

# Spearhead

## RC 132/162 ROTARY HEADS



Edition 1.0 - August 2017  
Part No. 8999108

**HANDBOOK & PARTS MANUAL**

## IMPORTANT

### VERIFICATION OF WARRANTY REGISTRATION



### DEALER WARRANTY INFORMATION & REGISTRATION VERIFICATION

It is imperative that the selling dealer registers this machine with Spearhead Machinery Limited before delivery to the end user – failure to do so may affect the validity of the machine warranty.

To register machines go to the Spearhead Machinery Limited web site at [www.spearheadmachinery.com](http://www.spearheadmachinery.com), log onto 'Dealer Inside' and select the 'Machine Registration button' which can be found in the Service Section of the site. Confirm to the customer that the machine has been registered in the section below.

Should you experience any problems registering a machine in this manner please contact the Spearhead Service Department on 01789 491867.

#### Registration Verification

Dealer Name:			
Dealer Address:			
Customer Name:			
Date of Warranty Registration:	/	/	Dealer Signature: <input type="text"/>

### NOTE TO CUSTOMER / OWNER

*Please ensure that the above section has been completed and signed by the selling dealer to verify that your machine has been registered with Spearhead Machinery Limited.*

**IMPORTANT:** During the initial 'bedding in' period of a new machine it is the customer's responsibility to regularly inspect all nuts, bolts and hose connections for tightness and re-tighten if required. New hydraulic connections occasionally weep small amounts of oil as the seals and joints settle in – where this occurs it can be cured by re-tightening the connection – refer to torque settings chart below. The tasks stated above should be performed on an hourly basis during the first day of work and at least daily thereafter as part of the machines general maintenance procedure.

### CAUTION: DO NOT OVER TORQUE HYDRAULIC FITTINGS AND HOSES

#### TORQUE SETTINGS FOR HYDRAULIC FITTINGS

HYDRAULIC HOSE ENDS			PORT ADAPTORS WITH BONDED SEALS		
BSP	Setting	Metric	BSP	Setting	Metric
1/4"	18 Nm	19 mm	1/4"	34 Nm	19 mm
3/8"	31 Nm	22 mm	3/8"	47 Nm	22 mm
1/2"	49 Nm	27 mm	1/2"	102 Nm	27 mm
5/8"	60 Nm	30 mm	5/8"	122 Nm	30 mm
3/4"	80 Nm	32 mm	3/4"	149 Nm	32 mm
1"	125 Nm	41 mm	1"	203 Nm	41 mm
1.1/4"	190 Nm	50 mm	1.1/4"	305 Nm	50 mm
1.1/2"	250 Nm	55 mm	1.1/2"	305 Nm	55 mm
2"	420 Nm	70 mm	2"	400 Nm	70 mm

## WARRANTY POLICY

### WARRANTY REGISTRATION

All machines must be registered, by the selling dealer with Spearhead Machinery Ltd, before delivery to the end user. On receipt of the goods it is the buyer's responsibility to check that the Verification of Warranty Registration in the Operator's Manual has been completed by the selling dealer.

#### 1. LIMITED WARRANTIES

- 1.01. All machines supplied by Spearhead Machinery Limited are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 12 months, unless a different period is specified.
- 1.02. All spare parts supplied by Spearhead Machinery Limited are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 6 months.
- 1.03. The manufacturer will replace or repair for the purchaser any part or parts found, upon examination at its factory, to be defective under normal use and service due to defects in material or workmanship. Returned parts must be complete and unexamined.
- 1.04. This warranty does not apply to any part of the goods, which has been subjected to improper or abnormal use, negligence, alteration, modification, fitment of non-genuine parts, accident damage, or damage resulting from contact with overhead power lines, damage caused by foreign objects (e.g. stones, iron, material other than vegetation), failure due to lack of maintenance, use of incorrect oil or lubricants, contamination of the oil, or which has served its normal life. This warranty does not apply to any expendable items such as blades, flails, bushes, belts, flap kits, skids, shields, guards, wear pads or pneumatic tyres.
- 1.05. Temporary repairs and consequential loss - i.e. oil, downtime and associated parts are specifically excluded from the warranty.
- 1.06. Warranty on hoses is limited to 12 months and does not include hoses which have suffered external damage. Only complete hoses may be returned under warranty, any which have been cut or repaired will be rejected.
- 1.07. Machines must be repaired immediately a problem arises. Continued use of the machine after a problem has occurred can result in further component failures, for which Spearhead Machinery Ltd cannot be held liable, and may have safety implications.
- 1.08. Except as provided herein, no employee, agent, dealer or other person is authorised to give any warranties of any nature on behalf of Spearhead Machinery Ltd.
- 1.09. For machine warranty periods in excess of 12 months the following additional exclusions shall apply:
  - 1.09.1. Hoses, external seals, exposed pipes and hydraulic tank breathers.
  - 1.09.2. Filters
  - 1.09.3. Rubber mountings
  - 1.09.4. External electric wiring.
  - 1.09.5. Labour and mileage costs.
- 1.10. All service work, particularly filter changes, must be carried out in accordance with the manufacturer's service schedule. Failure to comply will invalidate the warranty. In the event of a claim, proof of the service work being carried out may be required.

***NB Warranty cover will be invalid if any non-genuine parts have been fitted or used. Use of non-genuine parts may seriously affect the machine's performance and safety. Spearhead Machinery Ltd cannot be held responsible for any failures or safety implications that arise due to the use of non-genuine parts.***

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## **2. REMEDIES AND PROCEDURES**

- 2.01. The warranty is not effective unless the Selling Dealer registers the machine, via the Spearhead Machinery web site and confirms the registration to the purchaser by completing the confirmation form in the operator's manual.
- 2.02. Any fault must be reported to an authorised Spearhead Machinery dealer as soon as it occurs. Continued use of a machine, after a fault has occurred, can result in further component failure for which Spearhead Machinery Ltd cannot be held liable.
- 2.03. Repairs should be undertaken within two days of the failure. Claims submitted for repairs undertaken more than 2 weeks after a failure has occurred, or 2 days after the parts were supplied will be rejected, unless the delay has been authorised by Spearhead Machinery Ltd.
- 2.04. All claims must be submitted, by an authorised Spearhead Machinery Service Dealer, within 30 days of the date of repair.
- 2.05. Following examination of the claim and parts the manufacturer will pay, at their discretion, for any valid claim the cost of any parts and an appropriate labour allowance if applicable.
- 2.06. The submission of a claim is not a guarantee of payment.
- 2.07. Any decision reached by Spearhead Machinery Ltd is final.

## **3. LIMITATION OF LIABILITY**

- 3.01. The manufacturer disclaims any express (except as set forth herein) and implied warranties with respect to the goods including, but not limited to, merchantability and fitness for a particular purpose.
- 3.02. The manufacturer makes no warranty as to the design, capability, capacity or suitability for use of the goods.
- 3.03. Except as provided herein, the manufacturer shall have no liability or responsibility to the purchaser or any other person or entity with respect to any liability, loss, or damage caused or alleged to be caused directly or indirectly by the goods including, but not limited to, any indirect, special, consequential, or incidental damages resulting from the use or operation of the goods or any breach of this warranty. Notwithstanding the above limitations and warranties, the manufacturer's liability hereunder for damages incurred by the purchaser or others shall not exceed the price of the goods.
- 3.04. No action arising out of any claimed breach of this warranty or transactions under this warranty may be brought more than one (1) year after the cause of the action has occurred.

## **4. MISCELLANEOUS**

- 4.01. The manufacturer may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.
- 4.02. If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.
- 4.03. Applicable law may provide rights and benefits to the purchaser in addition to those provided herein.

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**This machine is produced by Greentec A/S on behalf  
of Spearhead Machinery Limited.**

**CE Declaration of Conformity,  
Conforming to EU Machinery Directives  
2006/42/EF**

We, GreenTec A/S, Merkurvej 25, DK-6000 Kolding hereby declare  
that:

*Product* .....

*Product Code*.....

*Serial No.*.....

*Type*.....

Manufactured by: GreenTec A/S, Merkurvej 25, DK-6000 Kolding

In terms of its design, method of construction and execution thereof, the item of  
machinery described above complies with the basic health and safety regulations  
of the respective EU Directives. The Machinery Directive is supported by the  
following harmonized standards:

- DS/EN ISO 12100 3<sup>rd</sup> edition 2011. Safety of Machinery – General principles  
for design – Risk assessment and risk reduction.
- DS/EN 953+AI 4<sup>th</sup> edition 2010. Safety of Machinery – Guards – General  
requirements for the design and construction of fixed or moveable guards.
- DS/EN ISO 4413 1<sup>st</sup> edition 2010. Hydraulic fluid power – General rules and  
safety requirements for systems and their components

The EC Declaration only applies if the machine stated above is used in accordance  
with the operating instructions.



*Signed*

(On behalf of GreenTec A/S)

*Status*

Sales Director

*Date*

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# Spearhead RC 132/162

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# Spearhead RC 132/162

## INTRODUCTION

The Spearhead RC Rotary Head is a professional attachment tool designed specifically for hedge trimming and developed for the discerning customer with a focus on cutting performance, efficiency and output and working environment.

The attachment is used for hedges and smaller branches and bushes that have a maximum diameter of 30mm (RC132) and 40mm (RC162) without fraying the branches. The machine consists of a self-supporting shield with 3 shafts for mounting rotors with 6 tempered blades. Each shaft is driven by ridged belts and the overall working is through the hydraulic driven vehicle. The branch raiser is situated beneath the lower rotor. The hedge cutter is supplied with an adaptor for mounting on various vehicles. The belt drive is fully covered by a safety steel cover. Gaining access to the belt drive for maintenance purposes requires loosening 2 bolts.



## Important Note

The information contained in this manual is correct at the time of publication. However, in the course of constant development, changes in specification are inevitable. Should you find the information given in this book different to the machine it relates to please contact the “After Sales Department” for advice.

**Please ensure that this manual is handed to the operator before using the machine for the first time. The operator must fully understand the contents of this manual before using this machine.**

**If the machine is resold the Manual must be given to the new operator**



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## GENERAL INFORMATION

Read this manual before fitting or operating the machine or accessory. Whenever any doubt exists contact your local dealer or the Spearhead Machinery Service Department for assistance.

**Only use 'Genuine Spearhead Parts' on Spearhead Machinery and equipment.**

**DEFINITIONS:** *The following definitions apply throughout this manual;*

### **DANGER**



**DANGER:** Alerts to a hazardous situation which will result in death or serious injury if not observed carefully.

### **WARNING**



**WARNING:** Alerts to a hazardous situation which will result in death or serious injury if not observed carefully.

### **CAUTION**



**CAUTION:** Alerts to a hazardous situation which could result in damage to the machine and/equipment if not observed correctly.

### **NOTICE**



**NOTICE:** Specific or general information considered important or useful to emphasise.

**LEFT HAND (LH) & RIGHT HAND (RH):** These terms are applicable to the machine when fitted to the tractor and viewed from the rear; these terms also apply to the tractor references.

## **SERIAL PLATE**

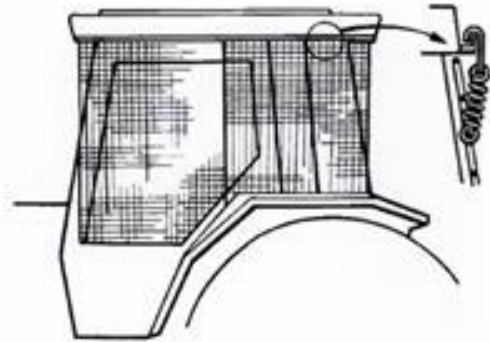
All machines are equipped with a serial plate containing important information relating to the machine including a unique serial number used for identification purposes.

**Note:** Images in this manual are provided for instruction and information purposes only and may not show components in their entirety. In certain instances images may appear different to the actual machine; when this occurs the general procedure will be basically the same.

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## VEHICLE/TRACTOR PREPARATION

We recommend vehicles are fitted with cabs using 'safety glass' windows and protective guarding when used with our machines. Fit an Operator Guard such as Spearheads' available guard kit (part number OPT0603) and using the hooks provided fit it to the vehicle. Shape the mesh to cover all vulnerable areas. The driver must be looking through mesh and/or polycarbonate glazing when viewing the complete working machine in any working position – unless the vehicle/cab manufacturer can demonstrate that the penetration resistance is equivalent to, or higher than, that provided by mesh/polycarbonate glazing. If the tractor has a roll bar only, a frame must be made to carry both mesh and polycarbonate glazing. The operator should also use personal protection equipment (PPE) to reduce the risk of serious injury such as; eye protection (mesh visor to EN1731 or safety glasses to EN166), hearing protection to EN352, safety helmet EN297, gloves and high visibility clothing.



### Vehicle Ballast

It is imperative when attaching 'third-party' equipment to a vehicle that the maximum possible stability can be accomplished by the utilisation of 'ballast' in order to counter-balance the additional equipment added. RC Rotary Hedge Cutters have been tested on the following reach arm systems: Spearhead Twiga MID, PRO & FLEX with tractors from 4400kg, wheelbase of 250 cm and a track width of 200 cm measured from/to the outer edge of the tyre till tractors of 5500kg, wheelbase of 280cm and a track width of 250cm measured from/to the outer edge of the tyre. Because there are different types of tractor structures and differences in weight distribution you must view this as a "guideline". Is it possible, then choose wide tyres as possible to increase the stability of the vehicle.

### Front Weights

May be required for rear mounted machines to place 15% of total outfit weight on the front axle for stable transport on the road and to reduce 'crabbing' due to the drag of the cutting unit when working on the ground.

### Rear Weights

May be required to maintain a reasonable amount of rear axle load on the Opposite wheel from the arms when in work; for normal off-ground work i.e. hedge cutting this should be 20% of rear axle weight or more for adequate control, and for ground work i.e. verge mowing with experienced operators, this can be reduced to 10%. All factors must be addressed in order to match the type and nature of the equipment added to the circumstances under which it will be used – in the instance of reach arm hedge cutters it must be remembered that the machines centre of gravity during work will be constantly moving and will differ from that during transport mode, therefore balance becomes critical.

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## **Factors That Affect Stability**

- Centre of gravity of the tractor/machine combination.
- Geometric condition e.g. position of the cutting head and ballast.
- Weight, track width and wheelbase of the tractor.
- Acceleration, braking, turning and the relative position of the cutting head during these operations.
- Ground conditions, e.g. slope, grip, load capability of the soil/surface.
- Rigidity of implement mounting.

## **Suggestions To Increase Stability**

- Increasing wheel track; a vehicle with a wider wheel track is more stable.
- Ballasting the wheel; it is preferable to use external weights but liquid can be added to around 75% of the tyre volume – water with anti-freeze or the heavier Calcium Chloride alternative can be used.
- Addition of weights – care should be taken in selecting the location of the weights to ensure they are added to a position that offers the greatest advantage.
- Front axle locking (check with tractor manufacturer).

**NOTE: The advice above is offered as a guide for stability only and is not a guide to vehicle strength. It is recommended that you consult your vehicle manufacturer or local dealer to obtain specific advice on this subject, additionally advice should be sought from a tyre specialist with regard to tyre pressures and ratings suitable for the type and nature of the machine you intend to fit.**

## **SAFETY FOR MAINTENANCE & OPERATOR**

The safety advice in this manual, the present national emergency preventing precepts and existing in-house work, operation and safety precepts must be complied with.

Additionally the safety precepts of the vehicle manufacturer must be complied with. If the machine is used on public roads, the existing laws apply.

### **Safety Advice For Maintenance And Inspection:**

- The head of operations must see it that all maintenance, inspections and fittings are carried out by authorized personnel who have read and understood the contents of this manual.
- Maintenance must only be carried out when the machine is at standstill. This procedure as described in Spearheads' manual must be carefully observed.
- When maintaining a rotary head and/or a machine that is lifted, always secure with suitable support units.
- When replacing blades and the like always check the hydraulic system for remaining pressure; always reduce the pressure to zero.
- Only use suitable tools and always wear work gloves, safety shoes and goggles.
- Dispose of oil and grease according to regulation.
- Immediately after finishing work, all safety and protection units must be installed and activated again.
- Before any use, the sections "Putting Into Operation" by the manufacturer of the tractor/vehicle must be carefully followed.

### **Safety Advice For The Head Of Operation/User:**

- It is of the most utmost importance to be familiar with the equipment and the operational units before starting work. Afterwards it is too late.
- Work wear must be tight fitted. Avoid loose fitted clothes. Check surroundings before work (children or obstacles such as rocks, fence posts, wire etc.). Always make sure there is a sufficient view. Safety distance for a tool in work is stated in the manual.
- Riding the rotary head or machine when transported or in work is not permitted.
- Never leave the driver's seat when driving.
- Staying in the work area is forbidden. Safety distance for the rotary head is stated in the manual.
- Take extra precautions when working underneath power lines. Always keep a safe distance to power lines.
- Before leaving the vehicle, always lower machine/rotary head to the ground, remove the ignition key and secure the vehicle from inadvertent activation and rolling!

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## SAFETY AND INSTRUCTIONAL DECALS IDENTIFICATION



**Warning**  
Avoid fluid escaping under pressure. Consult technical manual for service procedures.



**Warning**  
Stop engine and remove key before performing maintenance or repair work.



**Warning**  
Danger – flying objects. Keep safe distance from the machine as the engine is running.



**Warning**  
Check all nuts and bolts are tight every 8 hours – retighten if required.



**Warning**  
Stay clear of rotating saw blades.



**Warning**  
Carefully read operators manual before handling this machine. Observe instructions and safety rules when operating.



**Warning**  
Do not remove/open guard when parts are rotating.



**Warning**  
Do not stand and ride on the machine at any time.

## ADDITIONAL SAFETY ADVICE

### Training

Operators need to be competent and fully capable of operating this machine in a safe efficient way prior to attempting to use it in any public place. We advise therefore that the prospective operator make use of relevant training courses available such as those run by the Agricultural Training Board, Agricultural Colleges, Dealers and Spearhead.

### Working In Public Places

When working in public places such as roadsides, consideration should be paid to others in the vicinity. Stop the machine immediately when pedestrians, cyclists and horses etc. pass. Restart only when they are at a distance that causes no risk to their safety.

### Warning Signs

It is advisable that any working area be covered by suitable warning signs and statutory in public places. Signs should be highly visible and well placed in order to give clear advanced warning of the hazard. Contact the Department of Transport of your Local Highway Authority to obtain detailed information on the subject. The latter should be contacted prior to working on the public highway advising them of the time and location of the intended work asking what is required by the way of signs and procedure – ‘Non-authorized placement of road signs may create offences under the Highways Act’.

### Suggested Warning Signs Required

The reach arm machine must be fitted with a white on blue, 600mm diameter ‘**Keep Left**’ (\*) direction arrow. A white with red border ‘**Hedge Cutting**’ warning triangle of at least 750mm tall must be placed at no greater distance than 500m from the tractor at any time. These hedge cutting signs should also be placed at key restricted view areas such as bridges and sharp bends.

