













**HOWARD**

# Owner's Manual & Parts List *for* HOWARD



 Rotavator	 Fertiliser Spreader	 Post-Hole Digger	 Multiset Grader
<b>Made in Malaysia</b>	 Rotaslasher	 Mulcher	 Levelling Bucket
	 Rollermower	 Rollerslasher	 Grass Collector

**HOWARD** Alatpertanian Sdn. Bhd.

2, Jalan Perusahaan Tiga, Batu 20, 48000 Rawang, Selangor Darul Ehsan, Malaysia.







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## SAFETY

In the Owner's Manual accompanying each machine manufactured by HOWARD Alatpertanian Sdn. Bhd., Malaysia, (HOWARD), Safety features and precautions to be taken when operating the various implements are duly described.

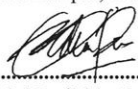
Some or all of the following information or warning labels are affixed to the machines.


Machine model	Label	Warning / Information
All	Model	Followed by model number embossed on the machine frame..
All	Serial No.	Followed by year of manufacture (alphabet code), and production serial number embossed on the machine frame.
All		<b>General warning that :</b> a) the machine may pose danger to operator and/or surroundings. b) such dangers are described with precautions to be taken in the accompanying Owner's Manual. c) HOWARD has sought to minimise such dangers in compliance with appropriate safety directives, and maintains technical records accordingly.  Name and address of manufacturer (HOWARD) and year of manufacture.  Beware of flying objects and stay clear of operating machine.
All		
All		
All		
All		
HR/HS/HFS/PHD/ HM/HRM/HSW/ HSC/HA/HMC/HTS		Affixed to rotating universal drive shaft (U/J) linking tractor with implement. Refer also to the safety and maintenance guidelines as described by the OEM U/J manufacturer supplied with each universal drive shaft.
HR/HS/PHD/ HM/HRM/HSC/ HA/HMC	Hot oil	Gearbox oil may become hot after continuous operation.
Various	Others	General informative or safety stickers as appropriate.

### DECLARATION OF CONFORMITY

We declare that HOWAD implements/machines have been manufactured in conformity with EU Council Directive 2006/42/EC - L 157.

Kuala Lumpur, Malaysia - 12<sup>th</sup> January 2010.

  
 .....  
 Mohd Rafi bin Jamlus  
 (Production Manager)

  
 .....  
 Balasubramaniam Vailu  
 (QA - Inspection)

  
 .....  
 Diana Bartolome  
 (ISO MR)

### HEALTH

The safety and health of operators and fitters is generally the responsibility of the owner of the machine. However, HOWARD has strived to design its implements so as to minimise risks.

Likewise, in the manufacturing process, employee safety and health is monitored in accordance with Malaysian law and HOWARD's internal production management systems.

### ENVIRONMENT

Environmental assesment is carried out on HOWARD's products and manufacturing processes, as described in the company's 9001 ISO management procedures.

### WARRANTY

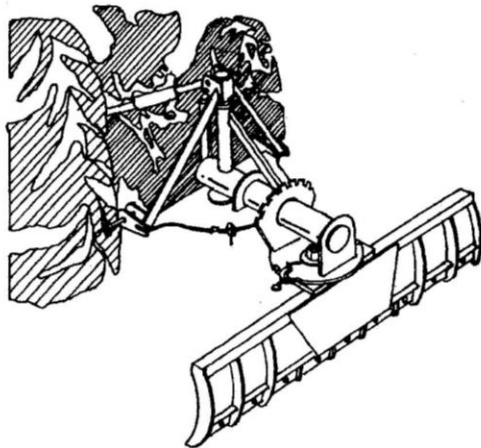
We undertake to supply , free of charge, new parts in place of parts which break or wear excessively through faulty material or bad workmanship within SIX months after delivery, provided such faulty parts are returned to us carriage paid, for examination. But we are not liable for labour, or any loss or damage direct or consequential, nor responsible for any accident, or in any way for the effect of any accident, whether due to defective material, workmanship or otherwise, and our guarantee does not apply to defects which in our opinion are caused by accident, wear or tear, misuse or neglect, including the use of unsuitable or dirty lubricants, or by interference with the construction of the machine as completed by us.

