China Honway Machinery Co.,LTD

Operator's Instruction Manual

Concrete/Asphalt Scarifier （Push Model）

HWS190/HWS200/HWS255 (gasoline and electromotor）

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Safety Message

Do not disconnect power by pulling cord. To disconnect, grasp the plug, not the cord.

• Safety Instructions are proceeded by a graphic alert symbol of DANGER, WARNING, or CAUTION.

DANGER Indicates an imminent hazard which, if not avoided, will result in death or serious injury.

WARNING Indicates an imminent hazard which, if not avoided, can result in death or serious injury.

CAUTION Indicates hazards which, if not avoided, could result in serious injury and or damage to the equipment.

GASOLINE/PROPANE POWERED EQUIPMENT

Warning: • Engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

• Gasoline is extremely flammable and poisonous. It should only be dispensed in well ventilated areas, and with a cool engine.

• Small gasoline engines produce high concentrations of carbon monoxide (CO) example: a 5 HP 4 cycle engine operation in an enclosed 100,000 cu. ft. area with only one change of air per hour is capable of providing deadly concentrations of CO in less than fifteen minutes. Five changes of air in the same area will produce noxious fumes in less than 30 minutes. Gasoline or propane powered equipment should not be used in enclosed or partially enclosed areas. Symptoms of CO poisoning include, headache, nausea, weakness, dizziness, visual problems and loss of consciousness. If symptoms occur - get into fresh air and seek medical attention immediately.

ELECTRICAL POWERED EQUIPMENT

Extreme care must be taken when operating electric models with water present: Ensure power cord is properly grounded, is attached to a Ground-Fault-Interrupter (GFI) outlet, and is undamaged.

• Check all electrical cables - be sure connections are tight and cable is continuous and in good condition. Be sure cable is correctly rated for both the operating current and voltage of this equipment.

• Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with qualified electrician or service person if there is any doubt as to whether the outlet is properly grounded. Adhere to **all** local codes and ordinances.

• **NOTE:** In the event of a malfunction or breakdown, grounding provides a path of least resistance for the electric current to dissipate. The motor is equipped with a grounded plug and must be connected to an outlet that is properly installed and properly grounded. DO NOT modify the plug provided on the motor. If the plug does not fit the outlet have a qualified electrician install the proper receptacle.

• Switch motor OFF **before** disconnecting power.

• Unplug power cord at the machine when not in use and before servicing.

GENERAL INSTRUCTIONS

• Equipment should only be operated by trained personnel in good physical condition and mental health (not fatigued). The operator and maintenance personnel must be physically able to handle the bulk weight and power of this equipment.

• This is a one person tool. Maintain a safe operating distance to other personnel. It is the **operators' responsibility** to keep other people (workers, pedestrians, bystanders, etc.) away during operation. Block off the work area in all directions with roping, safety netting, etc. for a safe distance. Failure to do so may result in others being injured by flying debris or exposing them to harmful dust and noise.

• This equipment is intended for commercial use only.

• For the operator's safety and the safety of others, always keep all guards in place during operation.

• Never let equipment run unattended.

• Personal Protection Equipment and proper safety attire must be worn when operating this machinery. The operator must wear approved safety equipment appropriate for the job such as hard hat and safety shoes when conditions require. Hearing protection MUST be used (operational noise levels of this equipment may exceed 90db). Eye protection MUST be worn at all times.

Keep body parts and loose clothing away from moving parts. Failure to do so could result in dismemberment or death.

• Do not modify the machine.

• Stop motor/engine when adjusting or servicing this equipment.

Maintain a safe operating distance from flammable materials. Sparks from the cutting-action of this machine can ignite flammable materials or vapors.

DUST WARNING

Waring: 1, Some dust created by power sanding, sawing, grinding, drilling, and other construction activi- ties contains chemicals known to cause cancer, birth defects, or other reproductive harm. Some examples of these chemicals are:

2, Lead from lead-based paints, and

3, Crystalline silica from bricks and concrete and other masonry products.

Your risk of exposure to these chemicals varies depending on how often you do this type of work. To reduce your risk: work in a well ventilated area, use a dust control system, such as an industrial-style vacuum, and wear approved personal safety equipment, such as a dust/particle respirator designed to filter out microscopic particles.