***\*NOTE – this applies to UK Market machines where traffic passes to the right of a machine working in the same direction as the traffic flow. The direction, use and colour of the arrow depend on the country of use and the Local Highway Authorities regulations in the locality.***

### Use of Warning Signs

- On two-way roads, one set of signs is required to be facing in each direction.
- Work should be carried out within 500m of the signs. The signs will then be required to be moved.
- Work only when visibility is good and at times of flow e.g. NOT during ‘rush-hour’.
- Vehicles should have at least one 360° visible amber flashing beacon (preferably two) or a light bar comprising at least two

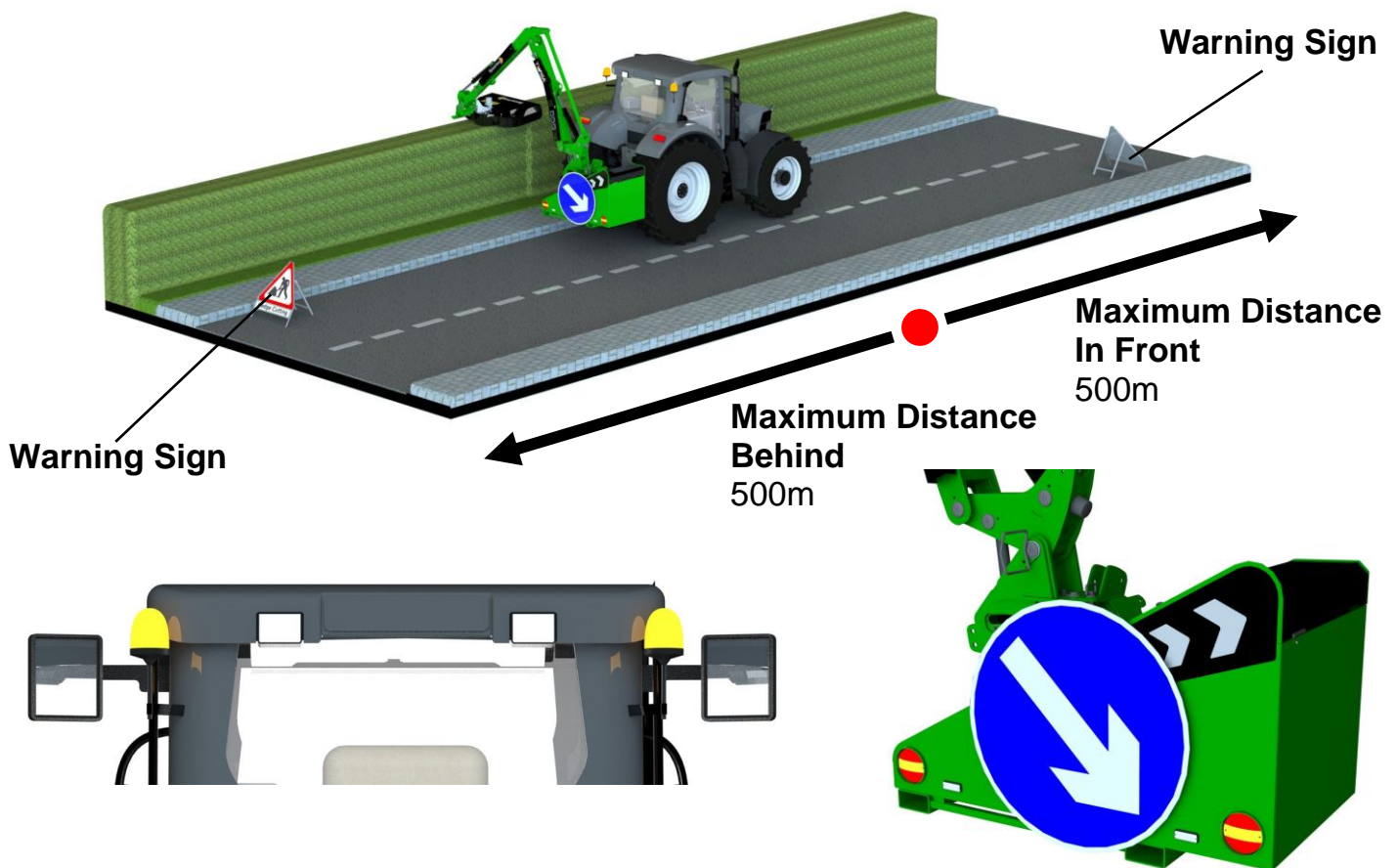




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independent light sources which are clean.

- Ideally, vehicles should be conspicuously coloured and have high visibility rear markings which are clean
- Debris should be removed from the road and path as soon as practicable, and at regular intervals, wearing high visibility clothing and before removing the hazard warning signs.
- Collect all road signs promptly when the job is complete.



## Safety Gear

It is recommended that the following personal protective equipment is worn when the operating and/or maintaining this machine; coveralls, safety boots, safety glasses, hearing protection, safety helmet, protective gloves.

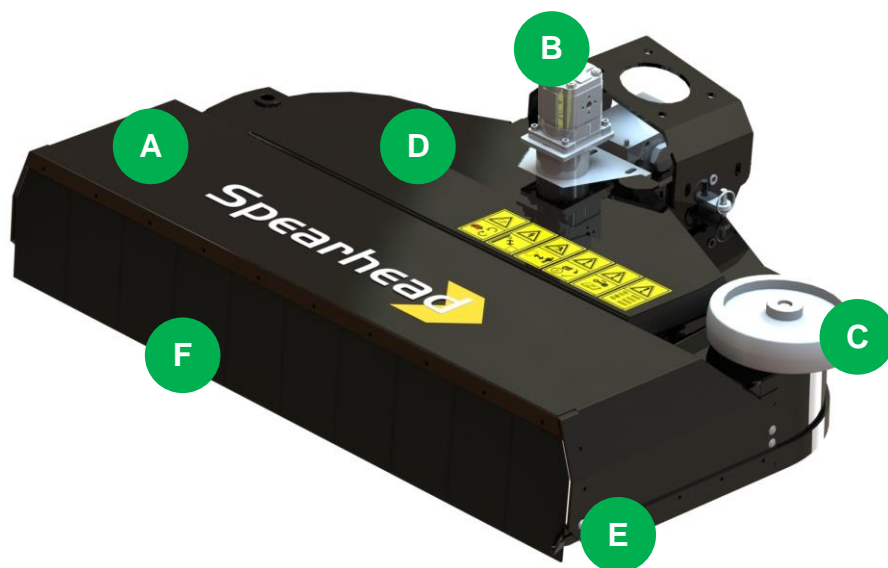


Although the information stated here covers a wide range of safety subjects it is impossible to predict every eventuality that can occur under different circumstances whilst operating this machine. No advice given here can replace 'good common sense' and 'total awareness' at all times, but will go a long way towards the safe use of your Spearhead machine.

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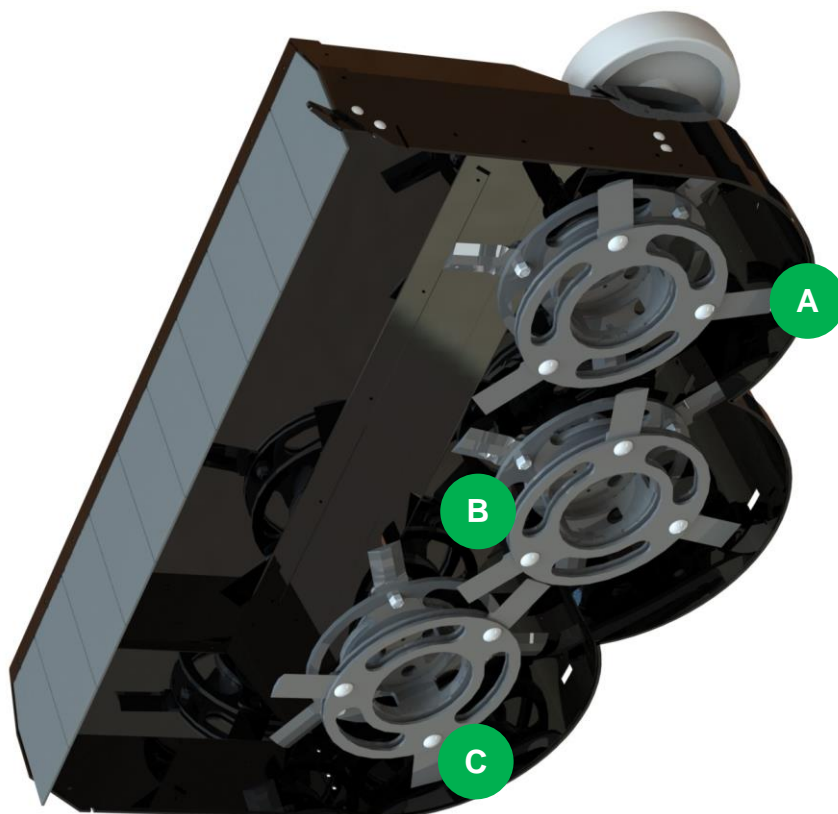
## COMPONENTS IDENTIFICATION

- a) Main Body
- b) Motor
- c) Support Wheel
- d) Guard For Belt Drive
- e) Branch Guide
- f) Front Flap



## Blade Unit Components

- a) Blade
- b) Upper + Lower Blade Carriers
- c) Blade Bolt





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## FEATURES

- Working width approximately 1.3m (RC132) and 1.6m (RC162)
- 540 RPM operating speed
- 110kg (RC132), 150kg (RC162) weight (without extra equipment)
- Three rotors with double knife system (3+3 blades)
- “Powerbelt” system
- Mechanically adjustable angle of the machine
- Hardox Steel
- Support wheels
- Branch raiser

## SPECIFICATION

	RC 132	RC162
<b>Oil Quantity</b>	40 l/min	
<b>Hydraulic Motor</b>	16ccm gearmotor with integrated bearing. Reversible	16 ccm Gearmotor with integrated bearing. Reversible
<b>Relief Valve In Motor</b>	N/A	180 bar non adjustable
<b>Power Requirement</b>	13.3 kW / 18.3 Hp	
<b>Operation Speed</b>	2500 rpm	2500-2600 rpm
<b>Max Oil Pressure</b>	200 bar/20 MPa	280 bar/28 MPa
<b>Max Leak Pressure</b>	0-1.5 bar / 0-0.15 MPa	
<b>Max Return Pressure</b>	15 bar / 1.5 MPa	
<b>Oil Filtering Standard</b>	10 micron	
<b>Recommended Hydraulic Oil</b>	Cold Climate – HLP 46 Warm Climate – HLP 68	
<b>Designed For</b>	Hedges	
<b>Branches Sizes</b>	0-30 mm	0-40 mm
<b>Allowed Angles</b>	From -15° to +90°	
<b>Field Of Application</b>	Vertical and Horizontal	
<b>Belt Tension</b>	New Belt – 950 Nm Used Belt – 720 Nm	New Belt – 1100 Nm Used Belt – 900 Nm
<b>Working Width</b>	130 cm	160 cm
<b>Total Height</b>	47 cm	52 cm
<b>Total Width</b>	134 cm	163 cm
<b>Total Length</b>	97 cm	97 cm
<b>Weight</b>	110 kg	150 kg
<b>Knife Mounting Lower</b>	360° Rotating	
<b>Knife Mounting Upper</b>	110° Rotating	
<b>Knife Bolt Torque</b>	95 Nm	
<b>Working Season</b>	Spring - Fall	

## SAFETY AROUND THE MACHINE

### Beware of the following Potential Dangers:

- Becoming trapped when hitching or unhitching.
- Tractor overbalancing when arm is extended.
- Electrocutation due to hitting overhead power lines.
- Getting caught on rotating take off (PTO).
- Being hit or caught by any moving part, e.g. belts, pulleys, arms, cutting head.
- Being hit by flying debris or machine parts due to machine damage.
- Machine overbalancing when not in use.
- Injection of high pressure oil from damaged couplings or hydraulic hoses.
- Accidents due to collision with other machines, or debris left on road.

### Always

- Ensure the operator has read this handbook and has been trained to use the machine.
- Ensure all cab safety guards are in place and all tractor windows closed.
- Before leaving the tractor cab always ensure the rotary head is firmly on the ground, no weight is on the machines' hydraulics and the rotor has stopped spinning.
- Check that all guards are properly fitted and there are no damaged or loose parts. Particular attention should be given to the blades to ensure they are not damaged, cracked or missing.
- Inspect work area for wire, steel posts, large stones and other dangerous materials and remove before starting work.
- Beware of the danger of overhead power cables. The operator must be aware of the maximum height and reach of the machine when working under power cables. The minimum height for 11,000 and 22,000-volt cables is 5.2 metres from the ground. When fully extended, the machine may well exceed this height so extreme caution should be practised. For more information see the Health and Safety Executive or your local power company.
- Ensure that all warning labels are always visible and that they are not damaged, defaced or missing.
- Lower the head to the ground when parking up.
- Fit locking pins to slew and height before transport and before unhitching when applicable.
- Wear ear defenders if operating without a quiet cab or with cab windows open.
- Ensure tractor guards are fitted correctly and are undamaged.
- Work at a safe speed, taking into account terrain, passing vehicles and obstacles.
- Ensure that the tractor meets the minimum weight recommendations of the machine manufacturer and that ballast is used if necessary.
- Check that machine fittings and couplings are in good condition.
- Follow the manufacturer's instructions for attachment and removal of the machine from the tractor.

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- Use clear warning signs to alert others to the type of machine working in the vicinity. Signs should be placed at both ends of the work site and should be in accordance with the Department of Transport recommendations.
- Ensure cutting blades are of the type recommended by the manufacturer, are securely fitted and are undamaged.
- Ensure hydraulic pipes are correctly routed to avoid damage from chafing, stretching, pinching or kinking.
- Disengage the machine, stop the engine and remove the key before leaving the tractor cab for any reason.
- Clean up any debris left at the work site.
- Ensure that when you remove the machine from the tractor it is secured in a safe position using stands provided.

## Never

- Never operate the machine with other people present, as it is possible for debris, including stones, to be discharged from the front and rear of the head. **WARNING:** Some cutting heads may continue to 'freewheel' for up to 20 seconds or more after being stopped.
- Never operate the machine until you have read and understood the relevant handbook and are familiar with the controls.
- Never use a machine that is poorly maintained or has guards that are damaged or missing.
- Never allow an inexperienced person to operate the machine without supervision.
- Never use/fit a machine onto a tractor if it doesn't meet the manufacturer's specification.
- Never use a machine if the hydraulic system shows signs of damage.
- Never allow children to play on or around the machine at any time.
- Never attempt any maintenance or adjustment without first disengaging the PTO, lowering the head to the ground, stopping the tractor engine and applying the tractor parking brake.
- Never leave the cab without removing the ignition key.
- Never operate the tractor or any controls from anywhere other than driving seat.
- Never stop the engine with the PTO engaged.
- Never operate with blades missing.
- Never operate PTO **above** recommended speed, 540 RPM.
- Never operate with wire around any rotor. Stop immediately.
- Never use the head at any angle, which may throw debris towards the cab.
- Never attempt to use the machine for any purpose other than what it was designed for.
- Never transport with PTO engaged.
- Never enter the working area of the machine (risk of injury!).
- Never transport with the controls live, always turn off the isolator switch (red) and disconnect supply.
- Attempt to detect a hydraulic leak with your hand; use a piece of card.

# Spearhead RC 132/162

---

## BEFORE STARTING WORK:

### Description of the RC Rotary Hedge Cutter:

Hydraulic driven hedge cutter.

The tool is used for hedges and smaller branches and bushes that have a maximum diameter of 30mm (RC132) and 40mm (RC162) without fraying the branches. The machine consists of a self-supporting shield with 3 shafts for mounting rotors with 6 tempered blades. Each shaft is driven by ridged belts and the overall working is through the hydraulic driven vehicle. The branch raiser is situated beneath the lower rotor. The hedge cutter is supplied with an adaptor for mounting on various vehicles. The belt drive is fully covered by a safety steel cover. Gaining access to the belt drive for maintenance purposes requires loosening 2 bolts.

### Setting Up For Work:

- Wear safety glasses and work gloves.
- Remove transport safeguard if fitted and turn the armsystem into work position.
- Start the tool at low oil flow (low rpm). Let the tool warm up for a few minutes.
- Adjust machine **horizontally/vertically** for cutting and raise into work position.
- Adjust the rotor rotations to the recommended speed and drive with a safe speed that is adjusted to the terrain and other possible obstacles.

### Tool Start:

- Choose low engine RPM.
- Make sure that the surrounding area is secured.
- **Warm start** – start the tool.
- **Cold start** – never start the tool at maximum speed. Let the tool run without much strain for approximately 15 minutes to heat up the oil.
- Slowly increase rpm until the correct oil amount is reached.
- Never attempt to restart a strained/wedged in tool. Stop the tool and the vehicle engine. Remove the ignition key and engage the handbrake. Only then it is safe to remove the wedged in material. Always wear safety glasses and work gloves.

### Tool Stop:

- Reduce engine RPM to fast idling and stop the tool.
- Never increase or reduce the oil amount too fast. This will damage the hydraulic system on a long-term basis.
- When you are finished working, stop the engine, remove the ignition key and engage the handbrake. Always wear safety glasses and work gloves. Refit safeguard. Beware of sharp cutting parts!
- Always show consideration for other road users during transportation.

### Power Lines:

- Always pay close attention to overhead lines. Between power poles there is always risk of hitting overhead lines. When in doubt please contact your local power station for advice concerning safety distance.



# Spearhead RC 132/162

---

## MOUNTING/DISMOUNTING THE MACHINE:

### WARNING



Mounting tool must be done at a plane and safe surface. Always pay close attention when mounting the tool to the machine; make sure that no persons are within range of the blades, as these can cause injuries even when stationary.. Always wear work gloves.

### DANGER



Never use the tool on an unstable or non-suitable vehicle.

Mounting to an arm system or similar:

Tools can be mounted to the arm system with a Quickhitch or with bolts. Spearhead RC Rotary Heads are designed specifically for Spearhead's various reach arm machines.

RC Rotary Heads are designed to be mounted on tractors via a suitable armsystem. The RC132 has a work width of approximately 130cm with a weight of 110kg. The RC162 has a work width of approximately 160cm with a weight of 150kg. If necessary, ballast can be mounted on the vehicle or the reach arm to ensure stability and balance during any work or working conditions.

### WARNING



Never use the machine with broken or missing blades.

### WARNING



Be careful with rotating blades. Danger of cuts! Danger of getting caught!

