CRUSH MAINTENANCE GUIDE & TROUBLESHOOTING

LUBRICATION – Parallel Squeeze Models Only – always keep parallel squeeze well lubricated to prevent seizing of the pivot and bush. Grease can be pumped into these points through the grease nipples located at points in the top and bottom frame. All pivot and bolt points on the headbail and rear door should be regularly sprayed with an aerosol lubricant (eg. Lanoguard, Inox or Teflon Spray) to ensure smooth working of head bail.

BOLTS – All bolts should be regularly checked for correct tightness. Bolts should be tightened firmly so they do not rattle around in bolt hole, but should not be over-tightened to cause restrictive movement of the headbail. Worn bolts should be replaced immediately.

HYDRAULIC RAM
Regularly spray the top of the ram (where the activator rod enters the housing) with an aerosol type lubricant. It is recommended when the unit is not in use open the head bail handle fully. This will place the chrome shaft of the ram inside the housing, thus protecting it from extended exposure to the elements.

We recommend you change the oil every 2 years with a light hydraulic oil/auto transmission fluid (ATF- DX-3) – 22 grade.

Always monitor the ram for any oil leaks, which may indicate a faulty seal. Any ram malfunction should be reported immediately to an RMP representative at head office – 07 5462 3433.

TROUBLE SHOOTING:

<table>
<thead>
<tr>
<th>FAULT</th>
<th>PROBLEM CAUSE</th>
<th>SUGGESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headbail won’t hold closed on animal</td>
<td>Activator rod may be stuck down after a period of non use</td>
<td>• Lubricate activator rod until it springs back up to touch the activator ring</td>
</tr>
<tr>
<td>Headbail won’t open completely</td>
<td>Water/condensation absorbed into ram</td>
<td>• Check for oil leaking out the top of the ram – may need new seals</td>
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<tr>
<td></td>
<td></td>
<td>• Follow the oil replenishment procedure outlined below</td>
</tr>
</tbody>
</table>
## OIL AMOUNTS:

<table>
<thead>
<tr>
<th>RAM COLOUR</th>
<th>HEADBAIL</th>
<th>HEADLOCK/CALF CRADLE</th>
<th>PARALLEL SQUEEZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow (1100mm long)</td>
<td>500ml</td>
<td>350ml</td>
<td>900ml</td>
</tr>
<tr>
<td>Maroon/Black (1100mm long)</td>
<td>400ml</td>
<td>350ml</td>
<td>900ml</td>
</tr>
<tr>
<td>Orange/Sky Blue (750mm long)</td>
<td>350ml</td>
<td>350ml</td>
<td>900ml</td>
</tr>
</tbody>
</table>

## OIL REPLENISHMENT

### 1. HEADBAIL RAM

1. Unbolt the whole ram off headbail
2. Pull out top activator rod & the bottom chrome shaft to drain remaining fluid out of the top and bottom of the ram
3. Check the condition of the seals inside the top & bottom of the ram – if damaged please contact RPM to purchase new seals
4. To begin filling the ram with the light hydraulic oil, put the top activator rod back in the top of the ram and turn the ram upside down
5. See table above for amount of oil required for your ram
6. Fill the bottom chamber of the ram with the light hydraulic oil up to the seals
7. When putting chrome bar back in the ram, the centre valve must be activated. Place a block under the bottom of the activator rod and push the ram down on top of it. This will release the pressure in the ram to allow the chrome bar to push back in.
8. Turn the ram back upright and remove the top activator rod
9. Fill the ram with the remaining amount of oil through the activator rod hole.
10. Put the activator rod back in the top of ram and begin bleeding process.
11. **IMPORTANT TO BLEED RAM** – see page 3 for this process

### 2. HEADLOCK/CALF CRADLE RAM

1. Unbolt the whole ram off the headlock
2. Unbolt the release handle off the top of the ram – this will release the activator rod & allow you to remove it
3. **FOLLOW** the same process above for the Headbail Ram.

### 3. PARALLEL SQUEEZE RAM

1. Unbolt the overhead ram from the crush
2. Pull out top activator rod & the bottom chrome shaft to drain remaining fluid out of the top and bottom of the ram
3. Check the condition of the seals inside the top & bottom of the ram – if damaged please contact RPM to purchase new seals
4. To begin filling the ram with the light hydraulic oil, put the top activator rod back in the top and turn the ram upside down
5. Fill the ram up to the seals and put the bottom chrome bar back in the ram.
6. Pour the remaining oil in to the reservoir (tank) on the top of the ram.
7. Bolt ram back on the top of the crush
8. Work squeeze approximately 20 times to allow for the ram to bleed

**IMPORTANT** – after bleeding the ram and putting the ram back onto the crush - work the headbail/headlock/squeeze open and closed 20-30 times to ensure that the ram is locking before working with animals again.
**BLEEDING PROCESS** – very important step!

