is mandatory that the instructions provided for the use and handling of the equipment be read and thoroughly understood by the operators.



Fig.1

#### CAUTION

**INTENDED USE; THIS MACHINE IS INTENDED TO BE USED ON FLAT, LEVEL ROOFS ONLY FOR THESE APPLICATIONS: FELT CARRIER, INSULATION CARRIER, RUBBISH AND GRAVEL CARRIER, HOT STUFF TANK CARRIER AND GRAVEL SPREADER WHEN USED WITH THE PROPER ACCESSORIES. ANY OTHER USE OF THIS EQUIPMENT VOIDS THE MANUFACTURER'S WARRANTY AND IS THE SOLE RESPONSIBILITY OF THE OWNER/USER, SHOULD ANY DAMAGE OR INJURY OCCUR.**



## PREPARATION

### OPERATOR

START BY READING AND FULLY UNDERSTANDING OPERATING INSTRUCTIONS. IF SOMETHING IS NOT UNDERSTOOD, HAVE SOMEONE ELSE READ AND EXPLAIN THE INSTRUCTIONS TO THE OPERATOR OR CALL THE MANUFACTURER FOR INFORMATION. AN UNINFORMED OPERATOR CAN SUBJECT HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY.

## WEAR PROPER ATTIRE

Safety glasses are recommended and must be worn if any roof cutting or scraping is being done in the vicinity. Safety glasses and or face shield are also necessary when working with hot stuff.

Wear properly fitting clothes. Tight clothing can restrict movement and slow down reaction time in a dangerous situation.

Loose fitting clothing can be dangerous and cause serious injury if it gets caught in moving mechanical parts. Wear a long-sleeved shirt, buttoned at the cuffs, safety shoes, and pants without cuffs, and knit wrist type gloves.

A hard hat must be worn by operator when working on a job site.

## ROOF PREPARATION

### INSPECT ROOF DECK

Before allowing equipment and personnel access to roof, make certain roof is strong enough to support the weight. Check load limits of deck with owner, builder or architect. Clear the work area of all potentially dangerous obstacles that could cause personal injury to the operator or others. Keep unauthorized people away from construction area. Check to see that all roof openings are guarded to protect against falls.

### WARNING LINE SYSTEM

When operating parallel to roof edge warning line system must be at least six feet from edge. When operating perpendicular to edge warning line must be ten feet from roof edge.



# HOISTING MACHINE TO ROOF

**WARNING: ALWAYS CHECK DECK LOAD LIMITS WITH BUILDER, OWNER, OR ARCHITECT BEFORE DECIDING TO USE ON THE ROOF.**

## INSPECT THE HOIST

Make certain hoist is in safe operating condition, to be operated by trained personnel. The hoist should be clear of ground objects and overhead obstacles, such as power lines; it should be secure and properly counterbalanced. Hoist should be inspected for frayed cables, bent frame members or faulty mechanical parts. Make sure everyone on the ground is completely clear of the hoisting area. Do not exceed the weight and size capacity of your hoist. Do not use if you are in doubt.

## CONNECTING TO LIFT RINGS

Two lift rings are provided on the workhorse frame as shown in Fig. 2. Connect hooks from hoist line to hoist rings when lifting power unit only. Hot stuff carriers and other attachments must be hoisted separately.

**WARNING: HOT STUFF TANKS ARE NOT DESIGNED TO BE LIFTED IN COMBINATION WITH POWER UNIT. HOIST ATTACHMENTS SEPARATELY. NEVER LIFT THESE ATTACHMENTS WITH HOT STUFF CONTAINED. HOT STUFF TANKS MUST BE LIFTED WITH METAL SLINGS ONLY.**



Fig. 2

<b>WEIGHT:</b> 332 000 Workhorse including dump tray	660 lbs
330 500 Gravel spreader	110 lbs
332 700 Dump tray	110 lbs
145 500 Hot Tank	80 lbs