Specifications

Model	WRS190	WRS200	WRS255
Working Width	190 mm	200 mm	255 mm
Drum Assembly	Changeable	Changeable	Changeable
Power Option	Petrol 7hp or 3kw electromotor	Petrol 9.hp or 5.5kw electromotor	Petrol 13hp or 7.5kw electromotor
Working Depth	3 mm	6 mm	8 mm
Drum Rotation	Downcut(clockwise)	Downcut(clockwise)	Downcut(clockwise)
Weight	65 kg	107 kg	145 kg
Working Efficiency	70 m2/h	120 m2/h	160 m2/h
Depth Control	Yes	Yes	Yes
Num of Shaft	4	6	6
Packing Dimensions(l*w*H)	100*51*97 cm	105*54*103 cm	108*65*103 cm
Drive	Manual	Manual	Manual
Walking	Manual	Manual	Manual

1. Cutter Head Lever
2. Depth Control Knob
3. Emergency Stop button
4. Cushioned Handles
5. Ignition Switch (Position will vary) *
6. Throttle Control *
7. Water Hook Up
8. Fuel Tank *
9. Fuel Lockoff Solenoid Toggle For Propane Models Only. (Not Shown) *

* Not on Electric models

NOTE: Controls are similar on all models.

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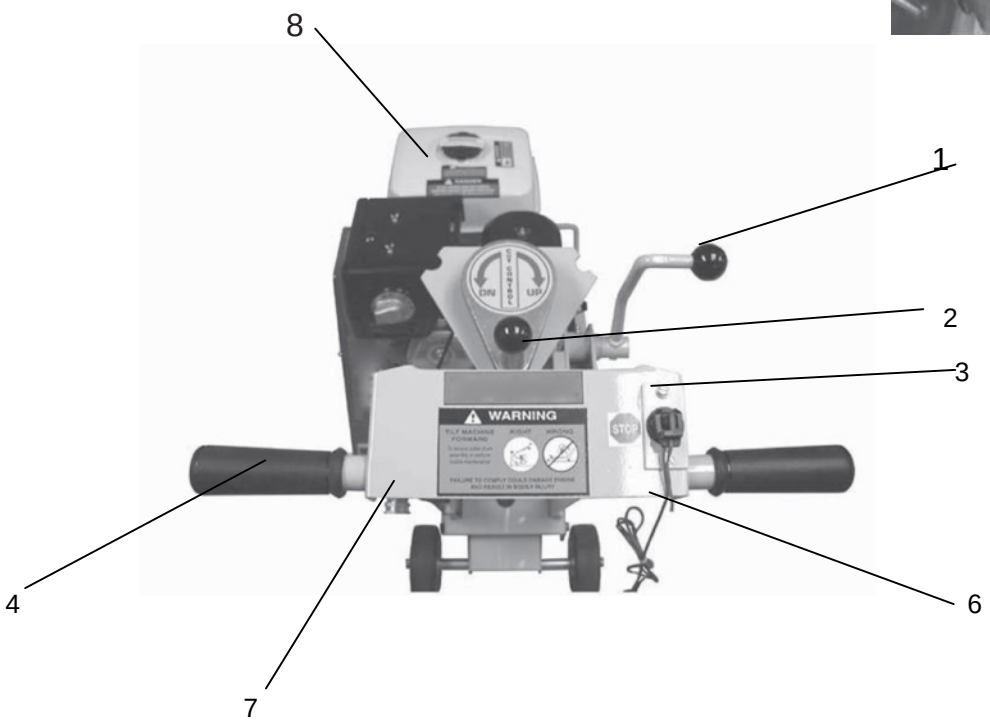


Operation Instruction

IMPORTANT!

Read the engine manufacturer's manual, familiarize yourself with engine start procedures.

BEFORE STARTING THE ENGINE: *Gasoline models only

Be sure that the cutter drum assembly has been properly installed and the cutter drum shaft is in place and secured.

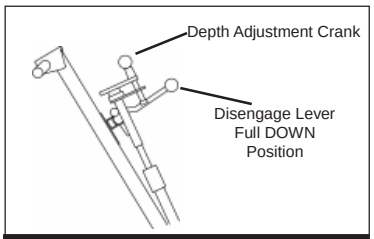


Figure A

1. Select a level place at the job site. Set the "disengage lever" in the full DOWN position. Refer to *(Figure A).*
   It is most important to determine the position of the cutter wheels as they relate to the slab or floor surface. If the drum assembly is filled with cutters, the cutter wheels will most likely contact the slab when the "disengage lever" is lowered. Refer to *(Figure B).*
   Turn the "depth adjustment crank" UP until the cutter wheels are clear of the slab. Refer to *(Figure A).* Follow these instructions each time before the engine is started to prevent accidental damage to the slab.