Before replacing the strut back on equipment, it must be properly bled in order to extract any air from the pressure (lower) side of the system. The following method below is simple and only takes a minute:

1. Place a screwdriver or other suitable rod through the hole in the bottom of the ram (1” chrome bar)
2. Place your thumb or palm over the adjusting nut on top of the plunger (1/2” chrome bar)
3. With the ram resting on the ground, place a foot on either side of the screwdriver and pull the strut body upwards by approximately 150mm, while at the same time holding down the adjusting nut so that it stops against the top of the strut body.
4. Push the strut body downwards, while pressing and releasing the adjusting nut over and over
5. Repeat this process until you feel the strut begin to lock while you have the adjusting nut released, usually after about four cycles.
6. The strut is now bled and ready for installation.

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**SEAL KIT**

**Description**

This kit contains enough seals to recondition any one of the RPM Hydra strut cylinders. There is a variation on seals required depending upon whether you are servicing a headbail Ram, Squeeze (overhead) Ram, Headlock Ram or Calf cradle Ram

**Refer to accompanying diagram while servicing cylinder**

**Method**

1. Unbolt the ram off the unit and completely drain all the old oil out of the strut by withdrawing the bottom rod (1” diameter chrome bar) fully from the strut.
   - It is recommended you do this over a drum or other suitable container to catch the oil as it exists the strut.
2. Withdraw the plunger (1/2” diameter chrome bar) from the top of the strut, tip the strut over to drain the oil out of the reservoir
3. Using a suitable seal pick, remove firstly the ½” plunger pressure seal (Diagram 1) from the top of the cylinder, and both the Wiper seal (Diagram 3) and 1” Pressure Seal (Diagram 3) from the bottom of the ram cylinder and discard them.
4. Examine all components of ram for pitting and/or wear on the chrome rods and inside the ram cylinder. If rods or inside ram appear pitted, a new ram is usually required. Please contact RPM office for further investigation.
5. If necessary, clean all grooves with a suitable solvent (eg. Methylated spirit) and dry with compressed air.
6. To insert new seals, firstly lubricate the grooves with grease/oil. The plunger and wiper seals need to be replaced in reverse order of removal in bottom of ram.
7. **Bottom of Ram**: firstly insert the plunger seal by pinching the seal together between thumb and forefinger, inserting into groove, and winding into place (ensure the groove on the pressure seal faces back into the cylinder. Repeat process with the wiper seal, but ensure the projection of the wiper seal faces out of the cylinder and the serial numbers on the seal will therefore face back into cylinder.
8. **Top of Ram**: Using the same technique, insert the ½” plunger pressure seal, ensuring the groove on the seal is facing back into the cylinder.
9. Use the **Oil Replenishment** steps above to fill the ram with light hydraulic oil
10. Bleed the ram using the **Bleeding Process** above
11. Bolt the ram back onto unit.
**GENERAL CRUSH COMPONENTS & OPERATIONS**

**Headbail Operation**

The headbail can be operated from two points – the front and rear lever. Both levers are ‘drop down’ style levers that can be engaged by pushing them upwards and linking them to the top of the lever arm. This is a safety feature that prevents the lever from sticking out when not in use. The front lever is locked in place with a spring for easy operation. If the rear lever operation is preferred, it is recommended that the operator remove the front lever spring and attach it to the rear lever. It is **NOT** recommended to attach a spring to both headbail lever arms as this would engage both arms at the same time and it could result in a striking hazard to the operator or for those working or walking near the crush. As an added safety feature, both the front and rear levers are painted in a contrasting colour to the crush unit for high visibility.

**Parallel Squeeze & Ratchet Operation**

- **Engage squeeze** on animal - raise the lever arm so that it is horizontal and push or pull it towards the front end of the crush unit. This action engages the hydra-lock ram on top of the unit that squeezes the side walls together in a parallel motion and the ram locks the sides in place.
- **Disengage Squeeze** on animal – it can only be disengaged by pushing or pulling the lever arm horizontally back towards the rear of the crush unit and into its original position.
- **Ratchet Squeeze Model** – Pull out the locking pawl and place it on the locking plate between the teeth of the ratchet. Open both the bottom and top slit gate handles and push door in on animal, whilst the locking pawl skips over the locking plate. The locking pawl will lock the gate and can only be disengaged by pulling it up and pulling the gates back out towards you.

**Gates (side & vet inspection)**

All gates swing on a full length pipe hinge (Parallel squeeze models) or hinges (ratchet models), and are opened via cam handles. These cam handles are opened by raising the handle lever up and closed by pushing it down. All gates are designed to be shut rapidly (kicked or pushed) if required, and automatically lock in place without travelling past the locking point.

**Rear Door (animal access door)**

The rear door slides open and closed via nylon rollers and is operated by pulling a spring-loaded cam handle towards you to unlock/lock the door. Lubricate these wheels if required.

**Anti-Backing (Bum) Bar**

To operate, slide the removable galvanised bar (usually located behind the headbail) into the rear of the anti-backing system so it is positioned behind the animals rump. Then slide the bar right through the crush to the opposite sides anti-backing system. Lock into position by sliding forward with the multiple locking pins until the desired position is achieved. Care should be taken when using the bum bar as the force of the beast on the bar can present a striking hazard.