Refer to section on load limits, for loaded Workhorse weights



## SAFETY PRECAUTIONS

- Do not allow other people to be near the machine during operation (except operator)
- Never carry or transport people with this machine.
- Be certain all guards, shields and pins are secure and locked before starting.
- Never operate a workhorse that is damaged in any way. Repairs or replacement of damaged components must be made by a qualified mechanic
- Do not modify the equipment. Do not operate a modified piece of equipment.
- Keep hands and feet away from the brake and the chains.
- Wear safety footwear, eye protection and snug fit clothing.
- Operate the Workhorse only from the "Walk Behind" position.
- Operate on flat, level roofs only.
- Use only GRIZZLY attachments.
- Keep away from electrical lines.
- Use caution when handling fuel. Gasoline is very flammable. Shut off engine, and allow cooling before refuelling. Clean up gasoline before restarting.
- Guard all openings on the roof.
- Do not allow anyone to walk in front of the workhorse.
- Do not operate within 10 feet of roof edge (or within 6 feet, if operating parallel to the edge).
- Try to operate machine in such a way that you are always walking forward.
- Do not operate this machine if you are under the influence of alcohol, marijuana, or drugs that could impair judgment and ability.
- Keep the equipment in good condition.
- Never carry objects that may restrict or obstruct your vision.
- The owner or operator must see that all warning decals are in place and legible. Write to GRIZZLY Equipment for replacement decals and instructions.



# OPERATION

## BEFORE OPERATION

Check to see that engine is serviced properly. Read Honda operation and safety instructions. Handle gasoline with extreme caution. Make certain there are no signs of damage or wear on parts. Check machine for leaks, make certain that the control levers come back to their neutral position when released. Check oil level and adjust if needed. (Oil should be about 2 inches from top of tank.) Never operate a machine with damaged or missing parts. Serious injury may otherwise result.

## LOAD LIMITS AND CAPACITIES

**WARNING: ON WIDE SPAN DECKS CHECK LOAD LIMITS WITH BUILDER, OWNER, OR ARCHITECT BEFORE SETTING UP UNIT.**

For calculating loads, the following data may be used.

- (1) gravel weighs approximately 108 lbs/cu.ft.
- (2) asphalt weighs approximately 8.0 lbs/US gal.

Check with your material sources for actual weight of material you are using.

Fully loaded, the 332 000 Workhorse weighs approximately as listed:

### Loaded weights include asphalt and gravel

#### Loaded Weight

Workhorse w/gravel spreader, gravel loaded to capacity	1208 Lbs (approx.)
Workhorse w/hot stuff tank (55 gallons)	1120 Lbs (approx.)
Workhorse w/dump tray (with 1000 lbs max. load)	1660 Lbs (approx.)

#### Capacities

Gravel Spreader	6 cu. ft.
Gravel Spreader hopper extension	7.5 cu. ft.
Hot Stuff tank	55 gallons
Dump Tray (or felt & insulation carrier)	1000 Lbs.load

It is ultimately the operator's responsibility to check loaded weight of the workhorse and to respect the deck's load limits.



## BASIC POWER UNIT OPERATION

The 332 000 Workhorse is designed for use inside a perimeter warning system. Do not operate within 10 feet of roof edge (or 6 feet if operating parallel to roof). Keep hands and feet away from chain drive area. Keep well clear of other people on the roof while operating.

Turn machine off when not in actual use by qualified operator.

## GRAVEL SPREADER OPERATION

The gravel spreader is ideal for spreading pea gravel and stone up to 1» diameter and will handle up to 1-½" size. The dispensing lever is designed to be all the way forward or all the way back, make adjustments in door opening if needed.

## DUMP HOPPER OPERATION

Do not exceed maximum rated load of 1000 lbs. Hopper can be used for carrying tear off materials from roof, or for insulation or felt.