2. Raise the "disengage lever" to the full UP position. DO NOT force the lever. If resistance is felt, turn the "depth adjustment crank" DOWN one or two turns. This will allow the "disengage lever" to reach its normal full UP position. Refer to *(Figure C).*

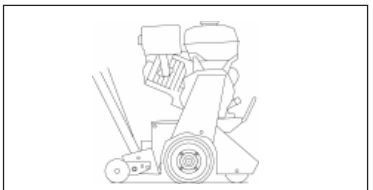


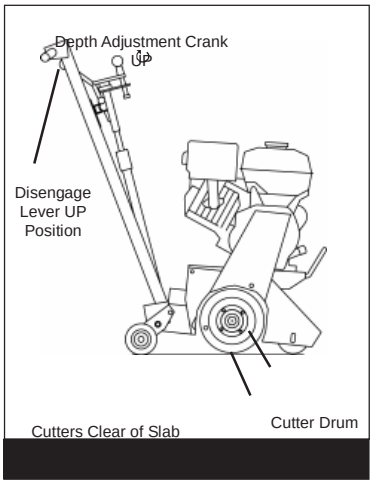
Figure B

3. Check level of oil in engine crankcase (engines are usually shipped dry, oil must be added as per engine manufacturers instructions). *****

4. Check fuel level (follow engine manufacturers instructions). *****

5. Be sure all guards (belt, motor, cutter wheel) are in place and secure.

6. Vacuum hose port should have hose attached or cap installed to control dust generated during the cutting operation.



7. Locate engine on/off switch, if the engine is so equipped. On some engines the throttle control is also the engine shut-off switch. Familiarize yourself with this operation. *

8. All **HONWAY** gasoline engine operated planers are equipped with a STOP switch, usually located on the handle. Use this switch for emergency engine shut-off. *****

9. Cold engine starting: Be sure fuel line valve is open. Set choke (separate lever on some engines - others have choke as part of throttle control). Open throttle (full to engage choke) 3/4 to full on engines with a separate choke. Turn engine ignition switch ON. Be sure emergency STOP switch is ON. *****

10. Before starting determines that the recoil starter assembly turns freely, starter rope pulls easily and the rope retracts properly. *****

Before Starting the Machine:

- Perform a visual inspection of the entire machine and all daily maintenance according to the *Maintenance Schedule* on page 15.
- Locate and be familiar with all engine/motor and operating controls.
- For Gasoline models, obtain the *Engine Manufacturer's Owner's Manual*. Read it and understand it before continuing. Follow the engine manual for break-in instructions.
- Use the correct cutters for the job. Be sure cutter drum is balanced, the number, size and type of cutter wheels are correct and the cutter drum shaft is locked and secured.
- Be sure all fasteners are tight and secure, check for signs of metal cracking or fatigue, inspect for damage to electrical wiring, damage to fuel lines, check bearings, etc.
- Be sure all guards are in place. Do not operate unless cutter drum guard is in place and secure.
- Inspect work area to determine the presence and location of deck inserts, pipes, columns and objects protruding from the slab surface so that they may be avoided during operation.

Starting the Engine/Motor:

For Electric Models:

- Be sure the "OFF" button is depressed on the motor starter box.

CAUTION

- Hook up the correct voltage/phase electrical power source by plugging into the connector provided. If the cord does not mate with the connector, consult a qualified licensed electrician before continuing.
- Verify that the electrical current being supplied is the proper voltage and phase required to run the equipment.

- Check motor rotation. Cutter drum rotation on the model WRS machines is "down cut." DO NOT uses if drum rotation is incorrect - have a qualified electrician make the necessary change in the main control panel or motor connection box?

For Gasoline Models:

- Consult the *Engine Manufacturer's Owner's Manual* and follow the directions for starting the engine and allow the engine to warm up.

DANGER

DO NOT operate gasoline/propane powered equipment without adequate ventilation. Carbon monoxide is an invisible, odorless gas that can kill.

For Propane Models:

Propane is extremely flammable.