### DANGER

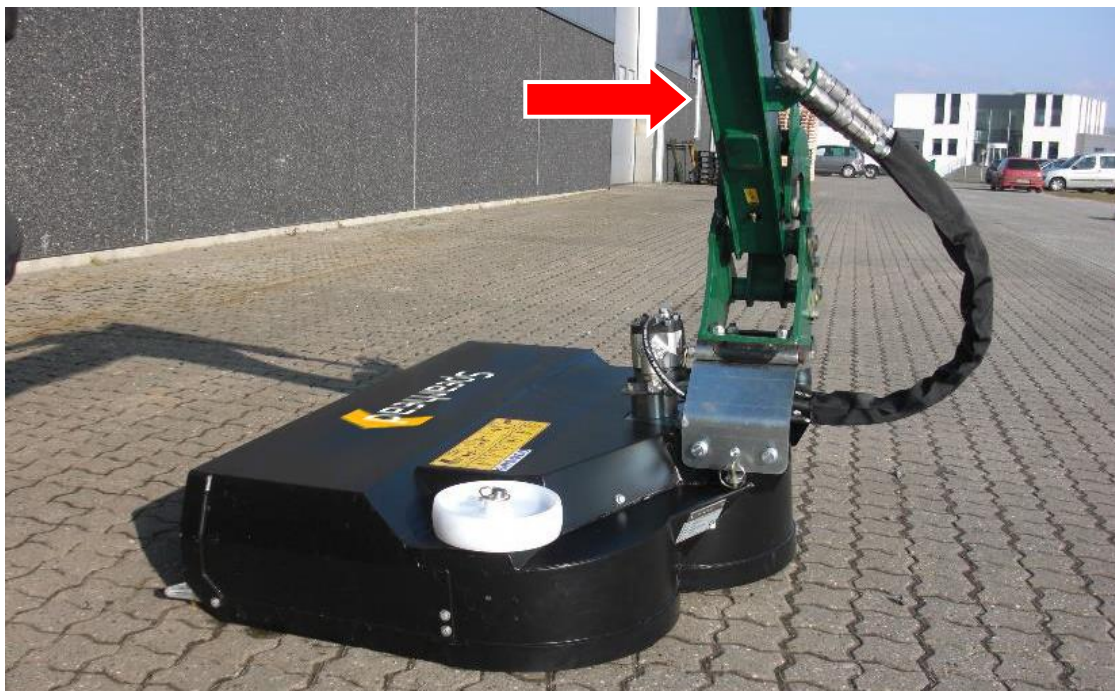


The tool must never be operated without the rubber curtain.

# Spearhead RC 132/162



**Photo 1:** Slowly drive forward and adapt the angle to the RC rotary head. Connect the armsystem and the head.



**Photo 2:** After connecting the RC rotary head to the reach arm the hydraulic hoses can then be attached. Pay close attention to the correct attachment!



Slowly raise the machine. Let it run for 5 minutes, stop the machine and inspect all connections for leakage. Dismounting the RC rotary head is done in reverse order.



# Spearhead RC 132/162

## HOSE CONNECTIONS

The following hose connections are as followed:

### DRAIN – Smallest Hose (Marked Blue)

- Connected to a depressurized (0 bar) tank connection.
- THIS MUST **NEVER BE CONNECTED TO RETURN**



### PRESSURE – Medium Sized Hose (Marked Red)

- Connected to Pressure (P), with a maximum of 200 bar.

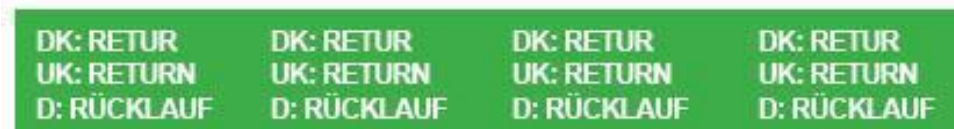


### RETURN – Largest Sized Hose (Marked Green)

- Connected to Tank (T), with a maximum back pressure of 15 bar.



All machines supplied by Spearhead have hose connections with the following stickers:

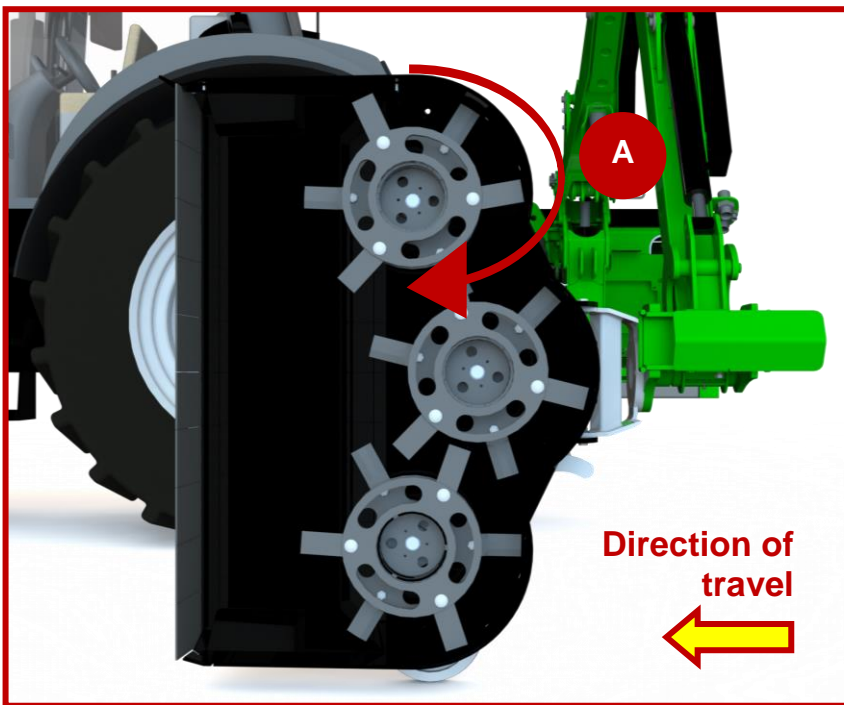


# Spearhead RC 132/162

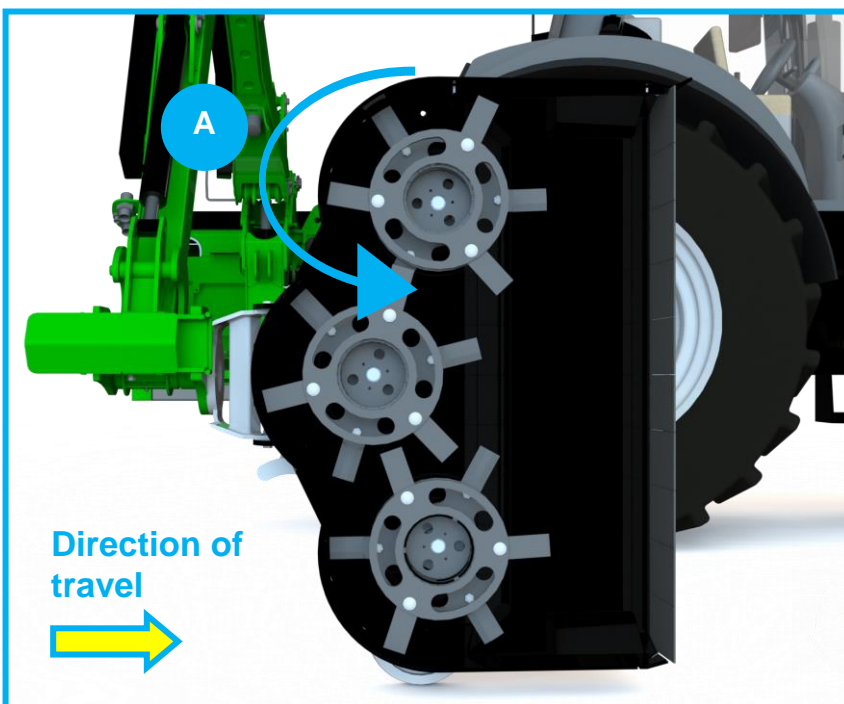
## BLADE CUTTING DIRECTION

Depending on whether your reach arm machine is Left hand (LH) or Right hand (RH) build influences:

- a) The rotational direction of the blades
- b) The location of the guide wheel



**LH Mounted Machines**



**RH Mounted Machines**

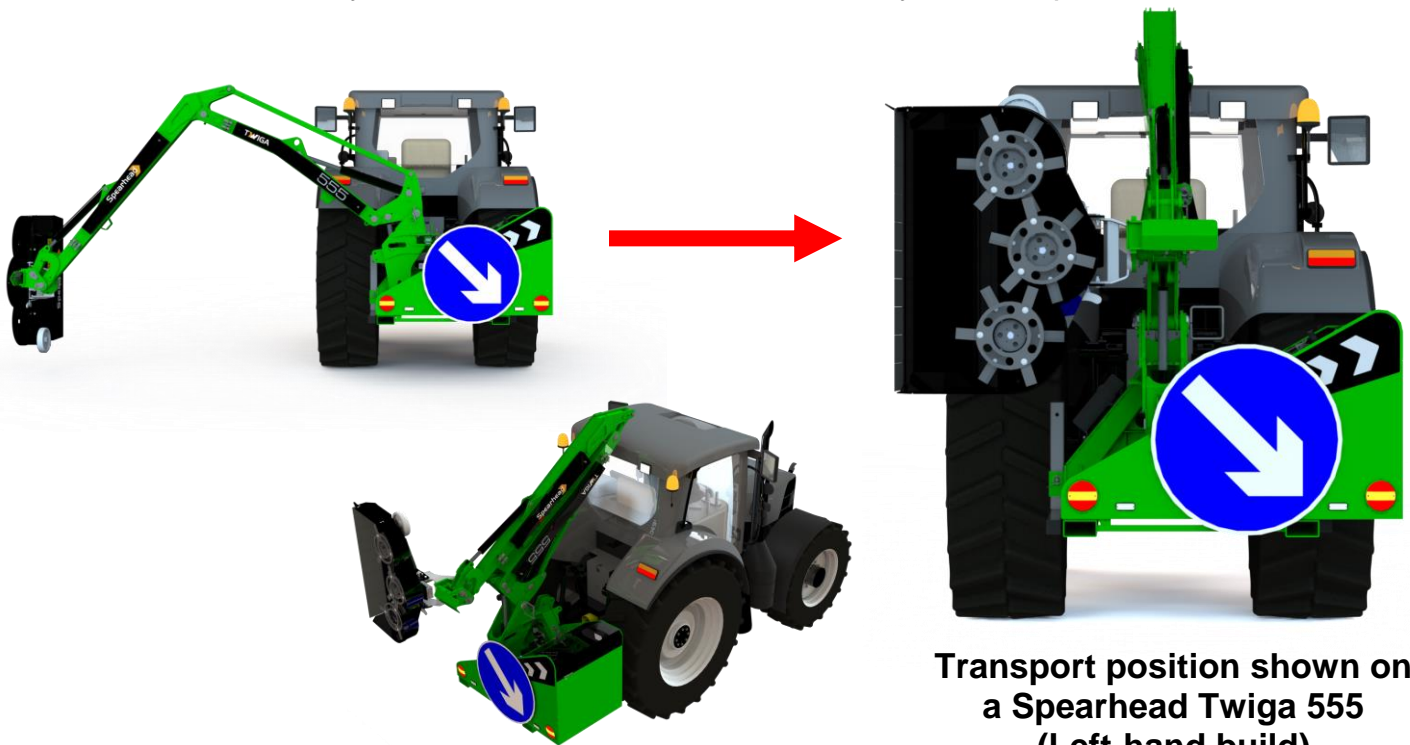




# Spearhead RC 132/162

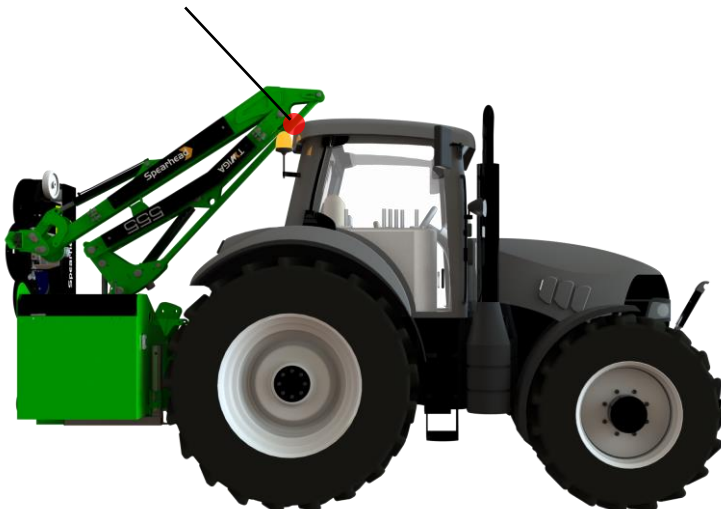
## TRANSPORTING THE RC ROTARY HEADS

- After finishing work, the arm with the attached RC rotary head is to be pulled close to the vehicle.
- The RC rotary head needs to be positioned where it takes up the least room.
- The inner arm is lifted until the transportation stop is met or close to the vehicle.
- Transport safety locked is mounted (if supplied).
- For Spearhead machines with slewing ability the reach arm should be slewed behind the tractor. Be mindful, if the reach arm is lifted to the transportation stop that it doesn't hit the cab of the vehicle or will hit the cab during transportation.
- The RC rotary head and reach arm are now ready for transportation.



Transport position shown on a Spearhead Twiga 555 (Left-hand build)

**BEWARE** of the reach arm clashing with vehicle when the reach arm is slewed.

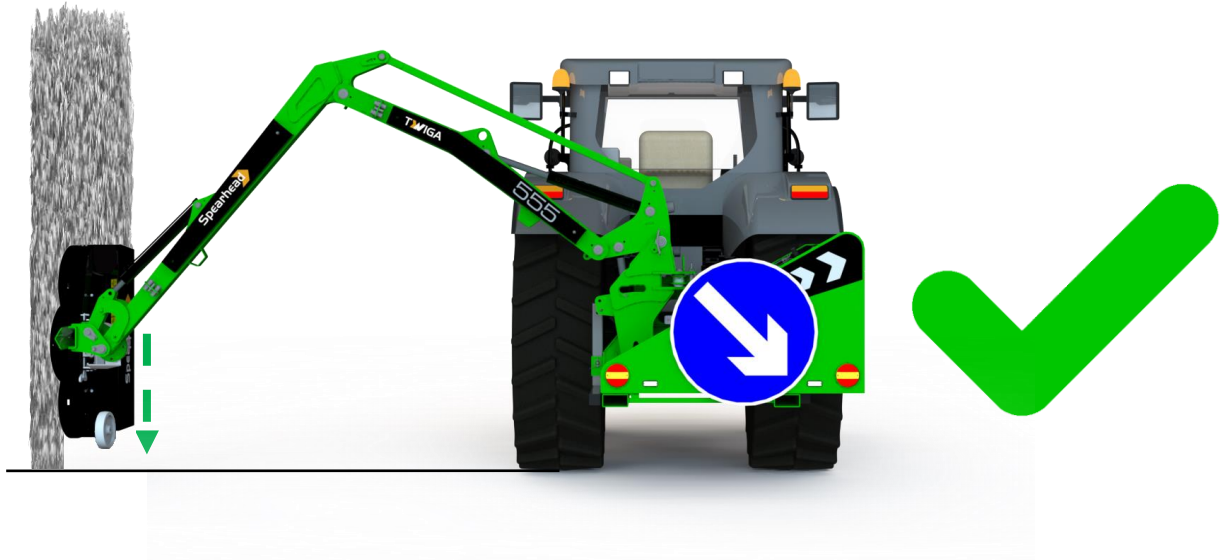


Transport position shown on a Spearhead Twiga 320 (Right-hand build)

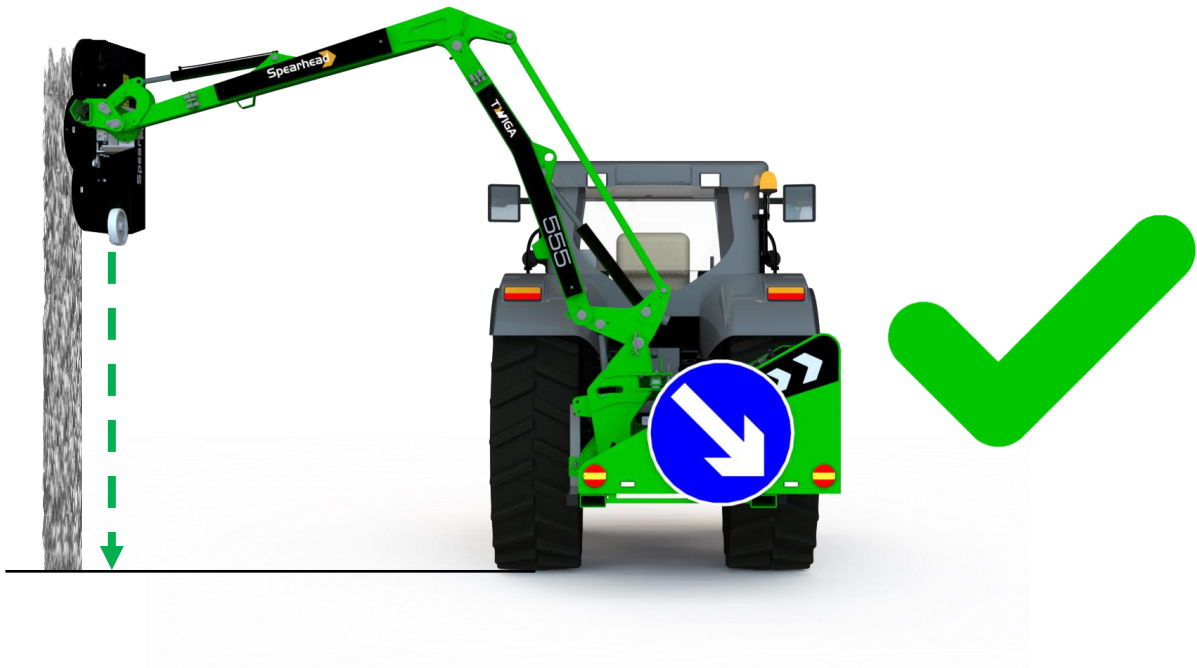
# Spearhead RC 132/162

## WORK POSITION WITH RC ROTARY HEADS

1. Turn the arm into work position
2. Adjust the cutting angle for the first cut. Always start from the bottom vertically or in a suitable angle. Choose the most suitable forward drive depending on the condition of the hedge, surface, traffic and visibility.