Your obligation as the Owner is to give the machine proper attention and care, in accordance with the guidelines given in this OWNER'S MANUAL PARTS LIST>

We reserve the right to make changes in design, and changes or improvements upon our product, without imposing any obligations on us to install the same on products there-to-fore manufactured.



## GRADERS HMG210 / HMG270



### Serial number

The Serial and Model Numbers are stamped on the frame of your GRADER.

For future reference record the numbers below.  
**ALWAYS** quote them when ordering spareparts.

MODEL No. \_\_\_\_\_

SERIAL No. \_\_\_\_\_

Date Purchased \_\_\_\_\_

We hope you will be happy with your **HOWARD** Grader.  
Treat it well - and it will serve you diligently for many years to come.  
Should you encounter problems - or have questions in respect of road building or work site levelling  
- please feel free to contact us or consult our dealers.

### Notes:

- 1) Continuous R & D may result in the technical contents of this Manual not always being identical to the specifications for the latest model delivered. **HOWARD** in ASIA since 1962.
- 2) For more details and technical support, consult our web-page: [www.howardmy.com](http://www.howardmy.com)

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E-mail: [howardmy@tm.net.my](mailto:howardmy@tm.net.my)  
Spare Parts Direct Line: (6 03) 6093 6363

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**! SAFETY PRECAUTIONS & OPERATING INSTRUCTION !**

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**Before use**

- Ensure operators have read and are familiar with the instructions contained in this manual.
  
- Consult the Tractor Manufacturer's Manual for instructions on mounting GRADER and safe working methods.
  
- Ensure the GRADER is standing on firm level ground.
  
- Ensure all bolts and nuts are tightened.
  
- Ensure the work area is clear of bystanders.
  
- Inspect the work area for obstructions which may constitute a hazard.
  
- Disengage all clutches and shift into neutral prior to starting the tractor engine.

**During use**

- Observe all safe driving procedures such as reducing speed on slopes and sharp turns.
  
- Be alert for hidden obstructions; should an obstruction be struck, stop and check for damage to the GRADER before proceeding.
  
- Avoid working on ground where there is a risk of the tractor overturning.
  
- Do not operate across the face of slopes.

**After use**

- Inspect the GRADER for damage. Clean the machine thoroughly before storage.
  
- Check that all bolts, nuts and fasteners are tight.
  
- Carry out lubrication and maintenance as detailed in this manual.

## Always

- Wear substantial or safety footwear.
- Avoid loose clothing which may be caught in moving parts.
- Wear earmuffs or earplugs. Prolonged exposure to noise can cause impairment or loss of hearing.
- Wear gloves when handling worn GRADER or parts with sharp edges.
- Use the GRADER only for the purpose for which it was designed, tested and in accordance with the instructions contained in this manual.
- Ensure the GRADER is not operated by children or untrained persons.
- Interpret "left" or "right" as the left or right hand of the operator when sitting on the tractor seat and facing forward.

## NEVER

- Touch any moving parts of the GRADER or parts which may be hot from operation.
- Allow passengers on the tractor or GRADER when operating.
- Check oil levels whilst the tractor is running.
- Attempt to clear any obstruction to the grader or carry out cleaning, lubricating, adjustments, repairs to a mounted GRADER unless the tractor engine is stopped and the GRADER is resting on firm level ground.
- Leave the tractor seat unless the GRADER is lowered, the gear shift in neutral, the brake applied, the engine stopped and the ignition key removed.

**BE A SAFE OPERATOR  
BY THINKING - BEFORE ACTING**

**SPECIFICATION OF YOUR GRADERS**

Specification	HMG210	HMG270
Tractor HP, recommended	35 hp and above	
Working Width, cm	210	270
Multiset Locking - Angles	15° - 30° - 45° Left & Right	
- Positions	Offset, Swivel & Tilt	
Three-point Linkage, Cat.	I / II	
Parking Leg	yes	
Weight, kg.	330	390

**HOWARD's** HMG GRADER is a heavy duty GRADER for rear-mounting onto tractors of minimum 35 horsepower with standard 3 point linkage Cat. I or Cat. II.