DANGER

- Propane models use a vapor withdrawal system. Operate the propane engine much like you would the gasoline model. Be sure propane tank (cylinder) is positioned correctly. *(Figure 3)*
- Turn on main fuel valve at propane tank. *(Figure 3)*
- Check all connections for tightness and leaks. If you detect an odor, IMMEDIATELY shut off the main fuel valve and consult a qualified LP-gas service person or HONWAY directly.

DANGER NEVER check for propane leaks using an open flame. Instead, use a leak-testing solution. NEVER allow propane fumes to escape in a closed area; propane is heavier than air and will "settle."

- To start this propane powered equipment, open the main fuel valve located on the propane tank *(Figure 3)*. Open the throttle wide open and start the engine.

NOTE: Always turn off the main fuel valve on the propane tank when equipment is not being used *(Figure 3)*.

Figure 3

!!!IMPORTANT CUTTING NOTE!!!

Starting the Cut:

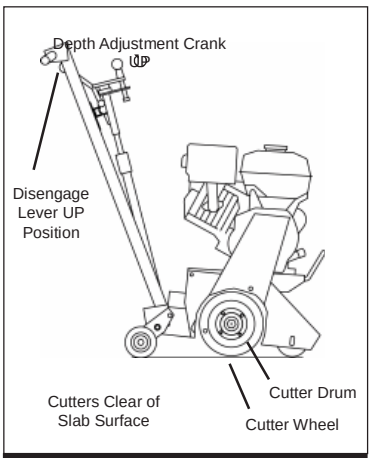


Figure 4

- Slowly lower the cutter head to the slab surface with the cutter head lever. (Figure 2, Item 1) & (Figure4)
- Rotate the Depth Control down until you hear the cutters contact the slab. Once contact is made lower the machine an additional 1/8" for the initial pass. Additional passes can be made in 1/8" increments to a maximum depth of 3/8". Cutting more than 1/8 per pass could result in damage to the drum and machine.
- Use an Industrial Vacuum Dust Control System for dry planning operations.
- Optional water hookup also available.

To Stop Cutting:

- Move cutter head control lever to raise cutter head assembly above slab surface.
- For gasoline and propane models, close throttle and turn the ignition switch to the "OFF" position.
- For electric models, depress the "OFF" button.

After Cutting:

- At the end of the day, clean the entire machine after it has cooled. Check for worn or damaged cutters and perform any required maintenance. See Maintenance Schedule and Instructions on page 13.
- If water was used for dust control - - - clean slurry under machine before it dries.

Cutting Heads / Drums:

- Drum assembly revolves at approximately 1200-1800 R. P. M.; Push Model Scarifier/Planer is a down-cut planer, Depth of cut is completely determined by the material to be cut, horsepower of the engine/motor and spacing of the cutter wheels on the cutter head.

- All cuts should be started from a stationary position - when the cutting depth is reached the planer should then move forward.

- The engine/motor should not labor. Run at full speed and adjust forward speed to fit the work being performed. Very hard concrete will have to be cut at a slower pace than asphalt or deteriorated surfaces.

- If it is necessary to make deep cuts - make several shallow cuts to achieve the desired depth. If the cutting depth is set too deep the cutter wheels will not be able to absorb the shock and damage to the equipment will result.

- The cutter wheels have an oversized arbor hole. This “play” is needed to absorb some of the shock of the cutter contacting the concrete.

- Cutting speed is directly proportional to the amount of material to be removed in one pass; an example - cutters spaced on 1” centers will penetrate to a greater depth than those spaced at 1/2” centers, and the planer will move forward faster. Most of the material in the path of the cutting head will be removed either by the cutters them selves or through the natural hammering action and spalling of the material being cut. A later pass with cutters spaced closer together will remove the ridges.

To Reach Maximum Depth in Concrete:

- It is best to make several passes - increments of 1/32-1/8” or even less if surface is extremely hard.

- Use coarse (wide spacing) for initial passes. Complete job with medium spacing. Never use a fine spaced cutter head to cut deeper than 1/32-1/8”.

- Some concrete slabs, especially if they are covered with water a good deal of time or if they have been treated with hardeners, develop an extremely high surface strength.

- Material removal depth should not exceed 1/32-1/8” per pass thus requiring several passes to reach the desired depth of cut.