## **HOT STUFF TANK OPERATION**

**DANGER: ERUPTION OF OVERHEATED ASPHALT HAS BEEN REPORTED. READ AND UNDERSTAND INSTRUCTIONS.**

**CAUTION: GRIZZLY HOT TANKS SHOULD BE USED ONLY WITH GRIZZLY CARRIERS AND GRIZZLY CARRIERS SHOULD BE USED ONLY WITH GRIZZLY HOT TANKS.**

### Before Operation of Hot Tank

1. Make sure the tank is dry before using and that there is no trash or foreign matter in the tank. Even small amounts of moisture will react violently with hot material.
2. Inspect tank lining for any coke build-up or condensation. Clean if necessary.
3. Always wear proper cotton (100% cotton is best) as recommended by roofing association when on a roof:
  - a) Hard hat with face shield
  - b) Long sleeve work shirt buttoned at the wrist and collar
  - c) Long work pants with no cuffs
  - d) Safety high top shoes
  - e) Work gloves with knit wrist (to prevent hot material from spilling into the glove)
4. Be sure hot line is secure and cannot move splashing operator during the filling of hot tank.
5. Be sure carrier is secure and that brake is set (brake handle released).
6. Use tank only on a flat, level roof and within a perimeter warning system. Never operate within 6 feet of the roof edge.
7. Check temperature of material at the kettle or tanker. Do not accept hot material unless it is within the recommended temperature range of the manufacturer.





8. Keep an approved fire extinguisher available in case of fire. Never use water.
9. Make sure lid and draincock are closed.
10. Inspect tank for any exterior damage and do not use if you suspect damage.
11. Check that roof deck is rated to handle the weight of the lugger, carrier, and asphalt (8 lbs per US gallon) before using.
12. Do not allow any external ignition source (matches, cigarettes) near heated asphalt or your hot tank.

### FILLING OF THE HOT TANK

1. Never stand downwind of hot source when filling as fumes and/or hot material may cause injury.
2. Do not fill hot tank more than  $\frac{3}{4}$  full to avoid splashing of hot material.
3. Never fill with overheated material. Flash points vary and proper temperature level information must be obtained from asphalt manufacturer. **OVERHEATED ASPHALT MAY ERUPT.**

### TRANSPORTING AND DRAINING THE TANK

1. Transport the hot tank very smoothly and slowly so splashing can not occur. Make sure no obstacles are in the path and bumps are encountered with caution. Do not make sudden turns. Avoid transporting hot stuff on ramps.
2. Keep lid closed during transporting hot stuff on ramps.
3. Never tip hot tank when transporting, filling, or draining. Tip only when tank is empty and cool.
4. Be sure brake is set before discharging "hot" (brake handle released).
5. Never stand downwind from draincock while discharging hot material toward the operator. Stand clear of the path of discharging hot material.

### **ERUPTION/FLASHING - AN ERUPTION REQUIRES THESE THREE COMPONENTS TO HAPPEN**

Examples :

1. **Fuel** - Flammable gases from overheated, poorly refined hot material.
2. **Air** - Can come from tipping, sloshing, or discharging asphalt with filler lid open.
3. **Ignition** - Overheated material or material in tank with lower flash point (coked material on walls of tank, trash, cigarette, match).

Obtain information from your supplier of hot material for specific instructions on ways to avoid eruption or flashing of their particular product.



## THE CONTROLS

Refer to Fig. 3 while familiarizing yourself with power unit control functions. The throttle control is located on the left side of the dash (fig. 3) and the stop switch is on the right side of the engine, lever (A) is forward/reverse and lever (B) is dump.

**CAUTION : THE VALVES USED BY GRIZZLY ALLOW THE OPERATOR TO HAVE COMPLETE CONTROL OF HOW FAST OR SLOW HE WANTS TO GO. USING THE CONTROLS IN A GRADUAL WAY WILL ALLOW FOR SMOOTH OPERATION, BEING BRISK WITH THE CONTROLS WILL MAKE OPERATION OF THE MACHINE JERKY AND POTENTIALLY DANGEROUS.**

### FORWARD/REVERSE

To go forward pull up on lever (A) with your left hand, the brake will automatically release and you will go forward, the higher you pull the faster you will go. To stop release the lever. Releasing the lever gradually will bring you to a smooth stop, releasing quickly will bring you to an immediate stop. When the forward reverse lever is released or in the neutral position the brake is automatically engaged. To go backwards push down on lever (A) in the same gradual manor as for going forward, try to go backwards as little as possible, since going forwards is much safer.

### DUMPING

To dump release lever (A) to set the brake, pull up on lever (B) to start dumping releasing the lever (B) will stop the dump tray. Push down on lever (B) to bring dump tray back.