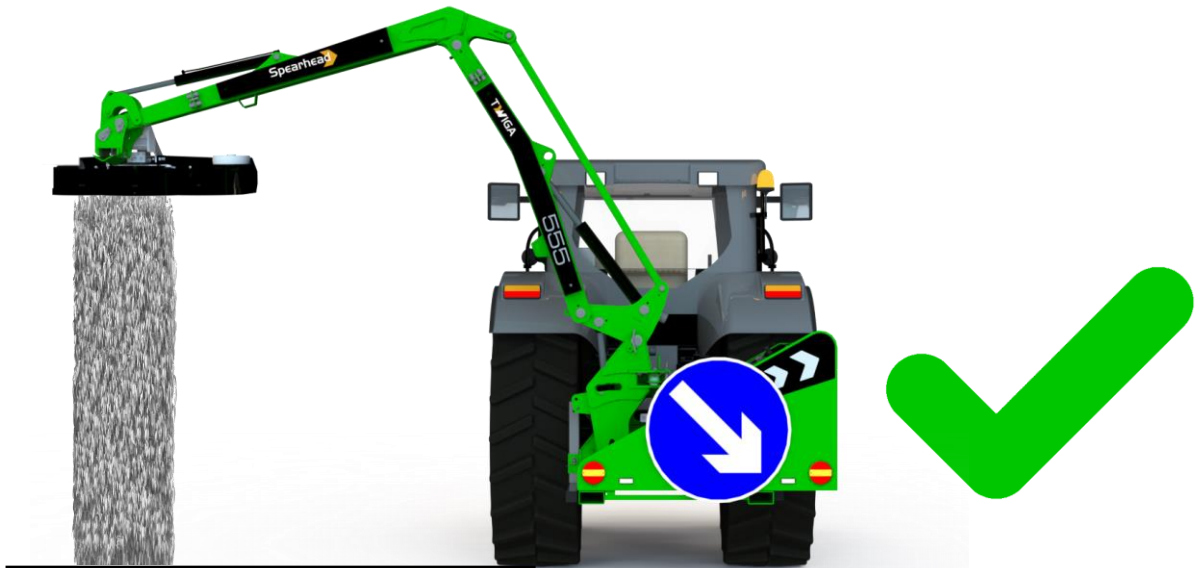


3. Adjust the angle for the second cut. Keep the same angle as for the first cut.

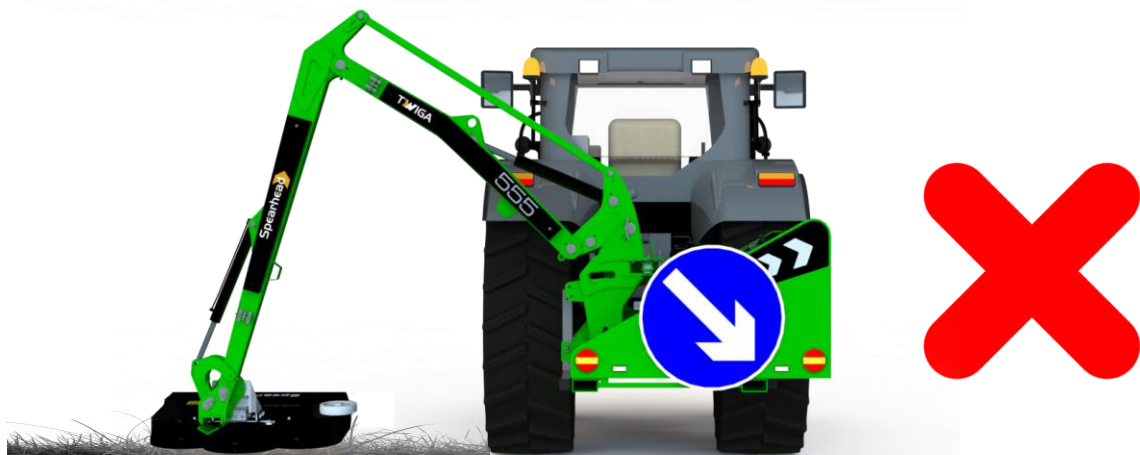


# Spearhead RC 132/162

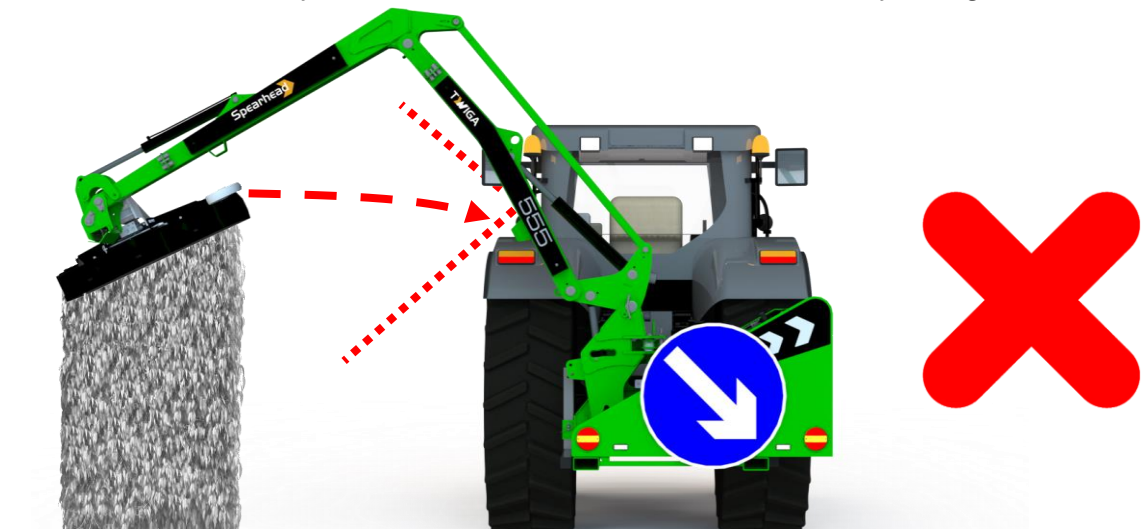
4. If needed finish off with a horizontal cut. If the hedge is wider than the rotary head you get the best result by starting the cut close to the vehicle.



5. RC Rotary Heads are **NOT** constructed for lawn mowing.



6. **NEVER** turn the rotary head towards the tractor. This is very dangerous.



# Spearhead RC 132/162

## FIELD OF APPLICATION

### Intended Use:

The Spearhead RC Rotary Heads are intended for use of hedges and smaller branches and trees.

Branches **must not** exceed 30mm

diameter (for the RC132) and 40mm diameter (for the RC162). This is to avoid fraying.

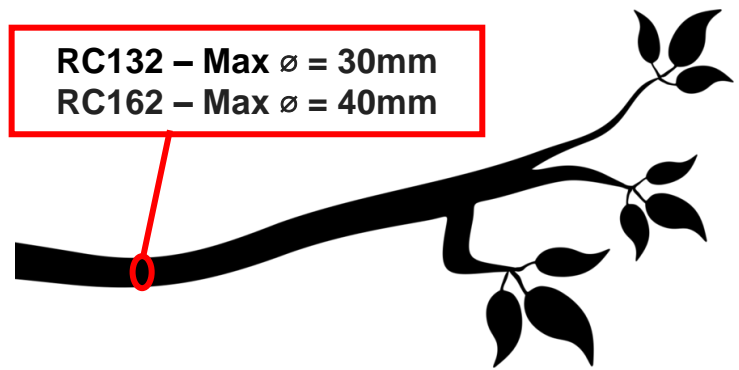
Starting and stopping the tool must always be done at the lowest rpm or lowest oil flow. The saw and the hedge cutter are solely built for use in landscaping or the like. Vertical cuts are not allowed at an angle of no more than  $-15^{\circ}$ . Horizontal cuts are possible on hedges no more than 12cm wide and with branches with a thickness up to 30mm (RC132) and 40mm (RC162). Larger branches will stop the tool.

It is recommended that the forward speed is kept at a minimum when starting the work to achieve the correct work speed for the rotary head. Adjust the angle of the cutter so that it is straight and adjust the position to make the blades cut directly at the branches. Where possible, the blades have to cut vertical in the direction of travel. This prevents the blades from bending during work.

If smaller branches and other unwanted material get stuck, **the machine and vehicle must be stopped** and the ignition key removed before attempting to clean the blades.

Under no circumstances is the machine to be used to cut down trees. The machine also never be used as a stationary sawmill or the like. The machine must not be used for sharpening poles. The machine must be only used for cutting wood material.

**Any other use than the one described is against the intended use. Spearhead Machinery is not liable for damages as a result of this**; the risk lies solely on the user.



### WARNING

Never use the machine without fitting the belt cover.



### WARNING

Extreme caution must be shown when blades, rotors and/or drive belt are cleaned; these areas have a lot of sharp edges. Always wear work gloves and safety glasses, and if possible, always use a tool to remove unwanted material to avoid direct finger or hand contact.





# Spearhead RC 132/162

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**DANGER**



**Never use the machine for cutting grass.**

**WARNING**



**Never use the machine with defective blades, bushes or bolts. If a rubber cover is defective it must be changed immediately.**

**DANGER**



**Never use the machine for anything else than described in this manual.**

**DANGER**



**Never use the machine as a crane or lift.**

## **Inadmissible Working:**

The operational reliability of the delivered machine can only be guaranteed if it is used according to the intended use as described in this manual. The limit value stated in the data sheets must under no circumstances be exceeded.

The machine is not suited for cutting grass. The machine must never be used for cutting the “back side” of a hedge, so that the rotating blades are facing the user.

## **When responsible for the machine always follow the rules below:**

- Always inspect the work area before starting work and remove potentially dangerous material.
- Never use the machine close to persons or animals. Read the section “Safety Distances”.
- Make sure that all cab covers are secured and that the windows remain closed during work. If the vehicle has no cab, always wear safety glasses and earmuffs.
- Only use the machine with the correct speed of the blades.
- Never approach the machine when it is running, always shut the engine off and stop the vehicle.
- Always remove the ignition key when leaving the driver’s seat.
- Only use the machine for the intended purpose. The machine is solely constructed for hedge cutting. It must never be used for grass cutting or the like.
- Lower the machine and set it in a horizontal position, so that there is no access to the blades when parked or not in use.

# Spearhead RC 132/162

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## DRIVING DIRECTIONS FOR HEDGE CUTTING:

Always start and stop the tool at the lowest PTO RPM/Oil Flow

Choose a suitable forward drive depending on the hedge, surface, traffic and visibility.

We recommend that you start driving slowly, allowing the blades to reach the recommended speed. Adjust the cutting angle to be approximately 90° against the branches. If reaching a larger branch, adjust the cutting height to meet the branch “straight on”, lower the speed to a minimum and “plane” off the branch.

If smaller twigs or unwanted material get stuck between the blades, stop the machine and remove it.

Where possible, the blades have to cut vertical in the direction of travel. This prevents the blades from bending during work.

### NOTICE



It can be an advantage to use the “Branch Guide” (optional equipment) at the bottom of the rotary head to lift smaller twigs closer to the blades. Caution must be taken when working close to the ground.

### NOTICE



Smaller adjustments of the cutting angle can be done when driving but it is recommended to stop working when making larger adjustments.

### DANGER



To prevent the blades from blocking, the lower ones are mounted to freely swing at a 360° angle. The upper ones at 110°. A non-return valve is mounted on the hydraulic system to slow down the blades faster. If the blades block despite this, stop the cutter, stop the vehicle, remove ignition key, engage the handbrake, use safety glasses and work gloves and remove the unwanted stuck material.

### NOTICE



When the sap disappears from branches the end result will become more “frayed”. When operating off growth seasons the blades will wear out faster.

# Spearhead RC 132/162

## SAFETY DISTANCES HORIZONTALLY:

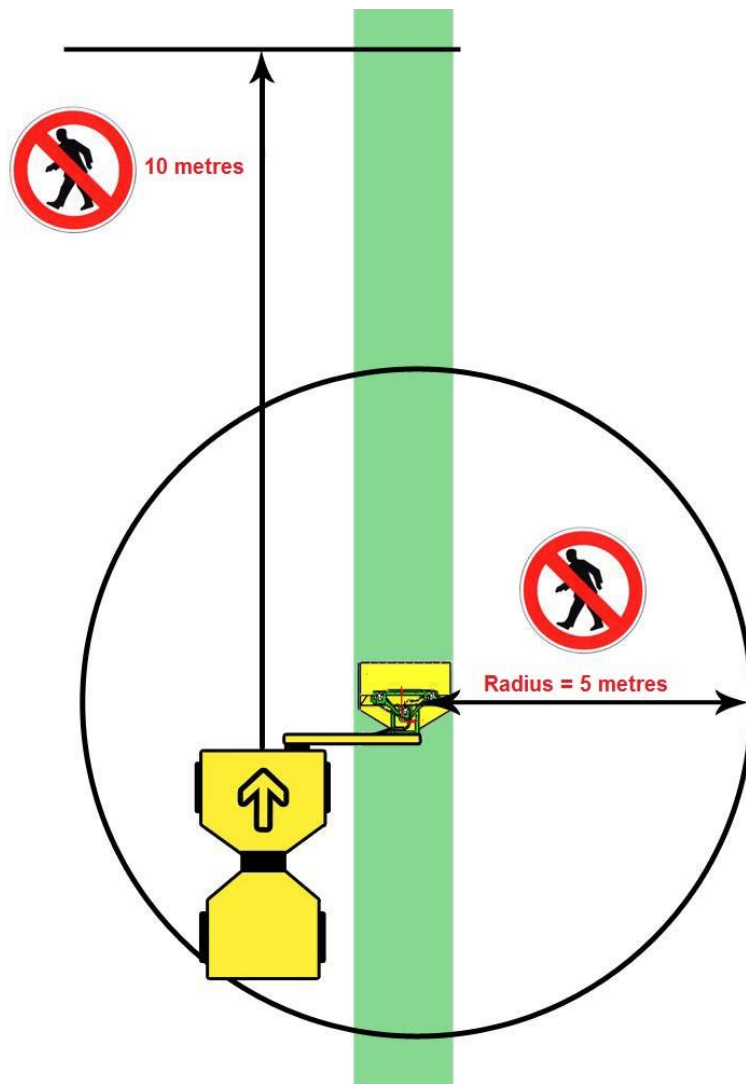


Illustration 1: Safety zone at 1 metre cutting height horizontally

Cutting Height Horizontally	Safety Radius	Safety Distance From The Front
0 – 1m	5 m	10 m
1.1 – 1.2 m	6 m	11 m
1.2 – 1.3 m	7 m	12 m
1.3 – 1.4 m	8 m	13 m
1.4 – 1.5 m	9 m	14 m
> 1.5 m	10 m	15 m

# Spearhead RC 132/162

## SAFETY DISTANCES VERTICALLY:

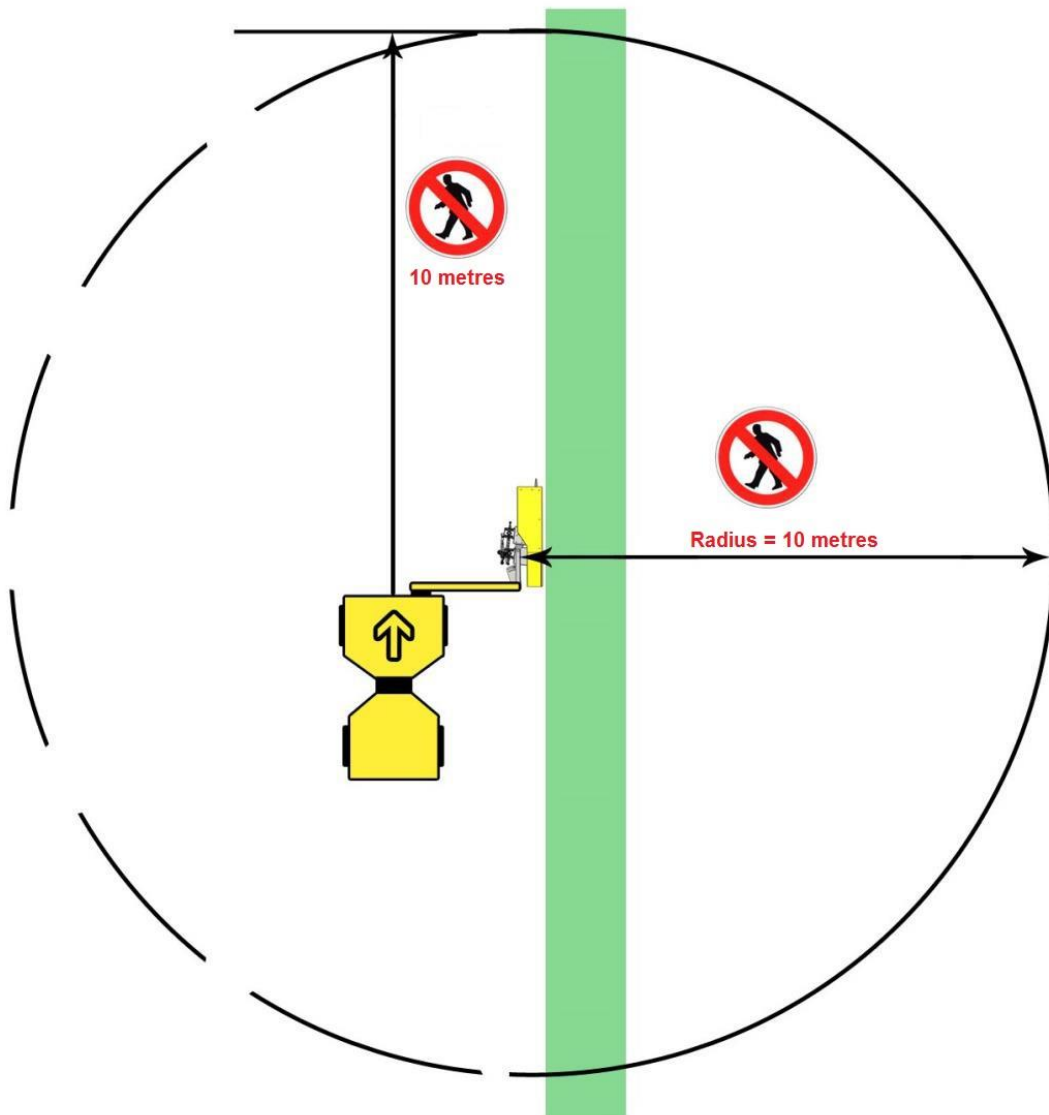


Illustration 2: Safety zone at 1 metre cutting height vertically

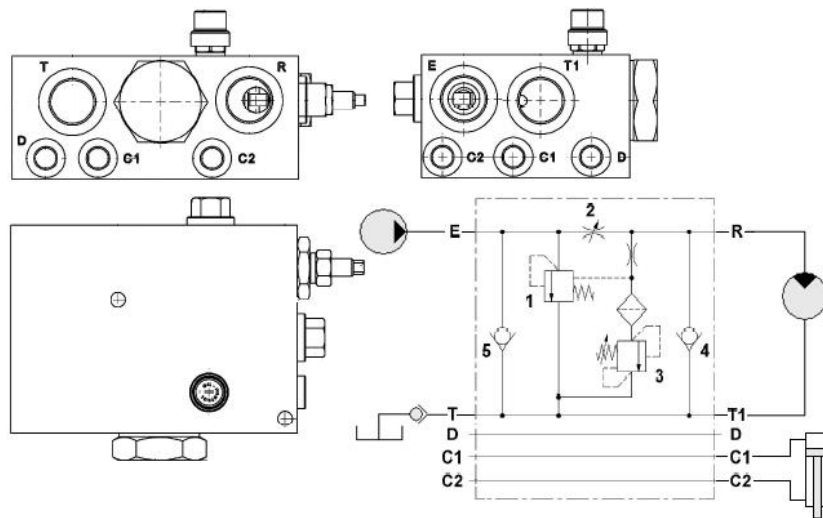
Cutting Height Vertically	Safety Radius	Safety Distance From The Front
0 – 1m	5 m	10 m
1.1 – 1.2 m	6 m	11 m
1.2 – 1.3 m	7 m	12 m
1.3 – 1.4 m	8 m	13 m
1.4 – 1.5 m	9 m	14 m
> 1.5 m	10 m	15 m