To Cut Asphalt:

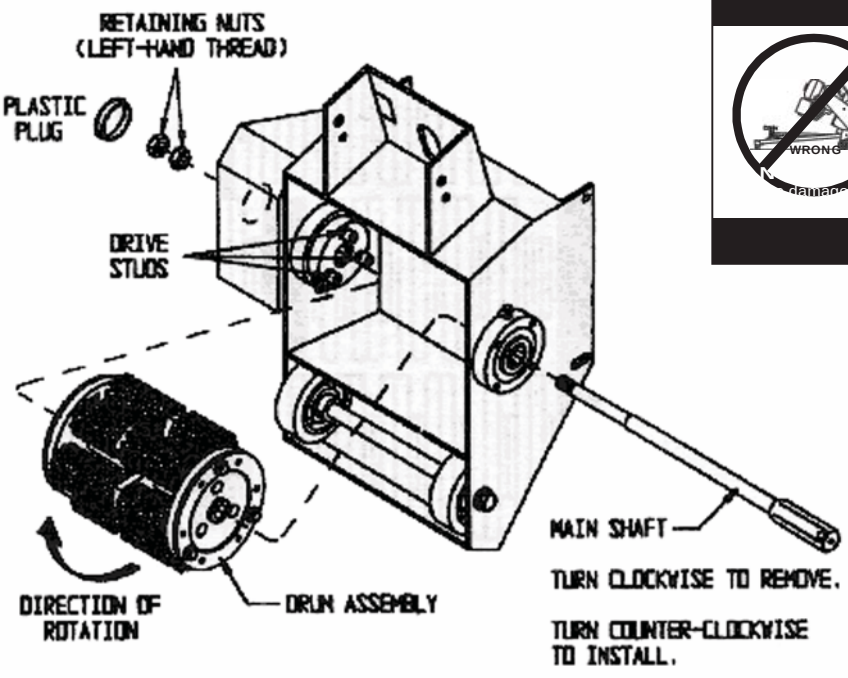
- This surface can be easier to penetrate than concrete. In some instances depths of 1/4” per pass can be achieved with the larger machines. In general though, 1/8” per pass is still standard and should be maintained until the hardness of the asphalt is determined.

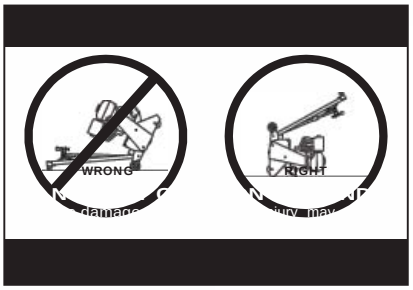
  Note: Specific information on asphalt cutting is available upon request.

Fine Cutting:

- This assembly should be used for very shallow or cleaning operations. Check with dealer for special cutter wheels for removal of paint build-up or similar surface coatings.

Drum Removal/Replacement





1. Remove plastic plug from belt guard, set aside for later use.

2. Use a socket wrench to loosen *left-hand thread* retaining nuts. Be sure the socket is over the outer retaining nut only. The outer retaining nut has to be loosened first and removed, then remove the second retaining nut, use another wrench to hold the other end of the shaft during this procedure.

3. Be careful not to damage threads on end of shaft when removing or installing the drum. Support the weight of the drum to minimize the possibility of damage.

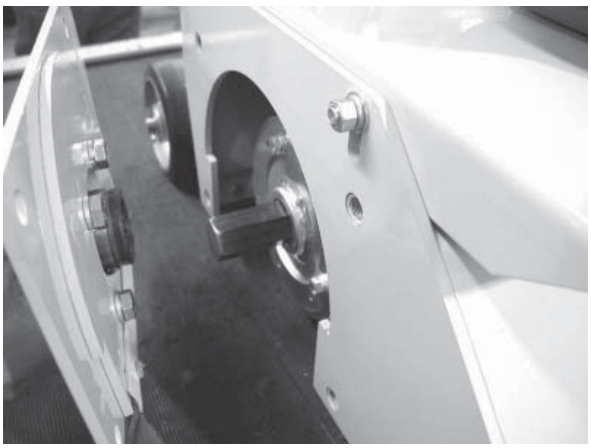
4. With the *left-hand thread* retaining nuts removed, use a socket wrench to turn the other end of the shaft in a *clock-wise* direction for removal. Support drum during shaft removal so the drum will not fall when the shaft is removed, possibly causing damage to machine and personal injury.