**CAUTION : OPERATING THE DUMP LEVER (B) WHILE MAINTAINING LEVER (A) ENGAGED MAY MAKE THE MACHINE UNSTABLE BECAUSE THE BRAKE WILL NOT BE SET.**

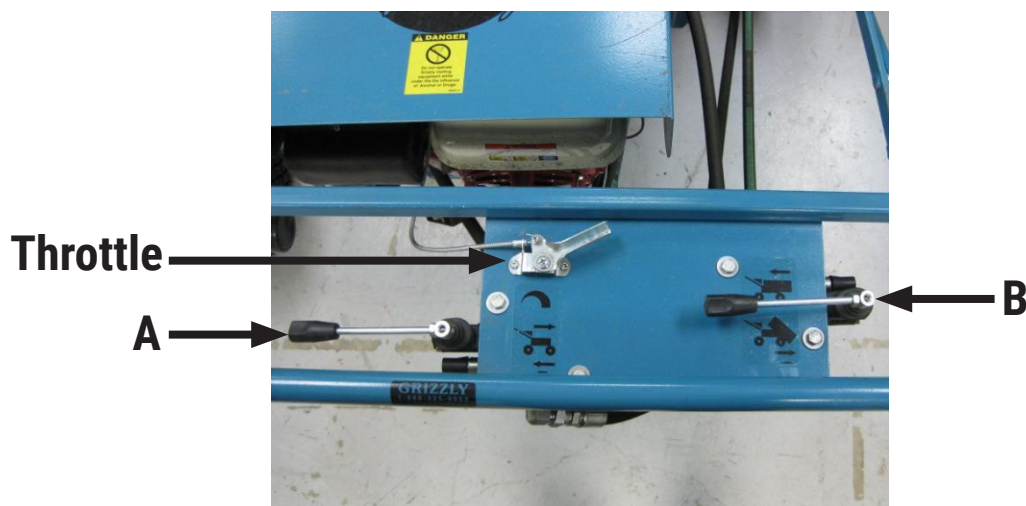


Fig. 3  
A- Forward/reverse  
B- Dump



Gravel dispensing lever (A) is located furthest to the right (Fig. 4.) Pulling back on handle opens discharge door of gravel dispenser. Pushing forward on lever closes door. For instructions on installation of linkage and lever, refer to next section (Gravel spreader attachment)

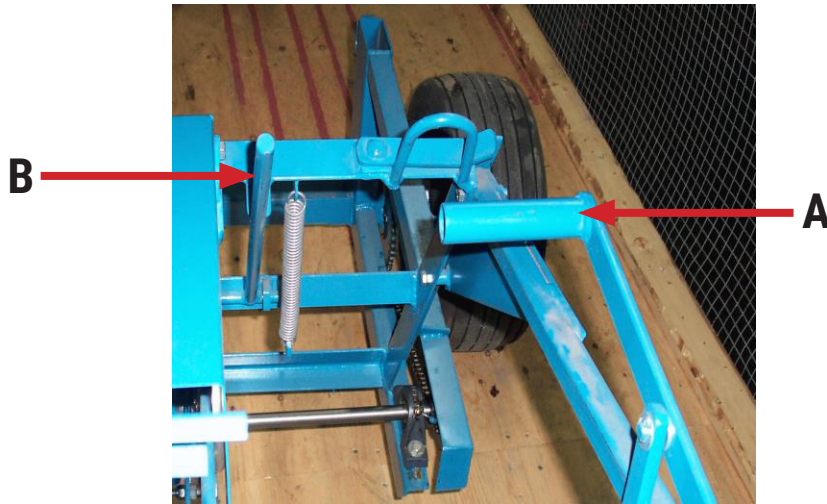


Fig.4

A - Gravel dispensing lever

B - Dump hopper released lever

## ATTACHMENTS

### GRAVEL SPREADER ATTACHMENT #330 500



Fig. 5 Gravel spreader

Wrenches are required for installation. Install gravel spreader as shown in fig. 5. Shaft ends of spreader drop into mount brackets on the frame. To install handle and linkage, first attach linkage to dispenser and then connect the other end with handle and secure with bolt and nut provided. Clockwise adjustment of the screw will make dispenser door open less; counter-clockwise makes door open more. Yoke assembly on back of dispenser is preset to proper door tension. If more tension is needed for door closure, remove the bolt and nut on the yoke and tighten as needed.