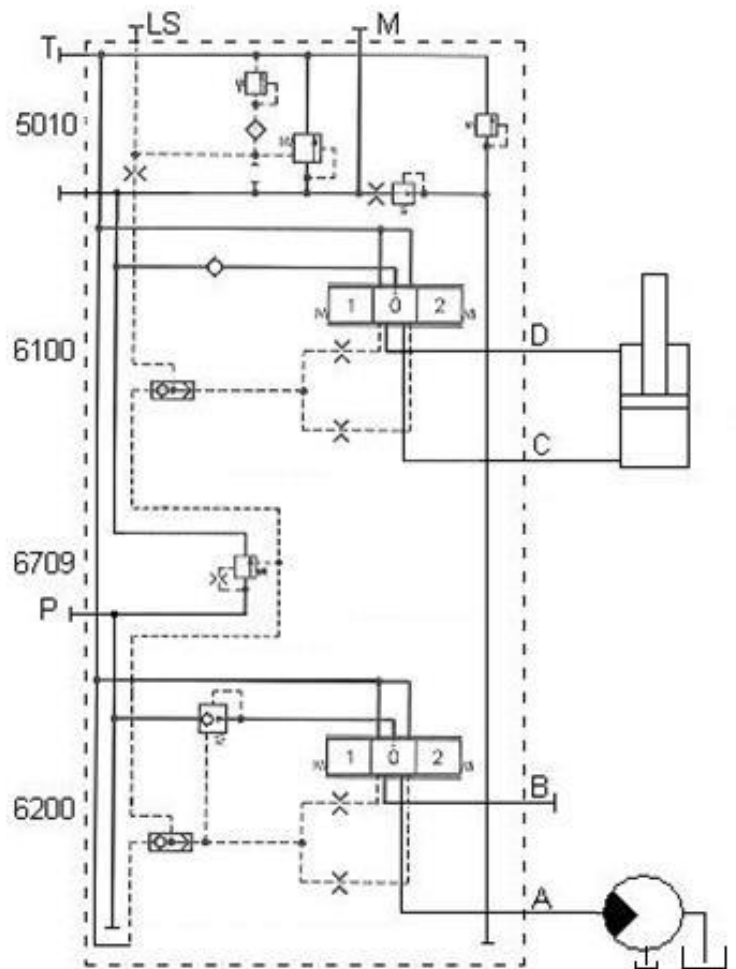
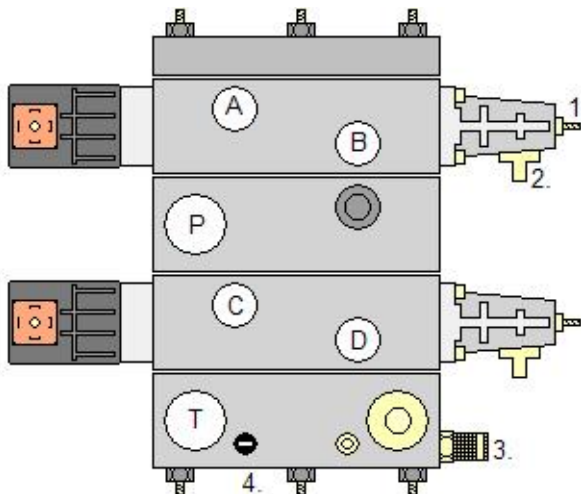
# Spearhead RC 132/162

## DIAGRAMS

### Standard Splitter Valve:



### Danfoss Splitter Valve Diagram:



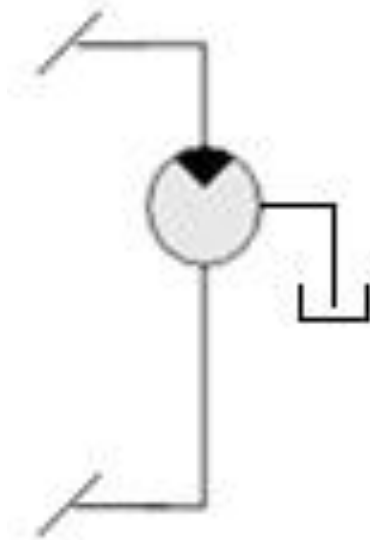
1. Flow Adjustment
2. Manual Over-steering
3. Manometer Power Point (mini-mesh)
4. Safety Valve (200 bar)

- A. Flow To Tool (regulated)
- B. Not In Use
- C. Cutting Angle
- D. Cutting Angle
- P. Pressure, Flow From Pump
- T. Tank Connection, Depressurized + T From Engine

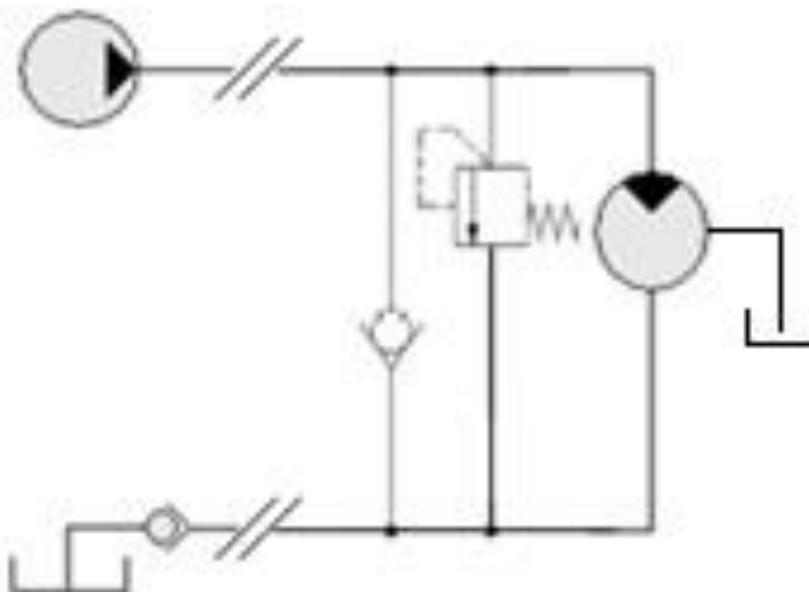
# Spearhead RC 132/162

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Hydraulics Diagram RC 132:



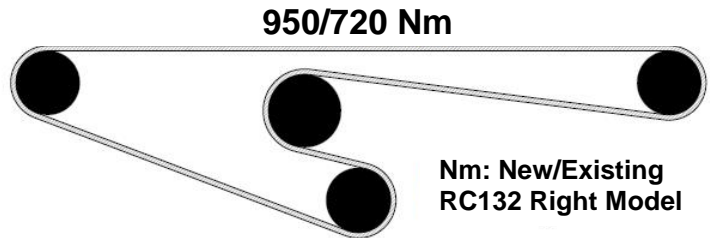
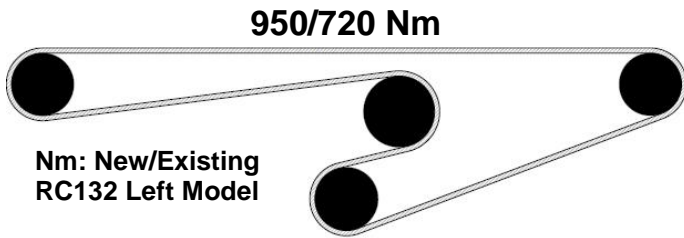
Hydraulic Diagram For Correct Fitting:



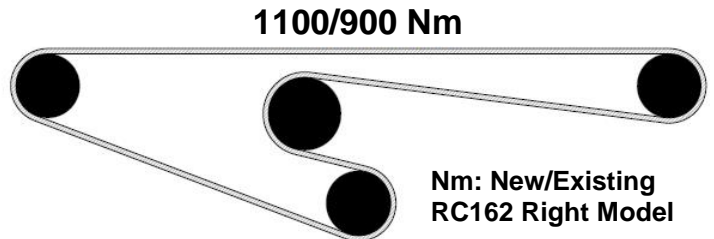
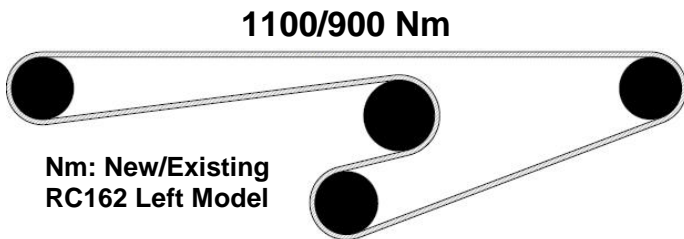
# Spearhead RC 132/162

## Belt Diagrams:

### RC132



### RC162



# Spearhead RC 132/162

## HOSE CONNECTIONS

The following hose connections are as followed:

### DRAIN – Smallest Hose (Marked Blue)

- Connected to a depressurized (0 bar) tank connection.
- THIS MUST **NEVER BE CONNECTED TO RETURN**



### PRESSURE – Medium Sized Hose (Marked Red)

- Connected to Pressure (P), with a maximum of 200 bar.

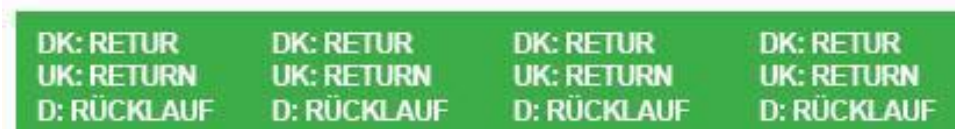


### RETURN – Largest Sized Hose (Marked Green)

- Connected to Tank (T), with a maximum back pressure of 15 bar.



All machines supplied by Spearhead have hose connections with the following stickers:



## MAINTENANCE

The rotary head must only be used, maintained and serviced by authorized and educated personnel. Area of responsibility, qualifications and supervision of personnel must be carefully regulated by the head of operations. If personnel do not meet these terms they must be trained and instructed.

Head of operations must also make sure that the content of the manual is understood and implemented.

Maintenance procedures not mentioned in this manual must only be carried out by authorized repair shops.

Bypassing the safety advice in this manual may result in endangering persons, the environment and/or the tool.

**Bypassing the safety advice may result in all compensations claim being repealed.**

To be exact bypassing the safety advice may result in:

- Endangering persons at non-secured work areas!
- Malfunction of important machine functions!
- Malfunction of prescribed methods for maintenance and service!
- Endangering persons following mechanical or chemical impact!
- Endangering the environment following a hydraulic oil leak!

Only carry out service with machine shut off. The procedure for stopping the machine as described in Spearhead's manual must be followed.

When carrying out maintenance on a lifted head and/or machine, secure with suitable support elements.

When changing heads with blades, always check the hydraulic system for remaining pressure. If present reduce to zero.

Only use suitable tools and wear work gloves, safety shoes and safety glasses.

Dispose of oil and grease according to regulations.

Directly after finishing work, all safety and protection mechanisms must be remounted and reactivated.

# Spearhead RC 132/162

## ROUTINE MAINTENANCE SCHEDULE

### Regular Maintenance

Regular maintenance carried out at the intervals specified in the maintenance chart below will ensure that the machine operates correctly and safely and minimise operational down time. See the following page for maintenance safety before attempting to work on the machine.

### After 1 hour of Use (New Machine)

- Check all gearbox mounting bolts for tightness – tighten if required.
- Check mounting bolts on blade carrier(s) – tighten if required.
- Check headstock mounting bolts for tightness – tighten if required.

### After 10 hours of Use (New Machine)

- Check gearbox oil level(s) – top up if required.
- Check blades for damage.
- Check blade bushes for wear.
- Check headstock mounting bolts for tightness – tighten if required.

MACHINE COMPONENT	MAINTENANCE INTERVAL			
	Weekly	Fortnightly	Monthly	Annually
<b>Motor</b>				
Check mounting bolts – tighten if required	✓			✓
Check oil level – top up if required		✓		✓
Replace oil – drain and refill				✓
<b>Blade Carriers (Inner and Outer)</b>				
Check mounting bolts – tighten if required	✓			✓
<b>Blades</b>				
Check for damage or wear	✓			✓
Check bushes for wear			✓	✓
<b>Fasteners</b>				
Check tightness and condition of fasteners and fittings			✓	✓

## BELT TENSION CONTROL

### WARNING



Always exercise great caution when servicing the machine, as there is a potential risk of wedged in fingers and hands between drive belt, pulleys and blades.

It is very important that the belt is mounted correctly and tightened. After mounting a new belt it must be tightened to the correct tension. 950 Nm (for RC132) or 1100 Nm (for RC162). After 3-5 hours of operation the belt has given in and must be checked again.

### CAUTION



The tension may now have changed now they've been used. They must be tensioned now to:

- RC132 – 720 Nm
- RC162 – 900 Nm

### Recommended Tools:

- Belt Measurer “Optikrik II”
- 1 pc. 13mm Ring/Fork Spanner
- 2 pc. 19mm Ring/Fork Spanner
- Work Gloves
- Safety Shoes

### Procedure:

- Loosen the two caps bolts and raise the cap.
- Check the Nm belt setting with Belt measurer “Optikrik II” 200155.0
- Adjust the belt if necessary.
- Turn the rotors a couple of times and recheck with the belt tensioner.
- Close the cap and retighten the two bolts.



# Spearhead RC 132/162

## BELT TENSION CONTROL



Loosen the two bolts



Raise the cap



Loosen counter nut and adjust belts



Check belt tension at the middle of the belt with belt measurer 200155.0

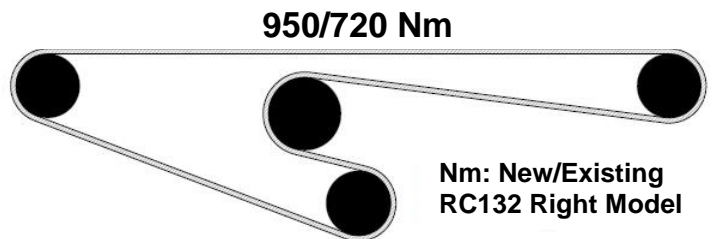
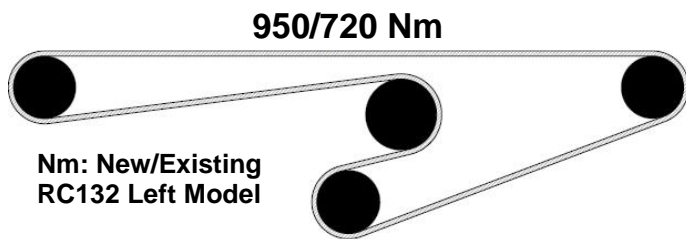
If you have any questions please contact the Spearhead Service Department and we will help out with advice and supply the correct measuring tool.



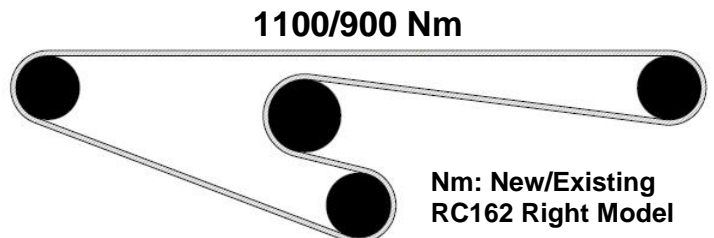
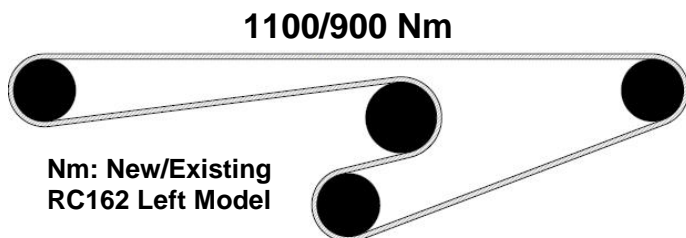
# Spearhead RC 132/162

## BELT DIAGRAMS

### RC132



### RC162



### Tool For Checking Belt Tension

OPTIKRIK II  
Part No: 200155.0

# Spearhead RC 132/162

## LUBRICATION

Grease the lubrication points on machine on the following basis:

- Daily prior to use.
- Always prior to storage.
- Always after it has been washed.

### NOTICE



**Never use grease that contains Molybdenum Disulfide on Nylon bushes.**

## Hydraulic Hoses:

### CAUTION



**Carefully check the condition of all hoses during routine service paying particular attention to chafed outer casing.**

### NOTICE



**Daily inspect all hydraulic hoses and fittings to be in good order. Any damages or leaks must be rectified immediately; this is part of the daily maintenance and is your responsibility to ensure a long reliable working life.**

### DANGER




**Spearhead's hydraulic system works at very high pressure. When replacing hoses use only genuine hoses. A burst hose could be very dangerous!**

### NOTICE



**When replacing hoses avoid twisting fitting, use two spanners to slacken and tighten.**

	<p><b>Warning!</b></p> <p>Hoses are weakened when installed in a twisted position. Also, pressure pulses in a twisted hose tend to fatigue wire and loosen fitting connections. Aim so that the machine produces bending rather than torsion.</p>
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# Spearhead RC 132/162

Torque Settings For Hose Connector		
BSP Size	Torque Setting	
1/4"	24 Nm	18 lbs/ft
3/8"	33 Nm	24 lbs/ft
1/2"	44 Nm	35 lbs/ft
3/4"	84 Nm	62 lbs/ft
1"	115 Nm	85 lbs/ft

Torque Settings For Bushings		
BSP Size	Torque Setting	
1/4"	34 Nm	25 lbs/ft
3/8"	75 Nm	55 lbs/ft
1/2"	102 Nm	75 lbs/ft
3/4"	183 Nm	135 lbs/ft
1"	203 Nm	150 lbs/ft

Check daily for all hydraulic connections and fittings to see they are in good condition. Any defect or leak must be immediately repaired, it is part of the daily maintenance that will reduce costs and prolong machine life.

If fittings require tightening use 2 spanners and avoid overtightening. If the fitting continues to leak; replace it.

## Please Read The Following Advice Carefully!

### NOTICE



Always check the black protective sleeve is in good order. To replace the sleeve is far cheaper than replacing expensive hoses.

Hose warranty is limited to the replacement of hoses due to faulty materials or manufacture. Warranty will not be considered on: hoses damaged by chafing, abrasion, cuts or pinching while in work, or to damaged threads due to overtightening.

## Oil Supply:

- Daily, check the oil level in tank reservoir before starting up.
- It is good practice to constantly keep an eye on the tank level gauge, (this can be seen from the tractor seat) as a pipe burst could empty the tank within minutes.
- A pump or motor starved of oil will be damaged beyond repair.
- Replace oil if signs of contamination occur (discolouration).
- Use the correct and suitable hydraulic oil
- Contamination can be reduced by:
  - *Thoroughly cleaning around reservoir cap before removing*
  - *Using a clean container when replenishing the system*
  - *Regularly servicing the filtration system*
  - *Never allowing the oil level to fall below the sight gauge*

# Spearhead RC 132/162

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## Regular Maintenance Tasks On Lubrication System

- Daily inspect all hydraulic connections and fittings to be in good working order. Any damage or leaks must be rectified immediately; this is part of daily maintenance and it is your responsibility to maintain a long, reliable working life.
- When tightening fittings always use two spanners when necessary and do not over tighten. If a fitting leaks it will need to be replaced.



### **WARNING!**

The recommended oil flow has been informed by the manufacturer. Never exceed this.

## Lubricating Oil Precautions

Avoid excessive skin contact with used oil. Used oil contains potentially harmful contaminants which may cause skin cancer or other serious skin disorders. Avoid excessive skin contact with used lubricating oils and always adhere to the health protection precautions.

- Avoid prolonged and repeated contact with oils, particularly used engine oils.
- Wear protective clothing, including impervious gloves where practicable.
- Avoid contaminating clothes with oil (particularly those next to the skin). Overalls must be cleaned regularly. Discard heavily soiled clothing or oil impregnated footwear.
- First aid treatment should be obtained immediately for open cuts and wound
- Apply barrier creams before each work period, to help lubricating oil from contaminating the skin.
- Use moisturisers after cleaning; preparations containing lanolin help replace the skin's natural oils which have been removed.
- If skin disorders develop, obtain medical advice without delay.
- Wear eye protection (e.g. goggles or a face shield) if there is risk of eye contamination. Eye wash facilities should be provided in close vicinity of the work area.