**MULTISET**

GRADER is designed for off-setting in relation to the tractor; swivelling through 360 degrees; and has 11 different locking positions for tilts between 45° left and 45° right.

**EASY-LOCK**

On the Offset, Swivel and Tilt Quadrants are mounted stoppers which allow locking without the use of tools.

**BLADE**

The Cutting Blade is replaceable and is made of high grade carbon steel.

**PARKING STAND**

The Parking Leg is mounted in a socket and has locking for Raised / Travelling position.

<b>MOUNTING OF THE GRADER</b>	
(1)	<p>Set the GRADER on level ground or floor area.</p> <p>There are two stoppers on the swivel quadrant and one on the offset quadrant. Check that these stoppers are securely holding the GRADER in the 'straight ahead' position on both swivel and offset quadrants; also check that the tilt quadrant is set level.</p> <p>Those are the positions in which the quadrants must be fixed before unhitching from tractor.</p>
<b>Note:</b>	<p>It is important that adjustments are only made when the GRADER is correctly supported to avoid it swinging round under its own weight from an out of balance position.</p> <p>Ensure that the Parking Leg is secured in its socket in the jacked position which is the reverse of the travelling (working) position.</p>

<b>MOUNTING OF THE GRADER (continued)</b>	
(2)	<p>Back the Tractor up to the GRADER.</p> <p>Couple tractor to the GRADER in accordance with the tractor manufacturers instruction for fitting a fully mounted three-point linkage GRADER.</p> <p>Ascertain that the tractor's lower link arms and top link are securely attached to the GRADER and that the tractor's check chains or sway blocks are tight enough to prevent the GRADER from swinging sideways more than 5.0 cm (2 inches).</p>
(3)	<p>Lift the GRADER clear of the ground using the tractor's hydraulic linkage.</p> <p>Remove the R-Clip and locking L-Pin and remove the Parking Leg from its socket in the jacked position.</p> <p>Reverse the Parking Leg into the top of the socket so that it stands up beside the top link mounting. Secure it with the locking L-Pin and R-Clip into the socket.</p>
(4)	<p>Lower the GRADER by means of the tractor's hydraulic linkage, then adjust the tractor's top link until the main beam of the GRADER is parallel with the ground.</p>

<b>SETTING OF THE GRADER</b>	
(1)	<p>With the tractor's engine switched off, power take-off disengaged and handbrake applied in accordance with safety precautions, check that the main beam of the GRADER is parallel with the ground.</p> <p>If it is not, then adjust the tractor's top link until the level is correct.</p>
(2)	<p>Set the hydraulic control lever in 'POSITION' or 'HEIGHT' control.</p> <p><b>Do not use in 'DRAUGHT' control.</b></p>

<b>SWIVELLING OF THE GRADER</b>	
(1)	<p>Lift the GRADER clear of the ground by means of the tractor's hydraulic linkage.</p>
(2)	<p>Using the Cam Lever RH to move the Angle Stopper away from/out of the slot on the right hand side of the swivelling quadrant.</p>
(3)	<p>Using the Cam Lever LH to move the Angle Stopper away from/out of the slot on the left hand side of the swivelling quadrant.</p>
(4)	<p>KEEPING FINGERS WELL CLEAR OF THE SLOTS IN THE QUADRANTS, turn the Scraper until the required angle is obtained, then put the left hand stopper into the exposed slot, ensuring that the spring holds it firmly.</p> <p>Engage the right hand stopper <b>opposite</b> the left hand stopper, again ensuring that it is firmly held by the spring.</p>

<b>DISCONNECTION OF THE GRADER</b> (continued)	
(3)	Check that all five stoppers are securely in position.
(4)	Remove the Parking Leg from the top of its socket in the travelling (working) position.  Carefully reverse the leg into the base of the socket (jacked position) securing it firmly into position with the locking L-Pin and R-Clip.
(5)	Lower the GRADER to the ground and detach it from the tractor link arms and top link.