DUMP TRAY ATTACHMENT #332 700



Fig. 6 Dump tray (or felt & insulation carrier)



Fig. 7

Install dump tray as shown in fig. 6. Release safety latches (A) and drop shaft ends into the brackets. Connect cylinder to frame and install pin (B). Connect both hydraulic hoses (C) to the quick connect plugs on the frame. The dump tray may be left standing while waiting to be installed (fig. 7) otherwise lay it forward so it does not tip over.

**55 GAL. INSTALATED TANK #145 500**

Requires insulated tank support kit (330150)

Install channel irons, tank and rods as shown in Fig. 8  
(Refer to operation section on use of hot tanks)



Fig. 8 Hot stuff tank attachment



## ENGINE START-UP AND OPERATION



Fig. 9 All levers on neutral, brake on

At this point, after you have read through all of the instructions, the workhorse should be ready for operation.

Check to see that engine is serviced properly. Read "HONDA Owner's manual". Check oil level and fuel level. Check to see that spark plug is tight.

Start the engine and allow to warm up. (Please refer to the engine manufacturer's owner's manual). Inspect the machine and attachments for damage, make sure attachments are well anchored to the workhorse. This machine is equipped with a dead-man style brake. You can come to an immediate stop by releasing the forward/reverse lever. Never keep levers engaged by attaching them to the handlebars by any means. This would render the safety features of the dead-man brake useless and could cause injury or death.

When operating machine for the first time, position the machine on the ground or in an open level area away from obstructions and roof edges.

With no load on the workhorse, practice manoeuvring the machine by operating controls as described previously. All operators must check to see that the brake is functioning properly. When forward/reverse control lever is released the Workhorse should stop instantly. If it doesn't do not operate the machine until repairs or adjustments are made.



## MAINTENANCE

**CAUTION: DISCONNECT SPARK PLUG WIRE BEFORE WORKING ON MACHINE.**

### ENGINE SERVICE

For the engine, read "Honda Owner's manual". Engine oil should be changed in conformity with "Honda Owner's manual". Keep the cylinder head clean so that it can cool the engine properly. Frequent oil changes will significantly prolong life of engine. SAE 10W30 is recommended by Honda (see Honda engines Owner's manual). Unleaded gasoline is also recommended to increase valve life.

If service or repair of engine is needed, contact an authorized Honda centre. You will need the model, and serial number of your engine.

Grizzly equipment warranty does not cover the engine, which is covered by a separate warranty from Honda.

### LUBRICATION

Lubrication recommendations are as follows: Grease roller bearings on wheels weekly or as needed. Zerk for 18/8.50 X 8 wheels is located on hub assembly between wheel and chain drive. Zerks are provided for both. Grease pillow-block bearings on trans-axle assembly weekly or as required. Roller chain should be lubricated with a spray chain lube. Clean monthly with wire brush.

### HYDRAULIC OIL

Drain the oil from the system once a year and fill with fresh AW-32 oil. Dispose of used oil properly. Start the machine and engage the controls to circulate the oil and check level in tank, adjust level to about 2" from top. Do no overfill as oil will expand and overflow when hot.

### BRAKE MAINTENANCE

Check for brake wear at least once a week. Replace brake band before lining is completely worn. Do not operate without brake in proper working condition. Check brake spring everyday to see that adequate tension is applied to brake band. Replace worn or broken parts before operating..

Always check tire manufacturer's recommendations for correct tire pressure before inflating tire. (Correct tire pressure should be imprinted on the side of the tire.)



## SAFETY HAZARDS

Safety hazards are not always obvious to workers. Unlike exposure to health hazards, where illness or injury develop slowly, safety hazards usually result in immediate injury or death.

Broken bones, cuts bruises, sprains, burns and loss of limbs, eyesight and hearing are the kinds of injuries caused by safety hazards.