# Spearhead RC 132/162

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## PUMP AND MOTOR FAILURE:

There can be many reasons for pump and motor failure, cavitation, too high pressure and pollution.

### Precautions to prevent a change of motor failure:

- Never run out of oil.
- Never let a cold reach arm machine run up in speed too quickly. The reach arms gearbox and oil must warm up by running at idle before the rotary head can be connected or disconnected and put into working use.
- The speed of the vehicle engine must never be increased or decreased too fast.
- Suction hose and pump fittings must be checked and tightened on a regular basis.
- Never start or stop the rotor at maximum RPM.
- Avoid sudden arm movements via the joystick and due to irregularities on the ground, as changes in pressure are directed back to the pump and may result in malfunction.
- Avoid letting the rotor hit an object such as a rock, as this will cause pressure changes.
- Never transport the machine with the engine running.
- Never choose a higher PTO RPM/oil flow than recommended.
- Never work with more than the recommended PTO speed/oil flow – this will result in overheating.

**NOTE:** The engine guarantee is limited to replacement due to defective material or manufacturing. Cavitation, pollution and too high pressure can easily be detected by examination. The guarantee will also be void if the defect is due to misuse.

### Maintenance Chart:

Service Hours	Service Points	Control
After 3-5 hours, subsequently daily	All bolts are tightened	X
	Blade bolts are tightened (95 Nm)	X
	Check for leakage from fittings and hoses	X
	Bolts and bushes	X
	Check belt tension (720 Nm – for RC132. 900 Nm – for RC162).	X

# Spearhead RC 132/162

## BLADES:

**ATTENTION!** When carrying out any kind of service on or around the rotors always pay attention to the swinging blades. Always wear safety gear, including helmet, work gloves and safety glasses.

It is possible to sharpen the blades by sharpening the cutting edges, ensuring that the blades after sharpening are the same length and weight. Be careful not to let the blades get too hot during sharpening as this will affect the temper. All blades are required to swing freely and rotate around hardened steel bushes that are replaceable. When changing the blades it is important to always change them by the pair to maintain the balance of the rotor. Bushes must always be changed when mounting new blades.

If the blades show signs of severe wear, damage or cracks then they must be replaced immediately. Never attempt to weld the blades as this will leave them brittle and extremely dangerous. Never take a risk with the blades – if in doubt, replace them.



When the sap disappears from the branches the end result will become more “frayed”. When operating off growth season the blades will wear out faster. The best result is gained between April and October.

## Changing Blades:

### Recommended Tools:

- Spearhead Special Tool (fixed to the RC 132/162)
- 19mm Ring/Fork Spanner
- Work Gloves
- Safety Shoes

### Procedure:

- Remove the ring pin from the Spearhead Special Tool and pull the tool out.
- Attach it in the rotor in the “banana-shaped” hole through the slot in the chassis.
- Now loosen the blade bolt with the ring/fork spanner.
- Mount the new blade, bush, bolt and lock nut.

The nut is to be tightened to 95 Nm.



Spearhead Special Tool



Special tool mounted.  
Loosen blade bolts.



## BUSHINGS AND BEARINGS:

Several main turning points have replaceable bushings or bearings. If these show signs of wear and tear, then they must be replaced. All bushes, bolts and bearings can be supplied from Spearhead's Spare Parts Department.



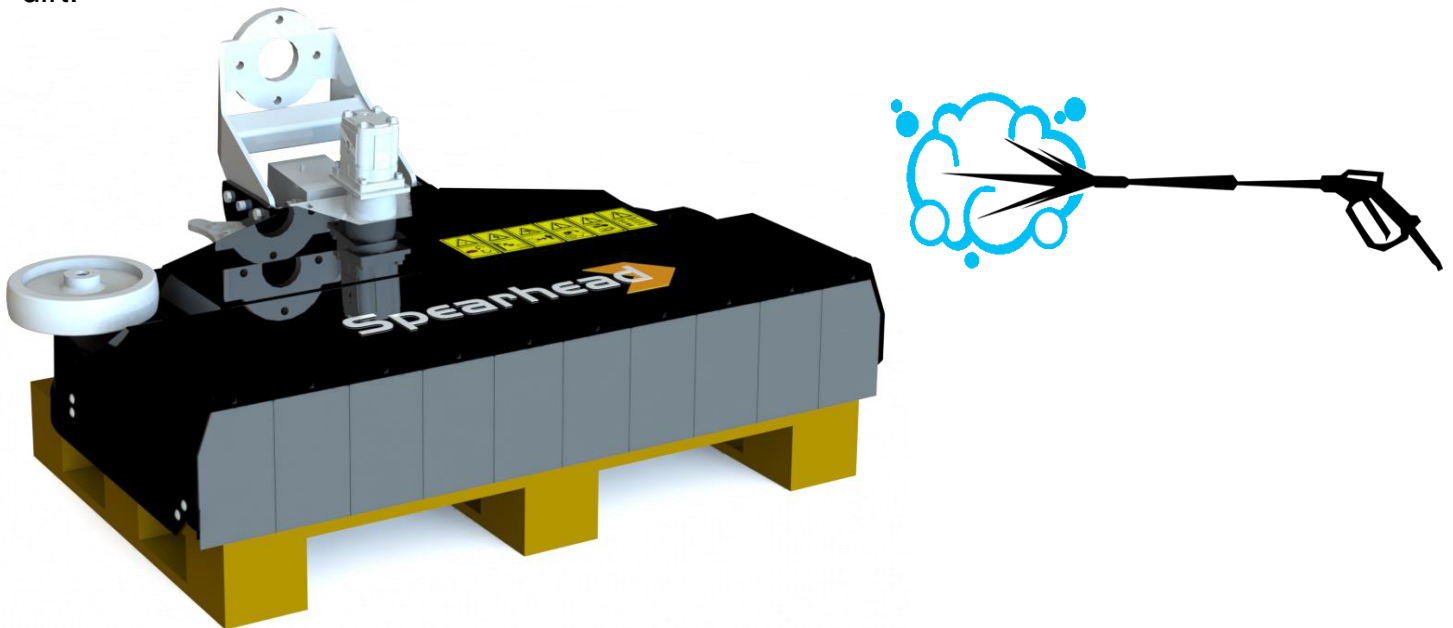
### **WARNING!**

Bushes **MUST** be replaced if they have cracks or show signs of wear and tear. **NEVER** compromise when it comes to safety. When replacing blades; also change the bushes, blade bolts and nuts.

# Spearhead RC 132/162

## STORAGE

Before storage always wash the machine carefully. Remove all traces of grass and dirt.



### CAUTION



Be careful and never use a high pressure cleaner close to the lacquer. Steam cleaning must be done with caution. Remove all traces of detergents to avoid discolouration or damage to the lacquer. It is important to store the machine covered from rain or sunlight. The machine must be placed horizontally on a level surface or pallet.

### CAUTION



Make sure that the machine is unable to tip or fall down when stored. Find a suitable storage place and support the machine.

### NOTICE



Never leave hydraulic hoses on the floor. They pose a risk of stumbling. Place all hoses on the machine or rotary head.

### NOTICE



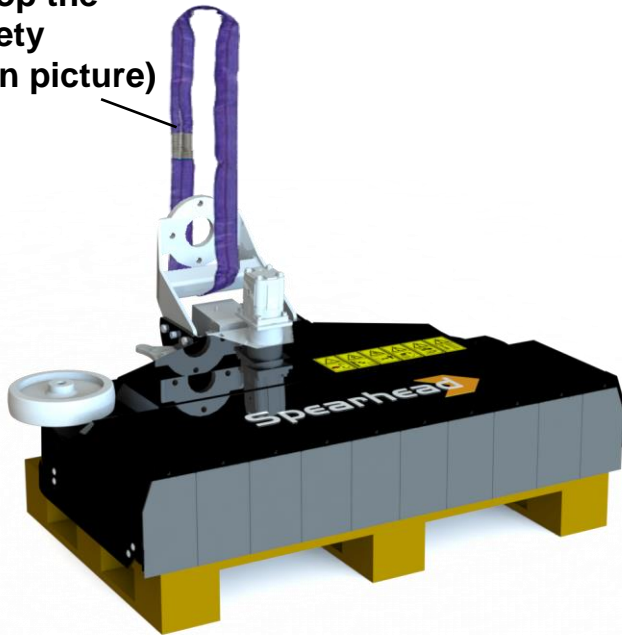
Always store the machine in cleaned condition. Dirt attracts moisture and this may result in increased corrosion. Damage to lacquer must be repaired.

# Spearhead RC 132/162

## CORRECT LIFTING OF THE RC ROTARY HEAD

Spearhead recommends that the RC Rotary Head is stored on a suitable pallet when not in use. If it needs to be moved use a pallet lifter or forklift. Alternatively it can be lifted with an authorized rope or something similar. The RC132 weighs 110kg and the RC162 weighs 150kg. The rope must be authorized for the required weights as a minimum, but preferably more for greater safety.

Twist and loop the strap for safety (not shown in picture)



### After Storage:

Follow the recommended maintenance advice given in this manual. Pay particular attention to the condition of the blades and belts.

Remember that the RC Rotary Head (all models) is constructed to resist even the toughest conditions and that with some care and attention it will supply you with many years of problem-free service. To avoid problems and ensure that it is covered by the guarantee, always use original spare parts and make sure that the machine is not used for anything else than described in this manual.



### WARNING!

Before attempting to repair, maintain or adjust the machine, always make sure that the tool has stopped, the ignition key is removed, hydraulics disconnected, hand brake secured and the tool is safe on the ground.



### REMEMBER:

Regular maintenance will increase the lifespan and the resale price of the machine.

## NOISE MEASURING

Noise measuring has been made on the machine during normal working conditions with a Delta OHM noise measurer, type HD 8701.

The energy A-weighted sound pressure is lower than: **83 dB (A)**.

The test has been done at a distance of 1 metre from the machines critical noise maker and at a height of 1.5m above the ground.

## SUPPLIER INFORMATION & CE DECLARATION

### Supplier Information:

Company Name: Spearhead Machinery Limited  
Address: Green View, Salford Priors, Evesham, Worcestershire  
Postcode: WR11 8SW  
Telephone: +44 (0)1789 491860  
Email: enquiries@spearheadmachinery.com

### CE Declaration:

Contact: Spearhead Machinery Limited  
Telephone: +44 (0)1789 491860  
Email: enquiries@spearheadmachinery.com  
Machine No: Spearhead RC132, Spearhead RC162  
Machine Type: Rotary Hedge Cutter  
Delivery Date:  
Delivery Year: 2017

## WARNINGS, BANS & DIRECTIONS

### WARNING



Never attempt any maintenance or adjustment without first disengaging the PTO/hydraulic pump.

### WARNING



**Only** authorised personnel are allowed to do maintenance on the equipment.

### CAUTION



Read this manual carefully before using the machine.



## DISASSEMBLING

Machine disengaged from all connections.

### NOTICE



To ensure the most environmentally friendly removal, the machine must be disassembled and the parts separated as following:

Category	Example of Parts
Rubber & Plastic	Hoses, Rubber Guards, Stabilisers, Plastic Strips etc.
Technical Components	Pumps, Motors, Hydraulic Hoses etc.
Pure Metal	Plates, Pipe Guards, Blades, Pulleys etc.

Disposal must be carried out according to present national and EC legislations.

# Spearhead RC 132/162

## PROBLEM SOLVING

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
<b>Valve or engine leak</b>	Too high return oil pressure	Check oil pressure. Free to tank. Change washer.
	Too high leak oil pressure	Check oil pressure. Free to tank. Change washer.
	Return hose not correctly mounted or has fallen off	Install correctly or reinstall. Change seals and/or lid on the valve.
<b>Overheating</b>	Incorrect machine speed	Test RPM on tool.
	Wrong oil level	Check oil level.
	Wrong oil type	Empty the tank and refill with correct oil type.
	Blockage of blades	Remove cuttings/debris.
	Air temperature is too high	Install a hydraulic oil cooler. Reduce operating speed.
<b>Hydraulic failure</b>	Oil level too low	Refill with oil to the correct level.
	Oil leak in pressure hose	Check machine for leaks.
	Oil pump filter is blocked	Replace the filter element.
<b>Branches get "frayed"</b>	Larger branches than recommended	Never exceed the recommended maximum branch sizes of the hedge cutter.
	Working during winter time	Work during growth season.
<b>Cutting result skewed/hacked</b>	Defective rotor bearings	Change bearings.
	Rotor damaged/bent	Change rotor and only work on suitable material.
	Forward drive too fast	Adjust speed.
<b>Tool is shaking</b>	Rotor damaged/bent	Change rotor.
	Weight of blades uneven due to wear	Sharpen until even weight or replace.
	A blade is stuck	Loosen the blade.
	A blade is broken	Replace the blade.
<b>Cuttings are thrown towards the cab</b>	Tool is turned so that the rotor is facing the cab	Only operate as recommended by Spearhead Machinery.
<b>A rotor stops</b>	Belt tension incorrect	Adjust to correct tension.

# Spearhead RC 132/162

## Ordering Parts

When ordering parts, please refer to your parts list to help your dealer with your order. Please provide the following information:

Model Number

Part Number and quantity

Description

Serial number of machine

Delivery instructions (e.g. next day)

Delivery is normally via carrier direct to your dealer. Please check with your dealer for stock availability and arrangement of dispatch. Ensure you or your dealer has sufficient cover for parts requirement outside factory hours.

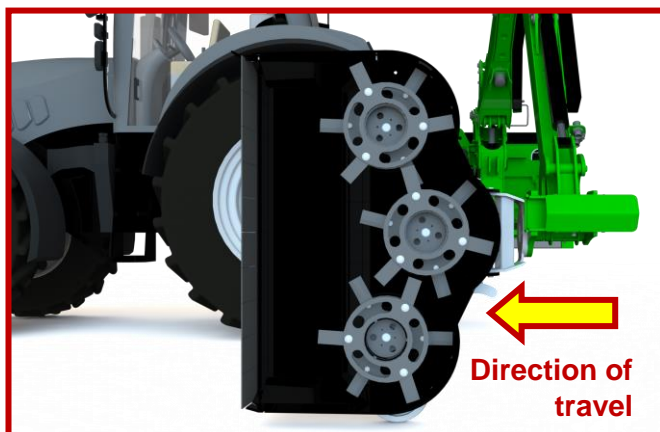
### Important Note:

The information contained in this manual is correct at the time of publication. However, in the course of constant development, changes in specification are inevitable. Should you find the information given in this book different to the machine it relates to, please the "After Sales Department" at Spearhead Machinery for advice.

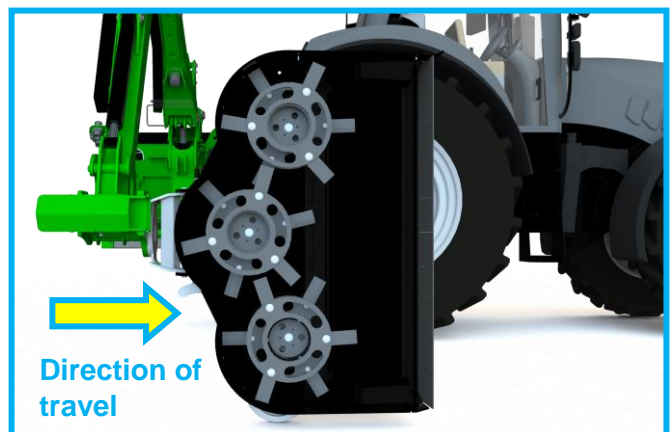
### Key:

LH: Left Hand

RH: Right Hand



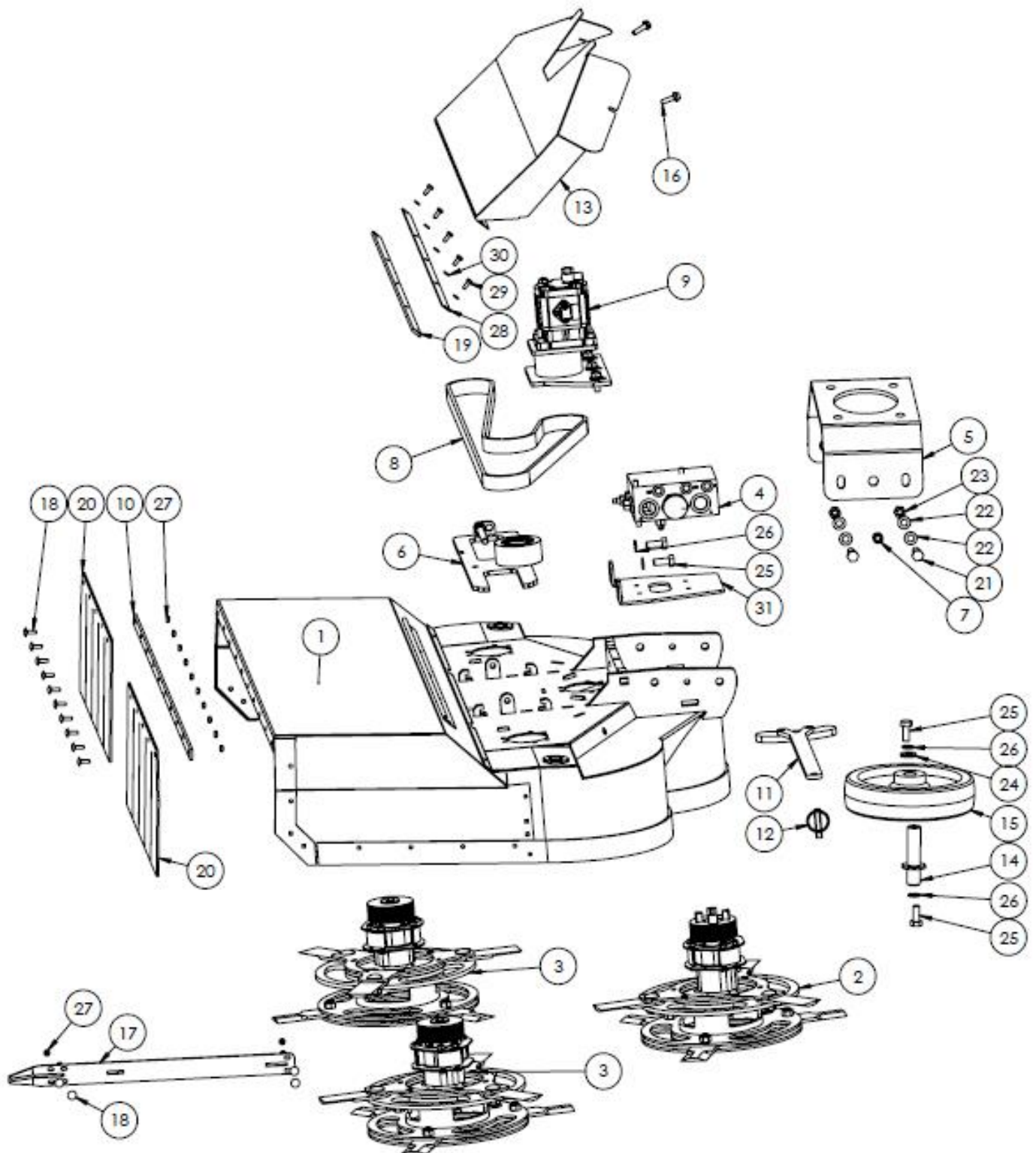
**LH Mounted Machines**



**RH Mounted Machines**

# Spearhead RC 132/162

## MAIN FRAME OVERVIEW – RC 132



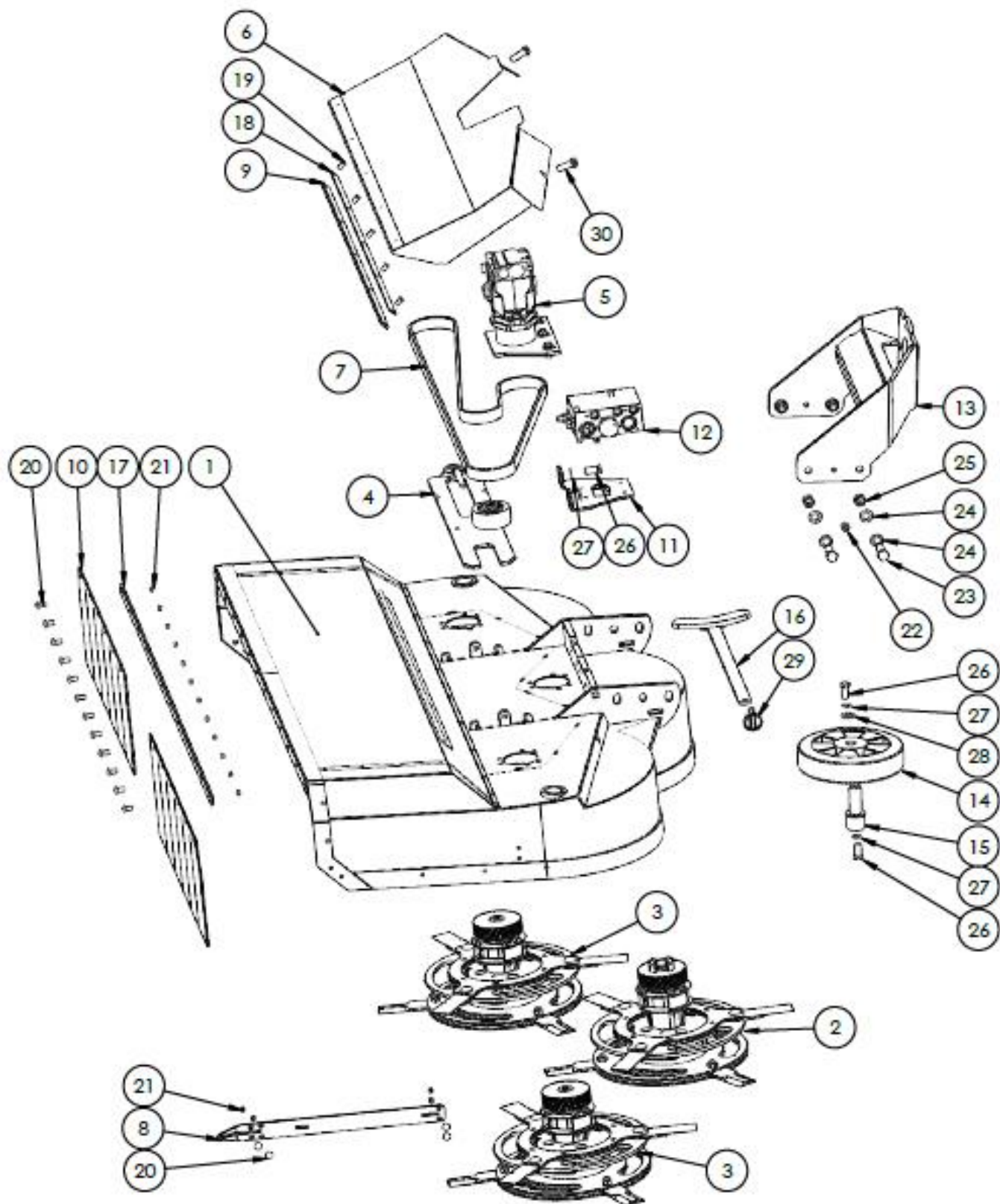
# Spearhead RC 132/162

## MAIN FRAME OVERVIEW – RC 132

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	8481502	MAIN BODY LH/RH	1
2		SEE "ROTOR CENTRE"	1
3		SEE "ROTOR OUTER"	2
4	6703014	FLOWDIVIDER "OPTION"	1
5	8481503	TWIGA COMPACT MOUNT BRACKET	1
6		SEE "TENSIONING SYSTEM"	1
7	8482005	BOLT	2
8	8484001	BELT	1
9		SEE "MOTOR TRANSMISSION"	1
10	8481001	FLAP GUARD MOUNTING RAIL	1
11	8481501	BLADE CHANGE TOOL	1
12	8486002	LYNCH PIN	1
13	8481505	BELT DRIVE GUARD	1
14	8481002	WHEEL SHAFT	1
15	8486001	SUPPORT WHEEL	1
16	8482003	BOLT	2
17	8481506	BRANCH GUIDE	1
18	8482002	CARRIAGE BOLT	14
19	8481004	THREADED HINGE BAR	1
20	8488001	FRONT FLAP	2
21	8362006	BOLT	4
22	2770434	FLAT WASHER	8
23	8362005	NUT	4
24	8222011	WASHER HD	1
25	8222006	BOLT	4
26	8222005	SPRING WASHER	4
27	8482001	LOCK NUT HIGH	14
28	8481005	SUPPORT RAIL	1
29	8482006	BOLT	5
30	8482004	WASHER	5
31	8481003	BRACKET FOR FLOWDIVIDER "OPTION"	1

# Spearhead RC 132/162

## MAIN FRAME OVERVIEW – RC 162





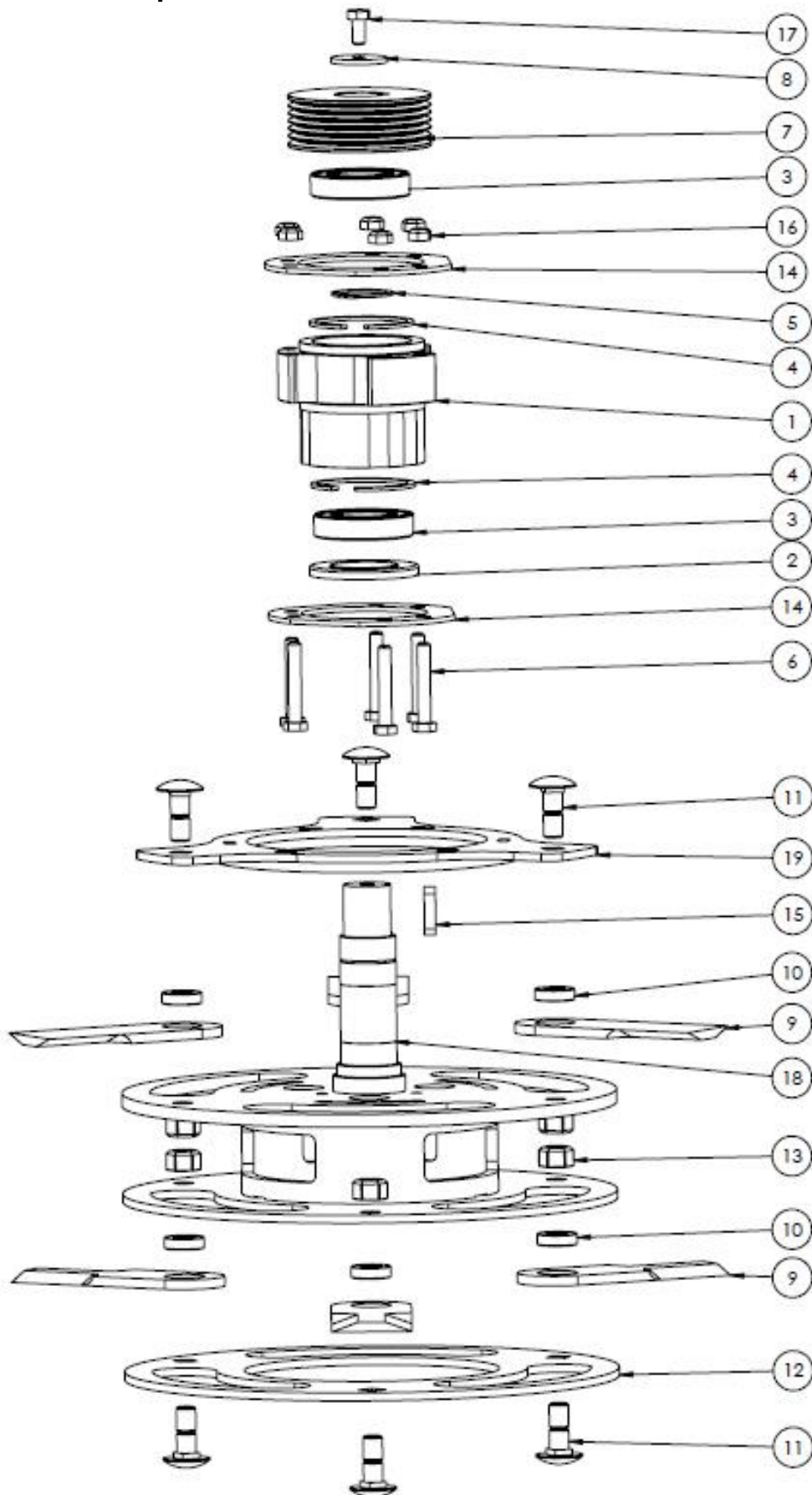
# Spearhead RC 132/162

## MAIN FRAME OVERVIEW – RC 162

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	RC162-01	MAIN BODY LH/RH	1
2	RC162-03	SEE "ROTOR CENTRE"	1
3	RC162-02	SEE "ROTOR OUTER"	2
4	RC162-07	SEE "TENSIONING OPTION"	1
5	RC162-09	SEE "MOTOR TRANSMISSION"	1
6	RC162-11	BELT DRIVE GUARD	1
7	PL 6 rem	BELT	1
8	RC162-12	BRANCH GUIDE	1
9	RC162-01-013	THREADED HINGE BAR	1
10	RC162-01-019	FRONT FLAP	2
11	RC162-01-015	BRACKET FOR FLOWDIVIDER "OPTION"	1
12	Rexroth mængdedeler	FLOWDIVIDER "OPTION"	1
13	RC-162-Twiga adapter	TWIGA MOUNT BRACKET	1
14	Hjul	SUPPORT WHEEL	1
15	RC162-01-018	WHEEL SHAFT	1
16	RC162 modholds vkt	BLADE CHANGE TOOL	1
17	RC162-01-014	FLAP GUARD MOUNTING RAIL	1
18	RC162-01-016	SUPPORT RAIL	1
19	M6x16	BOLT	5
20	Brædebolt M6x20	CARRIAGE BOLT	16
21	M6 Låsemøtrik	LOCK NUT HIGH	16
22	M12x16 CH	BOLT	2
23	M16x50 Bolt	BOLT	4
24	Ø17 Facetskive	FLAT WASHER	8
25	M16 Låsemøtrik	NUT	4
26	M12x30 Bolt	BOLT	4
27	Ø12 Låsemøtrik	SPRING WASHER	4
28	Ø13 svær skive	WASHER HD	1
29	Ringsplit	LYNCH PIN	1
30	M10X40 Gev.skruge	BOLT	2

# Spearhead RC 132/162

## ROTOR OUTER (2 pcs ON MACHINE) - RC 132



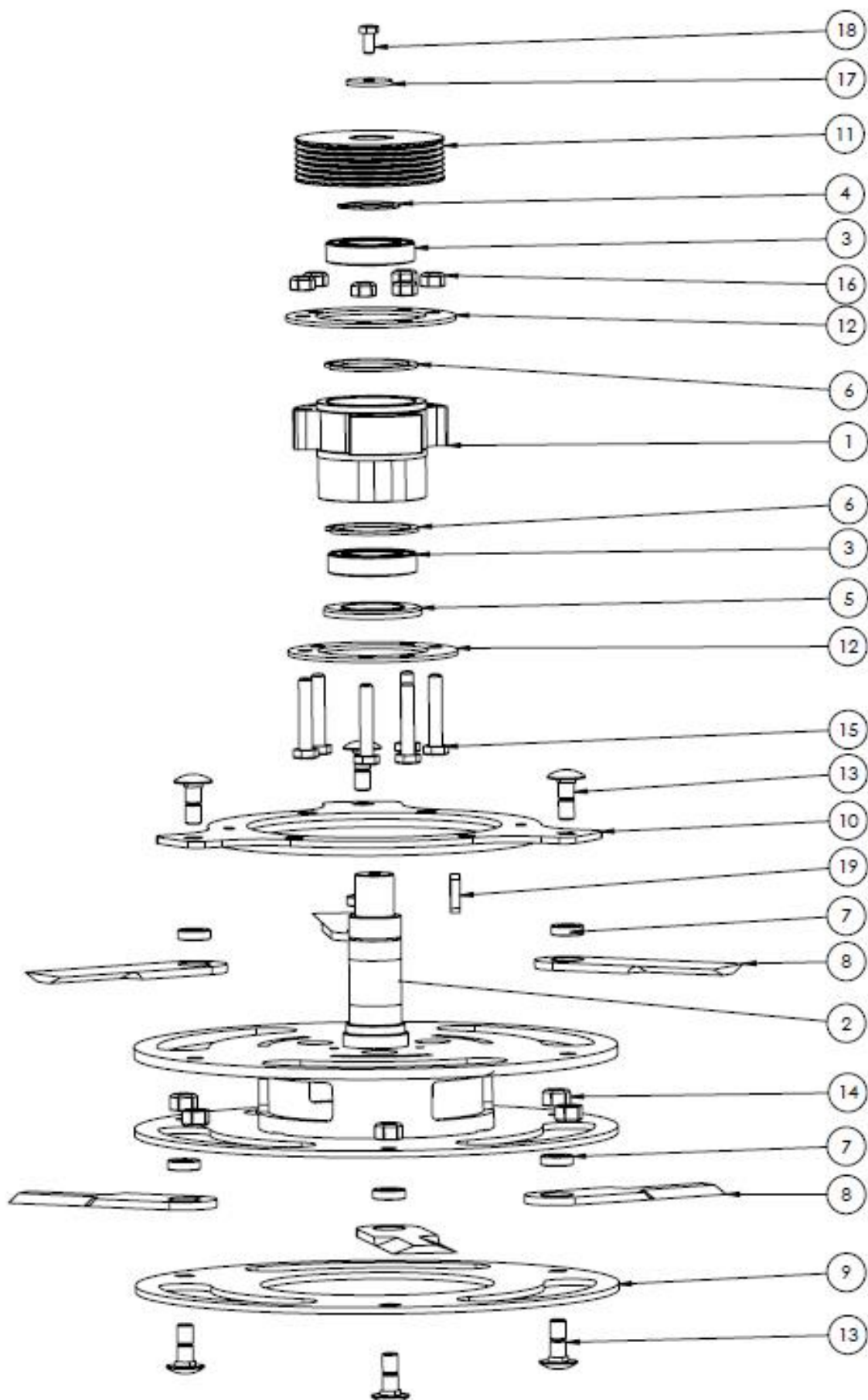
# Spearhead RC 132/162

## ROTOR OUTER (2 pcs ON MACHINE) – RC 132

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	8481006	OUTER BEARING HOUSING	1
2	8484002	METAL SEAL	1
3	8484003	BEARING	2
4	200119.0	CIRCLIP	2
5	0162001.0	CIRCLIP	1
6	8482007	BOLT SPECIAL 10.9	6
7	8484004	PULLEY	1
8	8481007	MOUNT DISK	1
9	8487001	BLADE	6
10	8481008 (7770812)	BLADE BUSH	6
11	8481009 (7770810)	BLADE BOLT	6
12	8481011	LOWER BLADE CARRIER	1
13	8482008	LOCK NUT	6
14	8481010	SPACER	2
15	8484005	KEY	1
16	8482009	LOCK NUT 10.9	6
17	8482010	BOLT	1
18	8481507	ROTOR SHAFT WITH BLADE CARRIER (OUTER)	1
19	8481508	UPPER BLADE CARRIER	1

# Spearhead RC 132/162

## ROTOR OUTER (2 pcs ON MACHINE) – RC 162



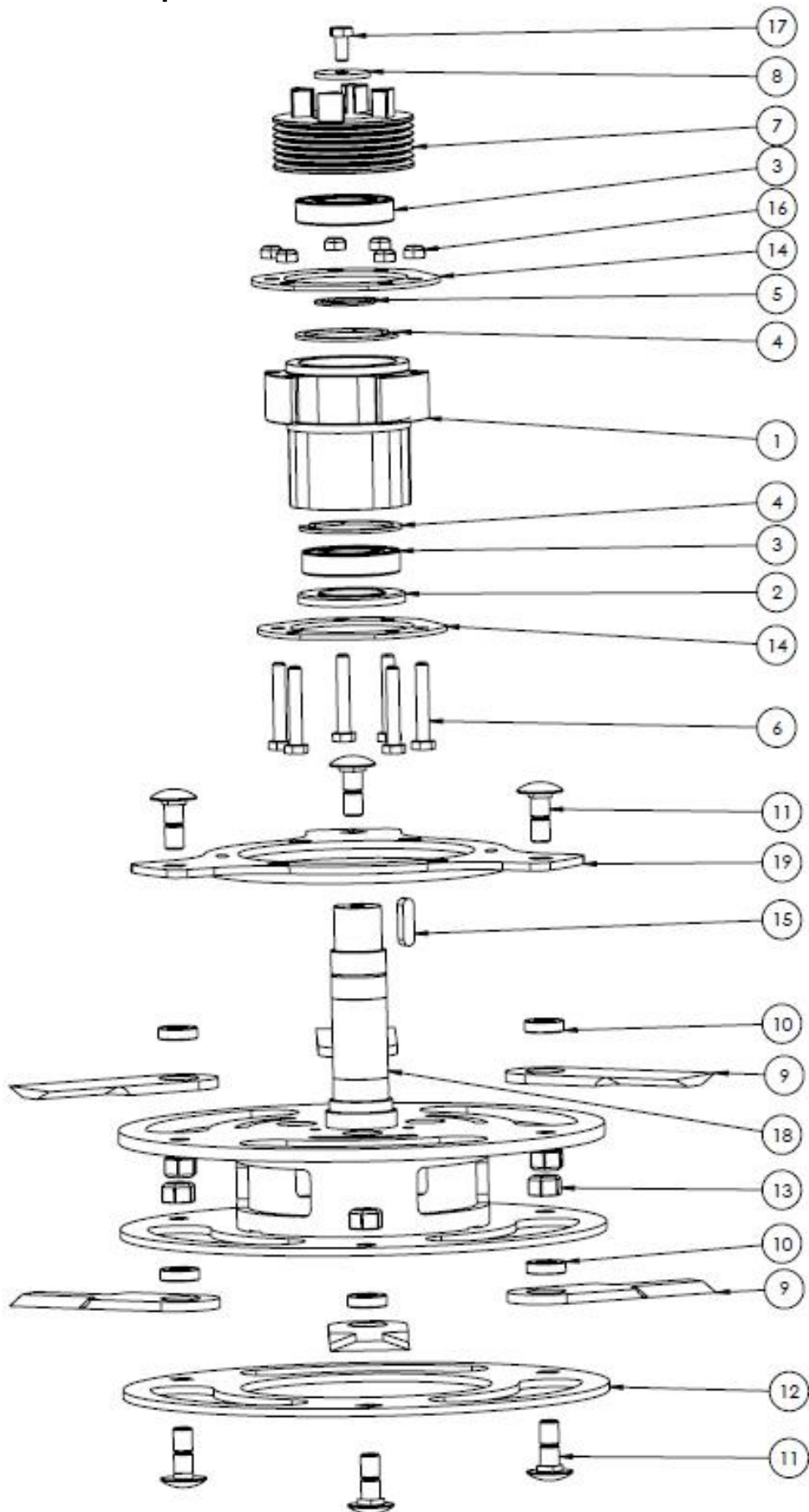
# Spearhead RC 132/162

## ROTOR OUTER (2 pcs ON MACHINE) – RC 162

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	RC162-02-003	OUTER BEARING HOUSING	1
2	RC162-04 trin 3	ROTOR SHAFT WITH BLADE CARRIER (OUTER)	1
3	6008 Leje	BEARING	2
4	UVD. Ø40 låsering	CIRCLIP	1
5	Lameltætning	METAL SEAL	1
6	Ø68 låsering	CIRCLIP	2
7	RC162-02-005	BLADE BUSH	6
8	RC1621 kniv (8777809)	BLADE	6
9	RC162-06-003	LOWER BLADE CARRIER	1
10	RC162-06	UPPER BLADE CARRIER	1
11	RC162-02-001	PULLEY	1
12	RC162-02-004	SPACER	2
13	RC bolt	BLADE BOLT	6
14	Møtrik M12 DIN 980 (7770811)	LOCK NUT	6
15	M10x55 DIN931	BOLT SPECIAL 10.9	6
16	Møtrik M10 DIN 980	LOCK NUT 10.9	6
17	RC162-02-002	MOUNT DISK	1
18	Bolt M8x16	BOLT	1
19	Pasfeder 8mm	KEY	1