**ALTER ONLY ONE ADJUSTING QUADRANT AT A TIME**

### **OPERATION**

The GRADER is primarily designed for use with the tractor travelling forwards, however the Scraper can be angled right round into the reverse position and used for limited dozing work, such as backfilling trenches.

Only use the blade in the reversed position on loose materials, never on hard, compacted earth.

After roughly levelling the ground, a smooth finish can be obtained more quickly by using the Scraper set in one of the angled positions, rather than in the "straight ahead" position.

The combined use of **TILT** and **OFFSET** quadrants enables the GRADER to be used for working along banks and ditches.

The **OFFSET** quadrant can be used to allow the GRADER to work to one side of the tractor in conditions where an obstacle, such as a hedge or a wall, prevents the tractor getting close enough to the work.

**NEVER USE THE GRADER UNLESS ALL FIVE  
RETAINING STOPPERS ARE IN POSITION**



**MAINTENANCE**

Should any retaining stoppers become lost or damaged, they **MUST** be replaced before the GRADER is used.

Replace the Cutting Blade of the GRADER before the Scraper (or mouldboard) to which it is bolted begins to wear away. When replacing the Cutting Blade, always use new bolts and tighten until the bolt heads bite into the Cutting Blade.

Always switch off the tractor engine, disengage power take-off, apply handbrake and remove key in accordance with safety precautions, then take care to block up the GRADER securely, so that it cannot lower the tractors linkage whilst the Cutting Blade is being fitted. The same care must be taken when extensions or other tools are being fitted.

Inspect after use and tighten any nuts, bolts or screws which may have become slack.

**LUBRICATION**

Since regular maintenance, including cleaning and lubrication, is essential to keep your GRADER in perfect working order, the following procedure should be adopted after use.

- (1) Clean the Scraper (mouldboard). Wipe the Cutting Blade with used engine oil to keep it bright.
- (2) The Swivel Quadrant is fitted with grease nipples. Use lithium based grease.
- (3) Immediately after use lubricate with oil all quadrants, stoppers, pins, bolts and nuts, to prevent rust forming whilst the GRADER is out of use.
- (4) If Wheel Assembly is fitted, lubricate the wheel pivot shaft and wheel bearing using a lithium based grease.

**USAGE**

Some of the many applications of the HOWARD Multiset GRADER:

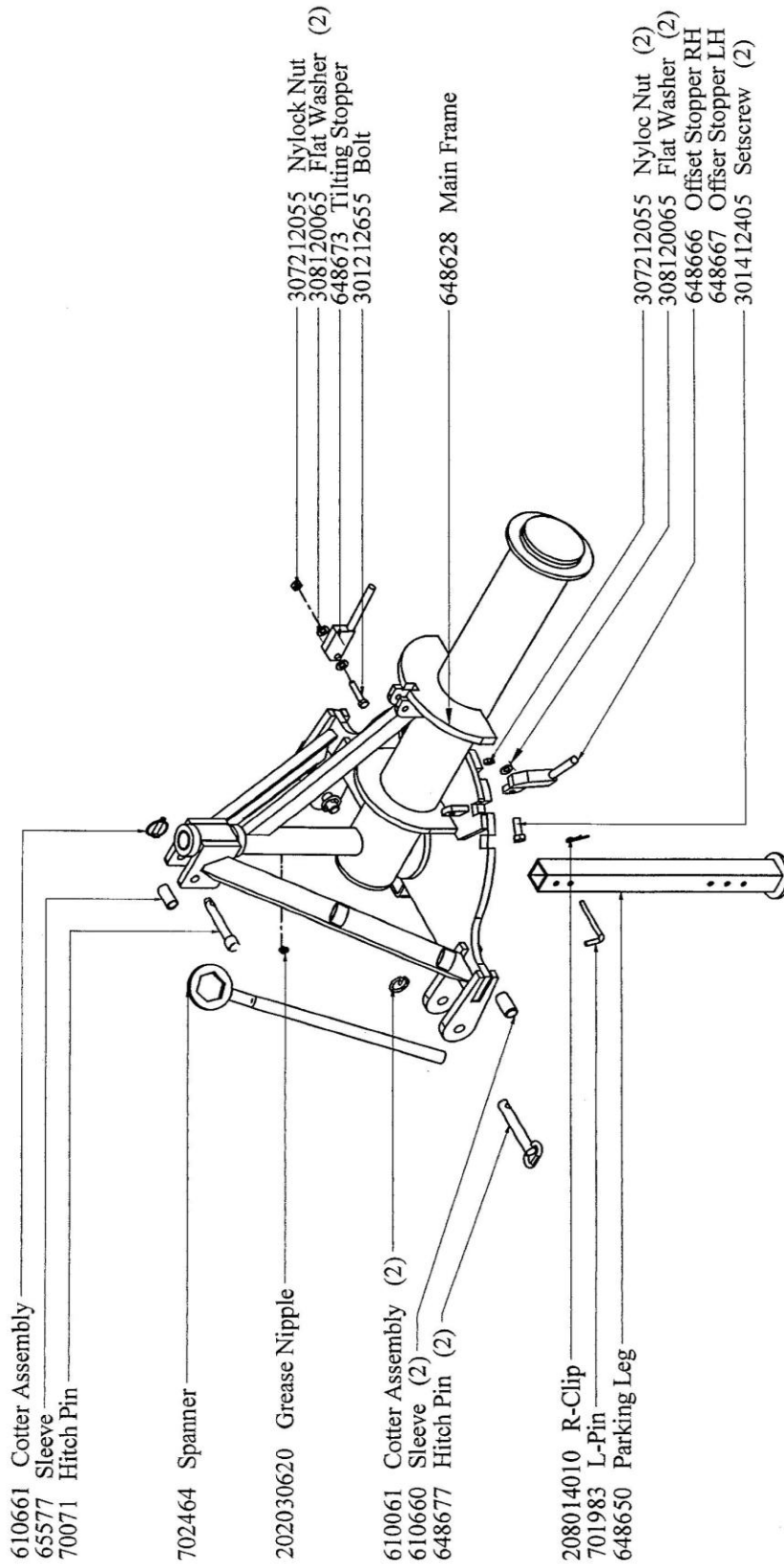
- |                                    |                                   |
|------------------------------------|-----------------------------------|
| <b>Land Reclamation</b>            | <b>Dirt Road Construction</b>     |
| <b>Road Maintenance</b>            | <b>Trench Back-Filling</b>        |
| <b>Site Clearance</b>              | <b>Contouring and Landscaping</b> |
| <b>Cutting Irrigation Channels</b> | <b>Yard Scraping</b>              |

Users of HOWARD implements are always assured:

**Rugged Machine Construction  
Comprehensive Service Back-Up  
Spareparts Readily Available**

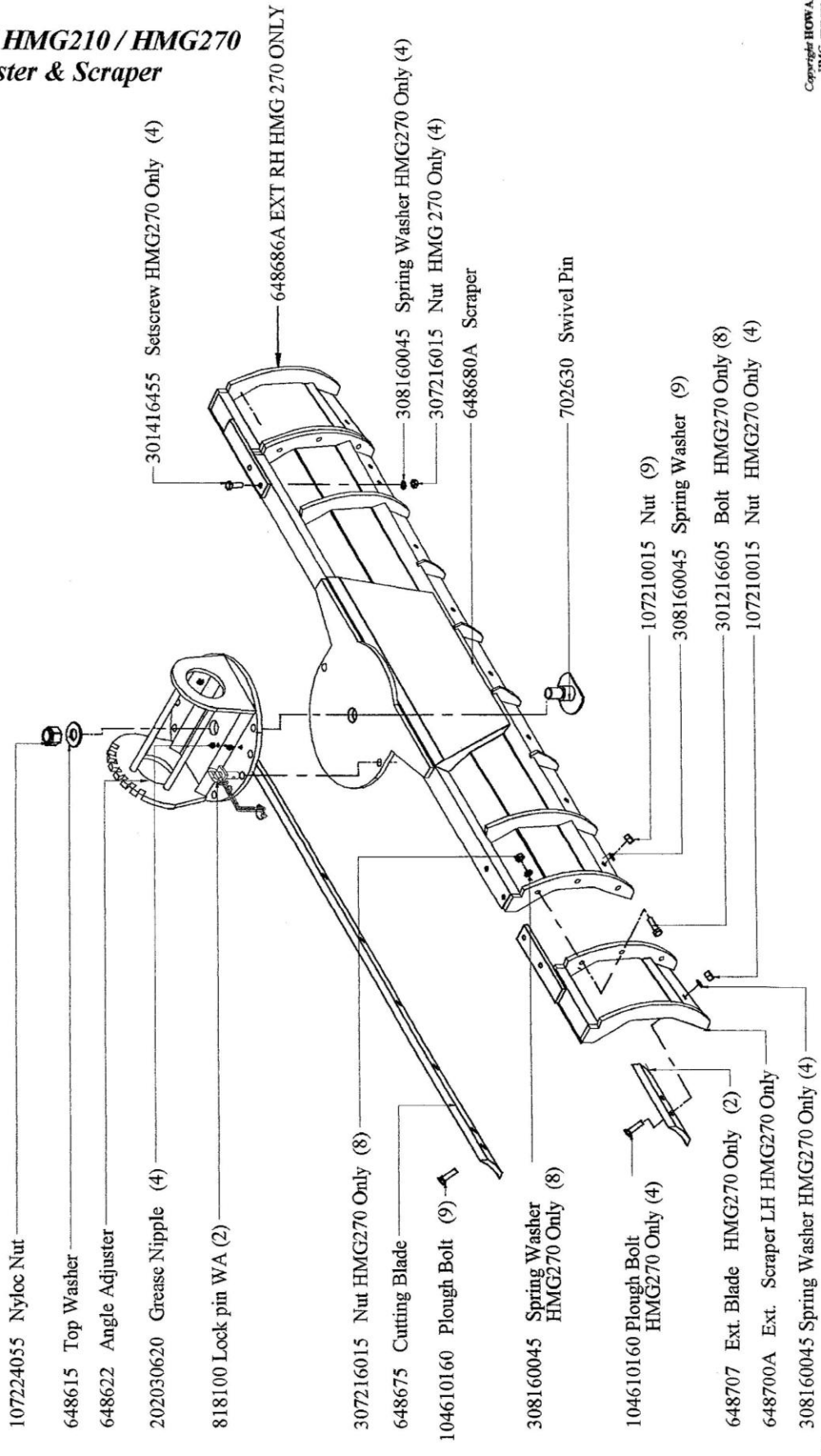
**HOWARD IN ASIA SINCE 1962**

GRADERS HMG210 / HMG270  
 Angle Adjuster & Scraper



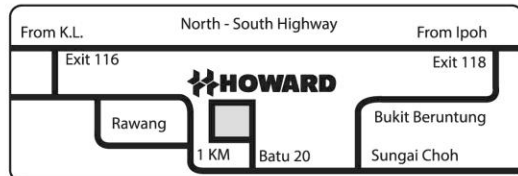
# GRADERS HMG210 / HMG270 Angle Adjuster & Scraper

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## HOWARD DEALERS & SPARE PART STOCKISTS