5. Once the drum is removed, maintenance and/or cutter replacement can be performed.

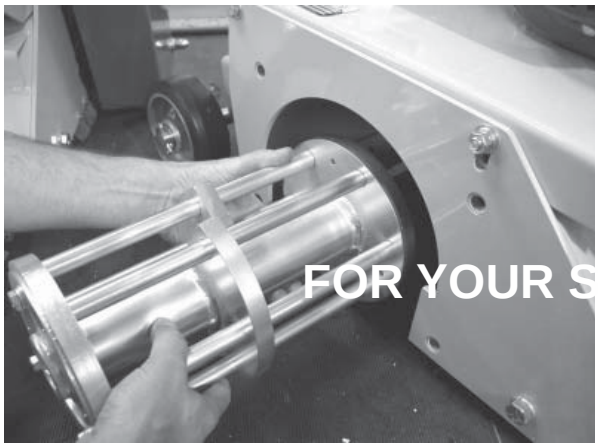
6. Reverse this procedure for reassembly insuring the drive studs are lined up with drive holes in drum before insert-ing the main shaft. Be sure to install plastic plug removed in step #1.

To remove or replace the drum assembly remove the four (4) bolts circled securing the bearing plate in the photo on the left.

NOTE: Bearing grease point.



Next remove the bearing plate as shown in the photo on the left.



Slide the drum out as shown in the photo on the left.

Reverse procedure to reassemble.

What to Expect from HONWAY Concrete Push Model Scarifier/Planer

The HONWAY Push Model Scarifier/Planer concrete Planers were designed to remove material from the surface of concrete slabs. The material may consist of excess concrete, coatings, and contaminants such as industrial debris, sealer, paint, production line spill and virtually any foreign substance that creates a safety or health hazard on walks, passageways or floor surfaces.

The HONWAY planers are primarily used for surface preparation in commercial and industrial buildings. The machine's total weight is an advantage when used on upper floors where lbs per sq. feet is an important factor. We have kept the overall width to less than 36 inches (91 cm) to allow for passage through most commercial doorways.

Since the maximum depth of cut is 3cm to 8cm, it is not suited for removal of very hard concrete such as the kind found on roads, bridge decks or runways. This work is best accomplished by heavy duty milling machines built for that purpose.

The basic mechanical structure consists of a fabricated steel frame, a power source - electric, gasoline, or propane (an air motor can also be adapted), and a rotating drum like cutter head that can be raised or lowered to a chosen depth by the operator.

The Self-propelled Model scarifier is designed with an "up-cut" rotation of the cutter drum assembly, consequently a milling type action occurs which is more efficient than the "down-cut" found on other manual units. The Push Model scarifier is down-cut machines.

The push units require very little manual labor to operate - the operator controls speed, forward and reverse directions. Note that it will cut in forward or reverse directions.

The drum assemblies consist of a welded cage holding 4, 6 hardened shafts - locked in place during operation and removable when replacing cutters.

Several styles and sizes of cutter are available. All types of cutters may be used on all sizes of drum assemblies. Cutters vary in size - 2 3/8" for light removal, 3" diameter for longer life. Additional cutter wheel specifications can be found on literature and price lists.

The efficiency of the planer is determined by 3 factors - the hardness and type of surface to be removed, the type of cutting tool and the power behind the cutters.
Since the hardness of the surface cannot be changed and the cutter type is limited to present state of the art material and the power source is fixed - there may be conditions that are beyond the capability of the planer. To exceed these limits will only cause problems. Cutter life will be shortened drastically; excessive vibration will most likely cause the scarifier to self destruct.

HONWAY cannot accept responsibility if the conditions found on the job site exceed the ability of the equipment to meet the contractors expectations. It is the obligation of the purchaser, user or renter to determine the compatibility of the planer with the job to be performed.

We at HONWAY are prepared to assist the user. We can provide technical information and comparison data on jobs of a similar nature. Given information on the project we can advise the contractor which tools, in our opinion, will suit the job best, approximate production rates and possibly arrange a demonstration or suggest an alterna- tive method or equipment.