**Headlock (optional extra)**

- **To operate**, first ensure that the small lever on top of the headlock ram is in the down position. Now push the handle lever (galvanised bar) down; the headlock ram engages the headlock arms to begin closing in a scissor action around the animal’s head/neck.
- **To release**, slide the operation handle inwards so the bar is not sticking out in the way, hold onto the handle with a firm grip, the release the small lever on the top of the headlock ram by pulling up and slowly allow the headlock arms to open vertically fully.

**CAUTION** – headlock will open rapidly if not gripped firmly and could cause a striking injury. The headlock does not completely immobilise the animal’s head and care should still be taken when working on the animal.
Diagram 1
Top Seals and Plungers

Diagram 2
Valve Bodies

Diagram 3
Bottom Seals and Ram

Diagram 4
Ram Assembly
Headbail Ram Shown, Others Similar
1) RPM Australia - Pacific Pty Ltd trading as RPM A.B.N 46169595439 of 3 Industrial road, Gatton QLD 4343 in the state of Queensland ("the Manufacturer"), hereby guarantees to repair or replace any defect or fault in our LIVESTOCK EQUIPMENT caused by our manufacturing process which becomes apparent and is brought to the attention of the manufacturer within a period of twelve (12) months from the date of purchase, subject to the following conditions:
   a) The manufacturer will only recognise a claim-
   b) Made in writing to the Manufacturer at the Manufacturers principle place of business made within twelve (12) months of the date of purchase; and
   c) Made within seven (7) days of the defect or fault becoming apparent; and
   d) Supported by evidence of proof of purchase from the Manufacturer and the date of purchase, satisfactory to the manufacturer.

2) The Manufacturer must be given the opportunity to inspect the LIVESTOCK EQUIPMENT within twenty eight (28) days of notification of a claim pursuant to clause 1 herein. Failure to comply with clause 1 and 2 herein will void this guarantee.

3) This Guarantee is null and void if the LIVESTOCK EQUIPMENT is :-
   a) Not installed in accordance with the Manufacturer's requirements;
   b) Used for a purpose other than as a livestock restraining or holding device; or
   c) Used for a purpose considered not fit for the equipment;
   d) Altered in any way

4) The Manufacturer's liability under this Guarantee is limited to the repair or replacement of the LIVESTOCK EQUIPMENT at the company's discretion.

5) The original receipt must be kept as proof of purchase to validate the warranty.

6) To the extent permissible by law, the Manufacturer will not be liable for any consequential losses arising from any manufacturing defect or fault in the LIVESTOCK EQUIPMENT including loss of profits or damage to property caused as a result of the defect or fault, or repair of the LIVESTOCK EQUIPMENT.

7) This Guarantee does not extend to the colour of the LIVESTOCK EQUIPMENT, and the buyer acknowledges that the colour of the LIVESTOCK EQUIPMENT may fade or change over time. Crush accessories such as baulk gates, headlocks, and droppers are guaranteed 12 months.

8) This Guarantee is void and will not be binding upon the Manufacturer in the event of;
   a) Abuse or misuse of the LIVESTOCK EQUIPMENT
   b) Damaged cause as a result of the LIVESTOCK EQUIPMENT not being properly secured;
   c) Damage caused through negligence or neglect of any party other than the manufacturer;
   d) Unauthorised modifications to the LIVESTOCK EQUIPMENT

9) This Guarantee does not extend to any costs associated with the removal or reinstallation of the LIVESTOCK EQUIPMENT for the purposes of inspection, effecting repairs and/or replacement as contemplated by this Guarantee. Any such costs including freight both ways will be at the owner's expense.

10) This Guarantee does not extend to any defects of faults of the LIVESTOCK EQUIPMENT other than defaults or faults caused as a result of the manufacturing process.

11) This Guarantee is transferable to any heirs or successors in title provided the transferee complies in all respects with the terms of this Guarantee. Nothing in the clause extends to the period of the Guarantee beyond twelve (12) months of the date of purchase from the manufacturer.
Thank you for purchasing a product from the RPM Range. To assist us in providing valuable after sales service, please fill in the following details and return within 30 days from receiving your new RPM product.

Purchaser’s Name (full):

Business Name (if applicable):

Phone: _______ Fax: _______

Address: __________________________________________________________________________

Postcode: ________

Email: ____________________________________________________________________________

Product/s Purchased: ______________________________________________________________________

Serial Number/s: (Located inside the crush on the top runner near the headbail)

Delivery Date: ___/___/____

Dealer Name: _______________________________________________________________________

Location of Dealer: ____________________________

Are you interested in receiving further information regarding the RPM Product Range?

Yes/No (Please Circle)

If so, what information are you interested in?

_____________________________________________________________________________________

In signing this warranty, I acknowledge that I have both read and understood the RPM Operation & Maintenance Guide for the product/s I have purchased.

Purchaser’s Signature: ___________________ Date: ________________

Please return by post to:

Warranty Card Registration
RPM Australia-Pacific Pty Ltd
3 Industrial Road
Gatton QLD 4343

or by fax on 1800 648 667