<p><b>PERLIS</b></p> <p>PPN Perlis, Kangar Sin Keat Seng, Kangar PPK Mata Ayer, M.Ayer</p> <p><b>KEDAH</b></p> <p>Nafas Jentera, A.S. Pertanian Utara, A.S. Sime Darby Ind, A.S. Hock Lean, Jitra TAE, Jitra TAE, Pendang Utara Agritrak, A.S.</p> <p><b>PULAU PINANG</b></p> <p>Eik Seng, B'worth Kien Seng, B'worth Sime Darby Ind, S. Prai Sime Kubota, B'worth TCIM, B'worth UMW, B'worth</p> <p><b>PERAK</b></p> <p>Benefarm, Ipoh Felcra Process, Kg. Gajah PPN Perak, Ipoh Kej. Pertanian, T. Intan Overseas Union, T. Intan Sime Kubota, T.Intan Sime Darby Ind, Ipoh TCIM, Ipoh UMW, Ipoh</p> <p><b>SELANGOR</b></p> <p>BH Agri, K.L. Palm Mach, Kepong Yik Soon, Kepong Teck Seng, Sg. Besi Puncak Emas, B. Caves S.J.I, Klang Asia Turfquip, P.J. Bar Formula, P.J. Marequse, P.J. Nafas Jentera, P.J. Eurostar, Puchong Minda Agri, Puchong Sime Darby Ind, Puchong Sime Kubota, Puchong Sin Hup Hin, Sekinchan MZS Power, Shah Alam TCIM, Shah Alam UMW, Shah Alam</p>	<p><b>SABAH</b></p> <p>LSC K.K. Kong Seng, K.K. Lensoon, K.K. Palm Mach, K.K. Sime Kubota, K.K. Sin Ngiap, K.K. TCIE, K.K. Sime Darby, K.K. UMW, K.K. Wilpors, K.K. Win Hin, K.K. Sime Darby, Lahad Datu All Planters, Lahad Datu ATSB, Lahad Datu Benefarm, Lahad Datu Eurostar, Lahad Datu Palm Mach, Lahad Datu Nafas Jentera, Lahad Datu Sime Kubota, Lahad Datu Solid Firm, Lahad Datu TCIE, Lahad Datu Sime Darby, Labuan All Planters, Sandakan ATSB, Sandakan Benefarm, Sandakan Bri-Trail, Sandakan Eurostar, Sandakan Hup Seng, Sandakan Intan Karang, Sandakan TCIE, Sandakan Sime Darby, Sandakan Sime Kubota, Sandakan UMW, Sandakan Wilpros, Sandakan ATSB, Tawau Eurostar, Tawau LP Tractors, Tawau Sime Darby, Tawau UMW, Tawau</p> <p><b>NEGERI SEMBILAN</b></p> <p>Bahau Auto, Bahau Emdek, Seremban TCIM, Seremban</p>	<p><b>MELAKA</b></p> <p>CS Agriparts, T.M. Jaya TCIM, T.M. Jaya Sime Darby, T.M. Jaya PPN Melaka, Melaka Segamat Agri, Krubong</p> <p><b>JOHOR</b></p> <p>Asia Turfquip, J.B Hock Guan Hin, J.B. Seriintan, J.B. TCIM, J.B. Teck Seng, J.B. Sime Darby Inds, J.B. UMW, J.B. Ah Bee, Kluang Hiap Thye, Kluang Kang Sang, Kluang Kluang Berjaya, Kluang Maju Estate, Kluang Nafas Jentera, Kluang Palm Mach, Kluang Sime Darby Inds, Kluang Eurostar, Segamat Kian Huat, Segamat Segamat Cycle, Segamat Wabco, Skudai JVR, Ulu Tiram</p> <p><b>KELANTAN</b></p> <p>Bogam, K.B Hock Hoe Hin, K.B. K.B. Jaya, K.B. Eurostar, G. Musang Palm Mach, G. Musang Lea Thong, K.B. Minda, K.B. Nafas Jentera, K.B. Sime Darby Inds, K.B. PPK K. Sepat, P.Mas Sime Kubota, W. Bharu</p>	<p><b>TERENGGANU</b></p> <p>J &amp; J Machinery, K.T. KPT Peladang, K.T. K.T. Inds, K.T. Nafas Jentera, K.T. TADC, K.T. UMW, K.T.</p> <p><b>PAHANG</b></p> <p>Yi Cheng, Gambang Eurostar, Kuantan Nafas Jentera, Kuantan Sime Kubota, Kuantan TCIM, Kuantan Tractors M'sia, Kuantan UMW, Kuantan M'tab Agri, Mentakab</p> <p><b>SARAWAK</b></p> <p>Benefarm, Miri Sime Kubota, Miri TCM, Miri Sime Darby, Miri UMW, Miri Intan Karang, Bintulu Pan Sarawak, Bintulu Sime Kubota, Bintulu Sime Darby, Bintulu UMW, Bintulu Benefarm, Kuching JN Inds, Kuching Sime Kubota, Kuching TCIM, Kuching Sime Darby, Kuching UMW, Kuching Pan Sarawak, Sibul Sime Kubota, Sibul TCM, Sibul Sime Darby, Sibul Pansar, Sibul UMW, Sibul</p>	<p><b>BRUNEI</b></p> <p>Hock Hung Hing, BSB MPS Trading, BSB Tractors M'sia, BSB</p> <p><b>INDONESIA</b></p> <p>Agrisarana Altrak 1978 Bina Pertiwi Pioneer Trading Probesco SAHABAT Agritama Satrindo Traktor Nusantara Capella, Medan SAHABAT, Medan</p> <p><b>SINGAPORE</b></p> <p>ATS Tractors S'pore UMW</p> <p><b>PHILIPPINES</b></p> <p>Alpha Machinery KAMPI Major Tractors, Davao Sime Darby Up-Town, Pasig City</p> <p><b>THAILAND</b></p> <p>Phong La-or Patana Suptawee</p> <p><b>INDIA</b></p> <p>Farm Implements</p> <p><b>SRI LANKA</b></p> <p>Brown &amp; Co. Hovael</p> <p><b>BANGLADESH</b></p> <p><b>TAIWAN</b></p> <p><b>PAKISTAN</b></p> <p><b>VIETNAM / CAMBODIA</b></p>
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**HOWARD is here to serve you**