The rate of occupational injuries in roofing, in fact, ranks in the top ten of all major occupational groups.

### FALLS

Falls are the number one cause of serious injury and death to roofers. An estimated 10 percent of all roofing accidents result from falls off roof edges, through roofing openings or off ladders, more than half of the non-fatal accidents result in serious injury.

Unprotected and unguarded roof edges and roof openings create extremely hazardous conditions.

Ladders with cracked, loose or missing steps: with side rails broken or cracked and not attached firmly to the steps; with broken, loose or missing locks, or coated with grease, oils or hardened bitumen can lead to serious injury. Ladders should always be inspected to make sure they're properly maintained and constructed and that they're long enough to extend three feet above the roof's surface.

Improperly balanced or unstable hoists overturn and will often carry the worker along. Rolls of roofing felt should never be used as counterweight. Workers should know the load capacity; it should be posted.

### BURNS

Skin contact with hot asphalt and hot coal tar pitch usually results in second and third degree burns. They usually involve deeper portions of the skin and are easily infected.

An estimated 16 percent of all injuries are burns from hot stuff. The major causes of burns have been from:

#### Kettle flashes

- Kettle splashes from dropping pieces of coal pitch or asphalt into the kettle
- Slips and trips while carrying hot bitumen in open containers
- Splashes involving transfer operations like from the hot pipe outlet to a hot lugger, from a hot lugger to a mop cart or a pail, or from the kettle to a pail.

### HEAVY LIFTING

Sprains and strains, a majority of which involve the back, are the most common roofing injury and one of the most severe. Almost 30 percent of these injuries result in 10 or more days away from work.



## FIRE/EXPLOSION

Two conditions must be met in order for fires and explosions to occur. First, there must be an ignition source, a welding arc, spark, cigarette, flame or simply a hot spot as in a kettle or tanker. Secondly, there must be the right mixture of vapours (from asphalt, pitch, solvents) and oxygen.

For kettles and tankers, fire/explosion conditions arise when:

- oversized burners are used to fire the kettle, causing localized overheating of the heating tubes creating a hot spot
- the temperature of the bitumen is brought up to the desired operation temperature too quickly allowing the level of bitumen to drop to the level of the firing tubes, allowing excessively high surface temperatures
- heating the bitumen to its flash point (for asphalt, about 525°-540°; for pitch, about 450°-475°)
- the temperature of the bitumen is hot enough to reach the auto-ignition level
- in tankers, the vent pipe is clogged or plugged so that flammable vapours can build up to explosive levels

Many solvents evaporate quickly at roof temperatures. Explosive mixtures of vapours can be readily formed within confined spaces like high parapet walls, in atriums or in any space where little or no ventilation exists. And any kind of spark or flame can ignite the vapours.

## ELECTROCUTION

Low voltage electricity can cause shock, muscle contractions, breathing difficulty, irregular heartbeat, severe burns and death. The route that the current takes through the body affects the degree of injury. Current flowing from one finger to another would not pass vital organ, while from one hand to another would pass through the heart and lungs.

Electrical tools should be properly grounded. The electrical cord should end in a three-prong grounding contact, or the wires should be enclosed in a metal case with a special grounding attachment.

Employers are required to provide ground fault circuit interrupters for all outlets on construction sites that are not part of the permanent wiring of the building. This is actually a fast-acting circuit breaker, which can shut off electricity in a fraction of a second.

Aluminum or other metal ladders pose a serious electrical hazard around electrical equipment and energized lines.

## FALLING OBJECTS

Tools, bricks, materials, buckets, boxes, pallets or almost anything dropped from a sufficient height can cause severe damage. Head injuries, one of the highest compensated injuries to workers, often include brain damage. Workers need protective head gear when working beneath people, tools and equipment.

## FLYING OBJECTS

Objects can be projected by machines, from welding or grinding operations and can be windblown. Tear-off operations, where power cutters, power brooms and power spudders are generally used, are the major source of flying substances. The part of the body most often injured is the eyes.

## UNGUARDED MACHINERY

Exposed blades and chains on powered machinery like hoists and roof cutters can severely lacerate and crush parts of the body. Guards should always be fitted over moving parts to protect workers.