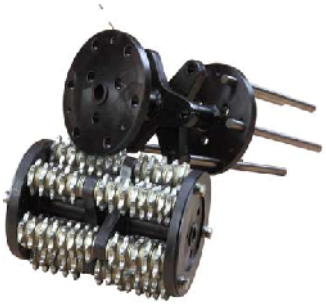
HONWAY concrete planers, when properly used, will perform efficiently and economically, but as with all "demolition" equipment, unless proper maintenance is provided they tend to wear out faster than other mechanical devices.

It is important that each job be considered individually. Testing should be carried out and a determination made if the project is feasible under the circumstances. In those instances where no other alternative is available, various changes in procedure can be tried - shallower cutting depth, slower forward speeds, spacing of cutters changed - extra weight added. We do not guarantee life of cutters, depth of cut, and life of equipment (except for workmanship). Equipment of this type is capable of self destruction through misuse or abuse and the owner/operator is the vital component that can mean success or failure of the project.

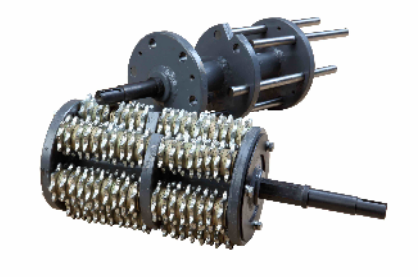
Our technical information has been obtained from years of experience on all types of job sites and we will gladly share this information with you. New materials are constantly being introduced - concrete is made harder with additives, chemicals and new curing techniques. We try to keep up with these changes, it's a never ending job for us and we need your cooperation to provide us with accurate job site conditions and information.

Typical Drum Assembly

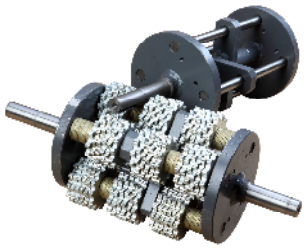
Surface preparation
six shaft drum
HWS 200



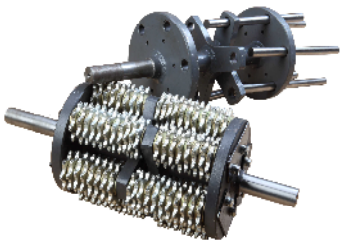
Surface preparation
six shaft drum
HWS250



Surface preparation
four shaft drum
HWS300



Surface preparation
six shaft drum
HWS300



Surface preparation
six shaft drum
HWS350

Maintenance Instructions

Refer to the Engine/Motor Manufacturer's Owner's Manual
for maintenance information specific to the engine/motor used

Caution:

- Never work on or under equipment without first securing the equipment to prevent it from mov- ing or falling. Always work on a flat and level surface.

Important!

- Check oil level before operation. Change engine oil and filter according to engine manufacturers recommendations.
- Clean air filter element daily.

Belts:

- On new equipment, and after replacing a set of belts, they should be re-tensioned after the first four hours of use.
- New belts will be stiff and will loosen with use. Proper belt tension must be maintained to transmit the engine/motor power to the cutting drum. Slipping belts will overheat, belt life will be shortened and the cutting speed limited.
  Over tensioned belts will shorten belt and bearing life.
- Damaged, stretched or excessively worn belts should be replaced with a complete set. ***DO NOT*** mix new and used belts, doing so will only shorten the life of new belt(s) and limit power transfer from the engine/motor to the cutting drum. This will have a definite impact on machine efficiency and production rate.
- To tension belts, loosen motor mounting hardware slightly. Use the jacking bolt to adjust the engine/motor until the belts are tight. Re-torque the engine/motor mounting hardware.

cutter assembly bearings:

- Grease cutter assembly bearings after every 4 hours of use.

Maintenance Schedule

Repairs are to be done by authorized HONWAY Dealers only.

Read and follow instructions in the engine owner's manual.

All maintenance to be performed by qualified personnel.	Before Operation	Every 4 Hours	Daily	Every 40-50 Hours of Operation	As Required	Every Cutter Change
Visual Inspection of Entire Machine	X					
Check Engine Oil*	X					
Cutter Shaft Wear (bushings, drum)	X					
Check Cutters for uneven wear	X					
Grease Cutter Assembly Bearings		X				
Clean Air Filter Element*			X			
Clean Dust & Dirt Off Machine			X			
Change Engine Oil* (Refer to engine manual)				X		
Grease Wheel Bearings				X		
Belt Tensioning					X	
Check Cutter Shaft and Bushings						X

* Gasoline and propane models only