**SALES & SERVICE**



**Noormah**  
*Export & Shipping*



**Wan Ramli**  
*Sales*



**Shafiq**  
*Sales*



**Bala**  
*Service Manager*



**Ismail**  
*Service*



**C.K. Lim**  
*Parts Manager*

**PARTS & PRODUCTION**



**Rafi**  
*Production Manager*



**Ibrahim**  
*Foreman Production*



**Maarof**  
*Foreman Assembly*



**Keshal**  
*Engineer*



**Yamin**  
*Engineer*



**Samsol**  
*Training & Demo*

**ADMINISTRATION & QA**



**Diana**  
*Purchasing*



**Zamary**  
*Store*



**Shukri**  
*Draughtsman*



**Mustafa**  
*Material QC*



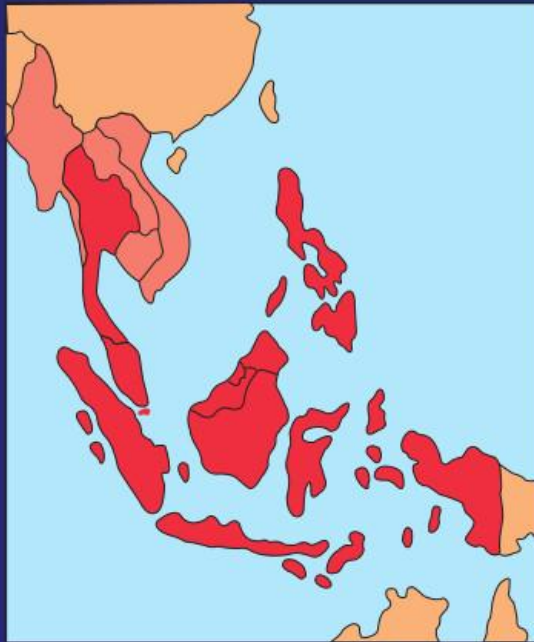
**Haliza**  
*Accounts*



**A. Nielsen**  
*Managing Director*



**HOWARD**



**In Southeast Asia since 1962**



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