# Spearhead RC 132/162

## ROTOR CENTRE (1 pcs ON MACHINE) – RC 132





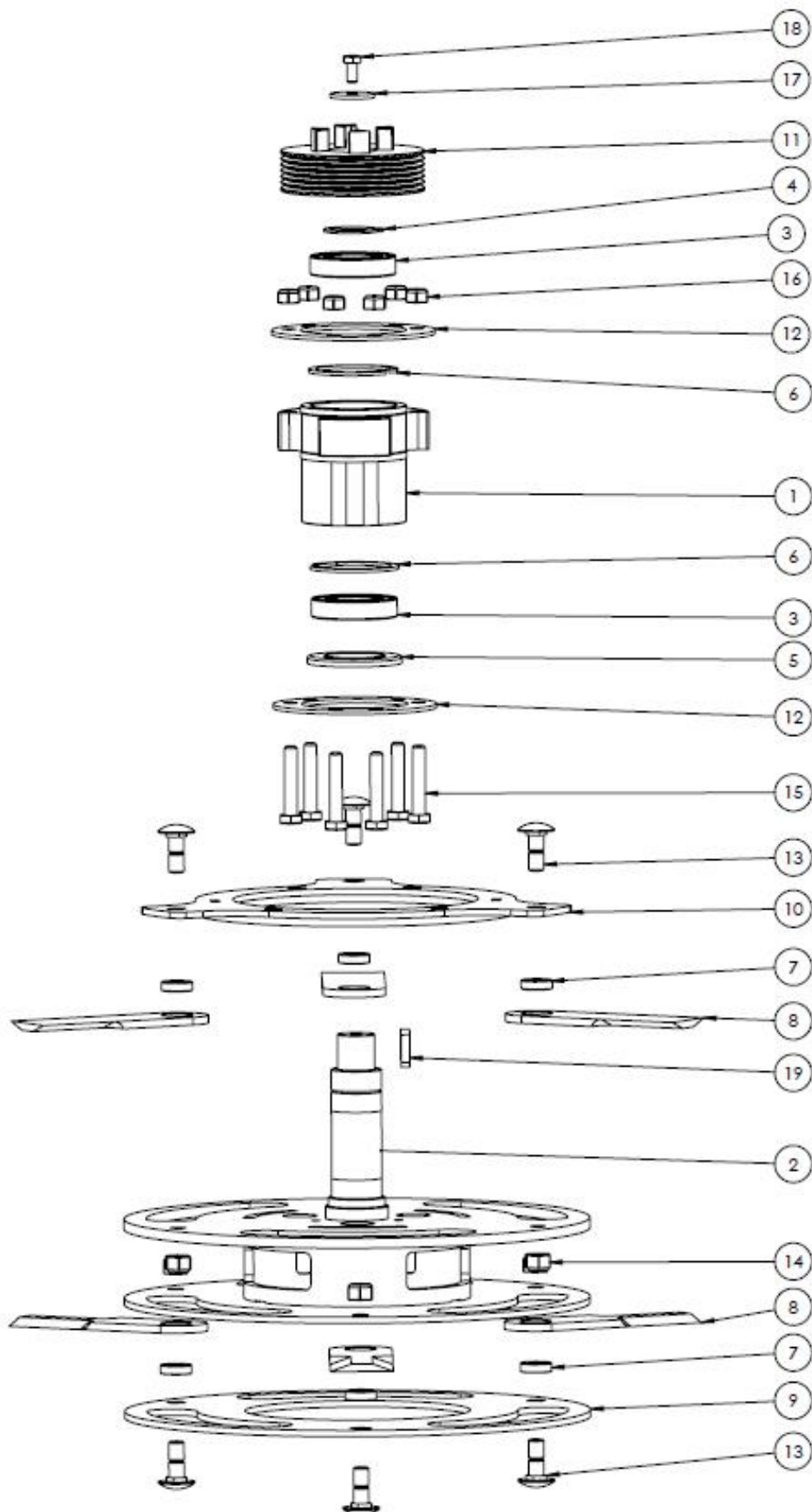
# Spearhead RC 132/162

## ROTOR CENTRE (1 pcs ON MACHINE) – RC 132

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	8481012	BEARING HOUSING FOR CENTRE ROTOR	1
2	8484002	METAL SEAL	1
3	8484003	BEARING	2
4	200119.0	CIRCLIP	2
5	0162001.0	CIRCLIP	1
6	8482007	BOLT SPECIAL 10.9	6
7	8484004	PULLEY WITH CLAW	1
8	8481007	MOUNT DISK	1
9	8487001	BLADE	6
10	8481008 (7770812)	BLADE BUSH	6
11	8481009 (7770810)	BLADE BOLT	6
12	8481011	LOWER BLADE CARRIER	1
13	8482008	LOCK NUT	6
14	8481010	COVER FOR BEARING HOUSING	2
15	8484005	KEY	1
16	8482009	LOCK NUT 10.9	6
17	8482010	BOLT	1
18	8481509	ROTOR SHAFT WITH BLADE CARRIER (CENTRE)	1
19	8481508	UPPER BLADE CARRIER	1

# Spearhead RC 132/162

## ROTOR CENTRE (1 pcs ON MACHINE) – RC 162



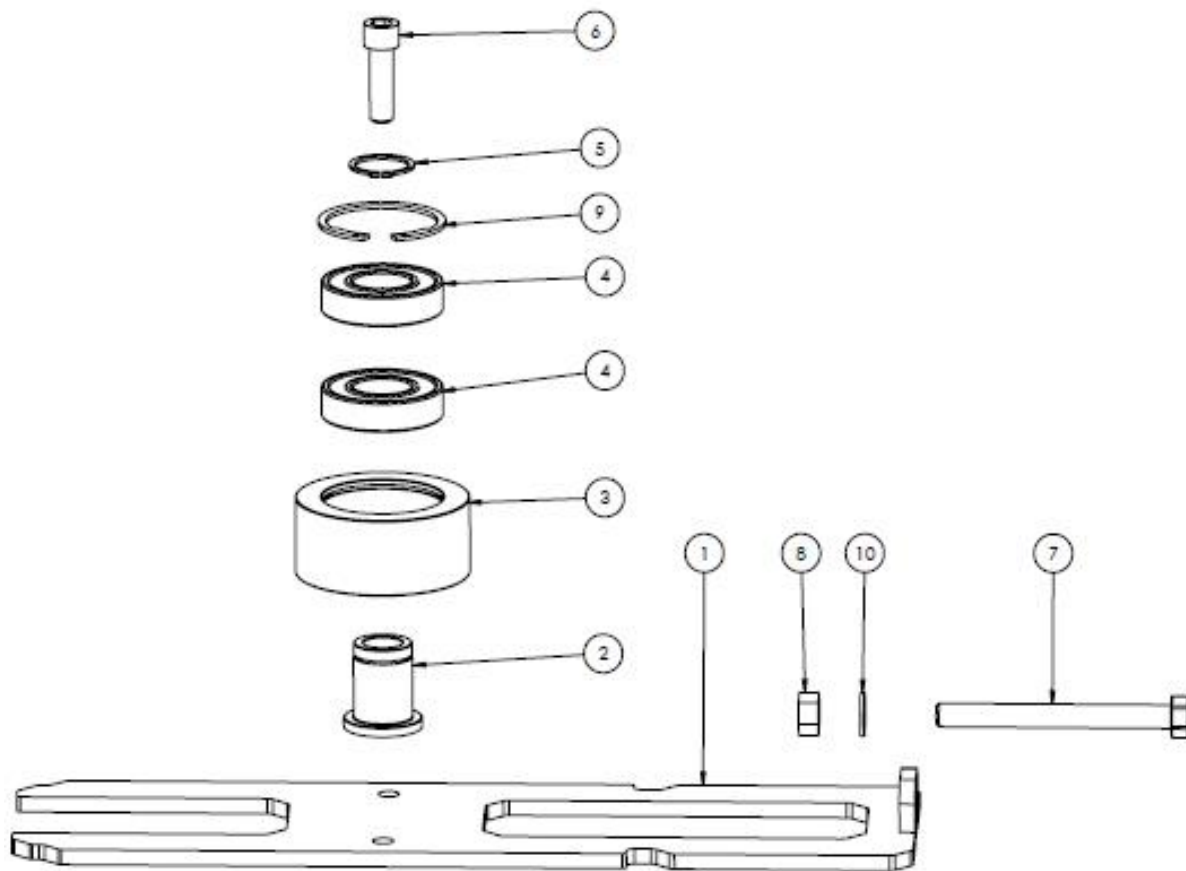
# Spearhead RC 132/162

## ROTOR CENTRE (1 pcs ON MACHINE) – RC 162

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	RC162-03-001	BEARING HOUSING FOR CENTRE ROTOR	1
2	RC162-05 trin 3	ROTOR SHAFT WITH BLADE CARRIER (CENTRE)	1
3	6008 Leje	BEARING	2
4	UVD. Ø40 låsering	CIRCLIP	1
5	Lameltætning	METAL SEAL	1
6	Ø68 låsering	CIRCLIP	2
7	RC162-02-005	BLADE BUSH	6
8	RC162 kniv	BLADE	6
9	RC162-06-003	LOWER BLADE CARRIER	1
10	RC162-06	UPPER BLADE CARRIER	1
11	RC162-03-002	PULLEY WITH CLAW	1
12	RC162-02-004	COVER FOR BEARING HOUSING	2
13	RC bolt	BLADE BOLT	6
14	Møtrik M12 DIN 980	LOCK NUT	6
15	M10x55 DIN931	BOLT SPECIAL 10.9	6
16	Møtrik M10 DIN 980	LOCK NUT 10.9	6
17	RC162-02-002	MOUNT DISK	1
18	Bolt M8x16	BOLT	1
19	Pasfeder 8mm	KEY	1

# Spearhead RC 132/162

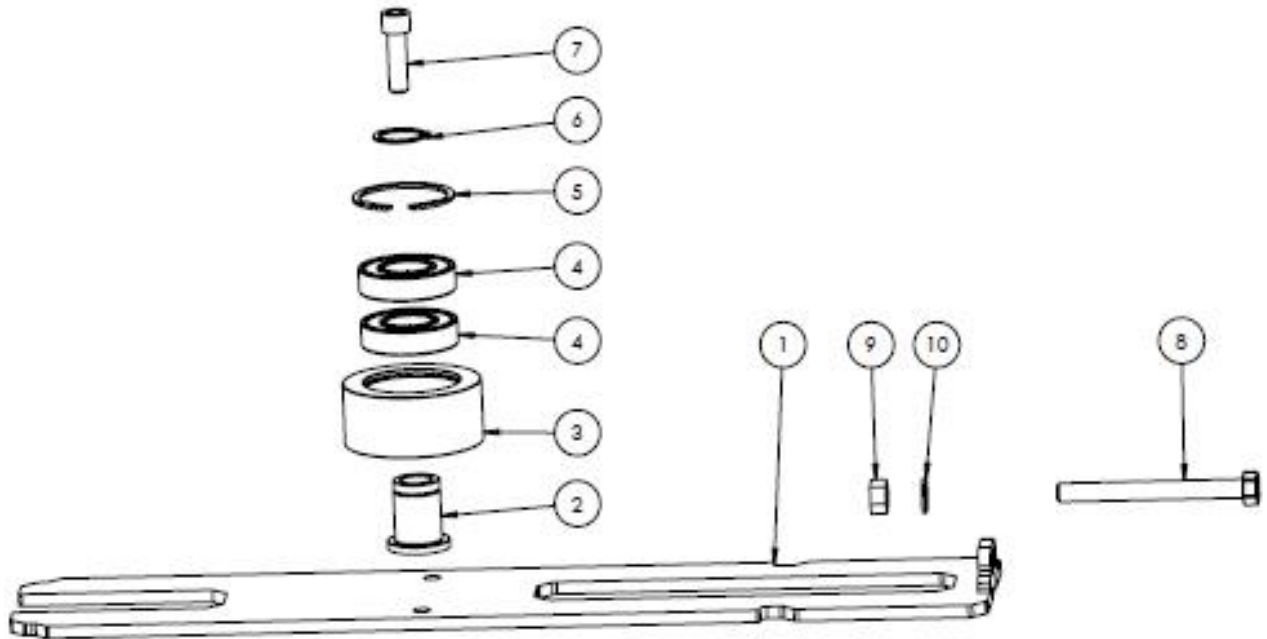
## TENSIONING SYSTEM – RC 132



ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	8481510	TENSION PLATE RH/LH	1
2	8481013	SHAFT FOR BELT TENSION	1
3	8481014	PULLEY FOR BELT TENSION	1
4	200120.0	BEARING	2
5	200121.0	CIRCLIP	1
6	8482011	BOLT	1
7	8362007	BOLT	1
8	2770536	NUT	1
9	200119.0	CIRCLIP	1
10	8222003	SPRING WASHER	1

# Spearhead RC 132/162

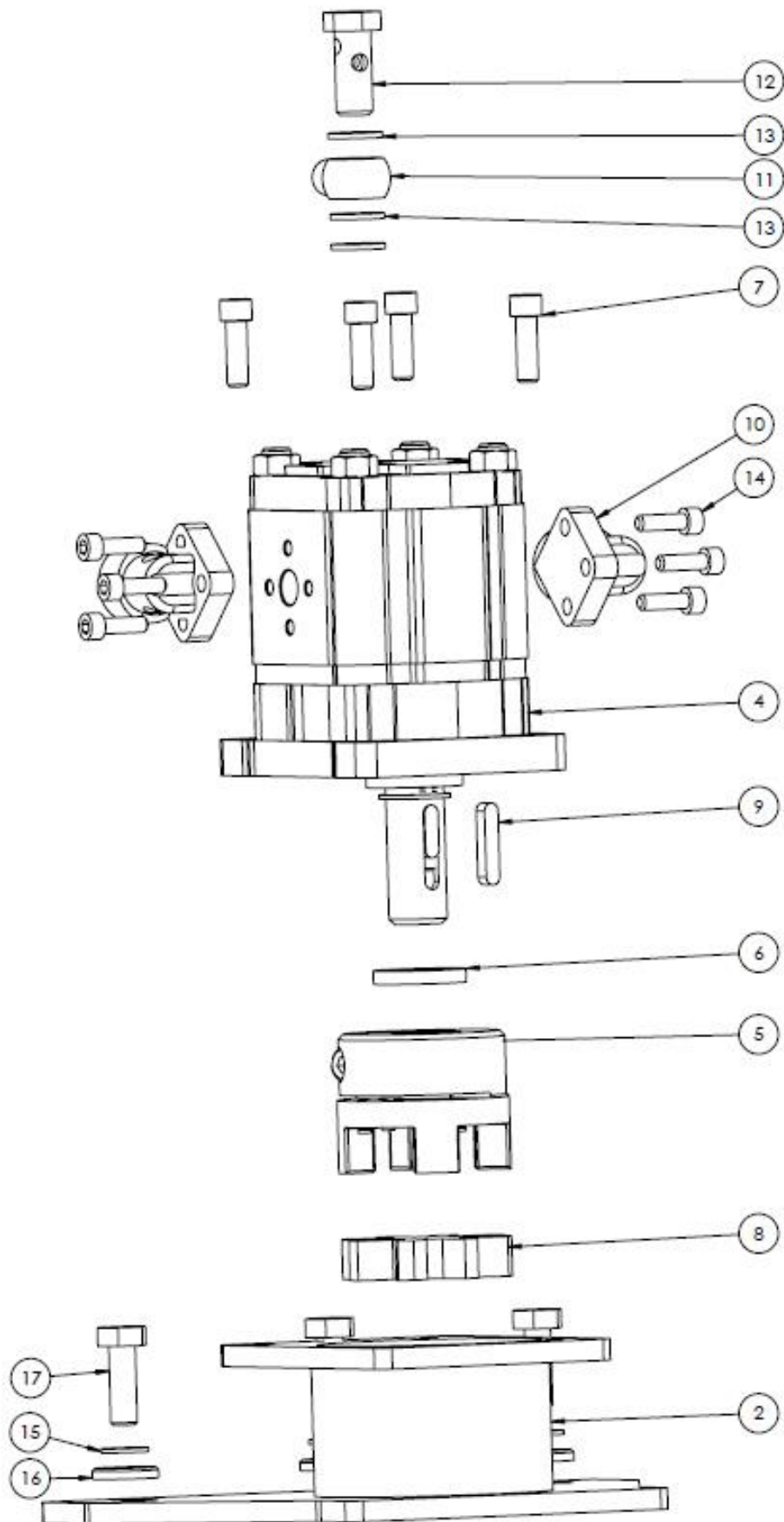
## TENSIONING SYSTEM – RC 162



ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	RC162-08	TENSION PLATE RH/LH	1
2	RC162-07-001	SHAFT FOR BELT TENSION	1
3	RC162-07-002	SHAFT FOR BELT TENSION	1
4	6206 leje	BEARING	2
5	62mm. låsering	CIRCLIP	1
6	Ø30 låsering	CIRCLIP	1
7	M12x40 CH	BOLT	1
8	M12x120 sætbolt	BOLT	1
9	M12 møtrik	NUT	1
10	Ø12 Fjederskive	SPRING WASHER	1

# Spearhead RC 132/162

## MOTOR TRANSMISSION – RC 132





# Spearhead RC 132/162

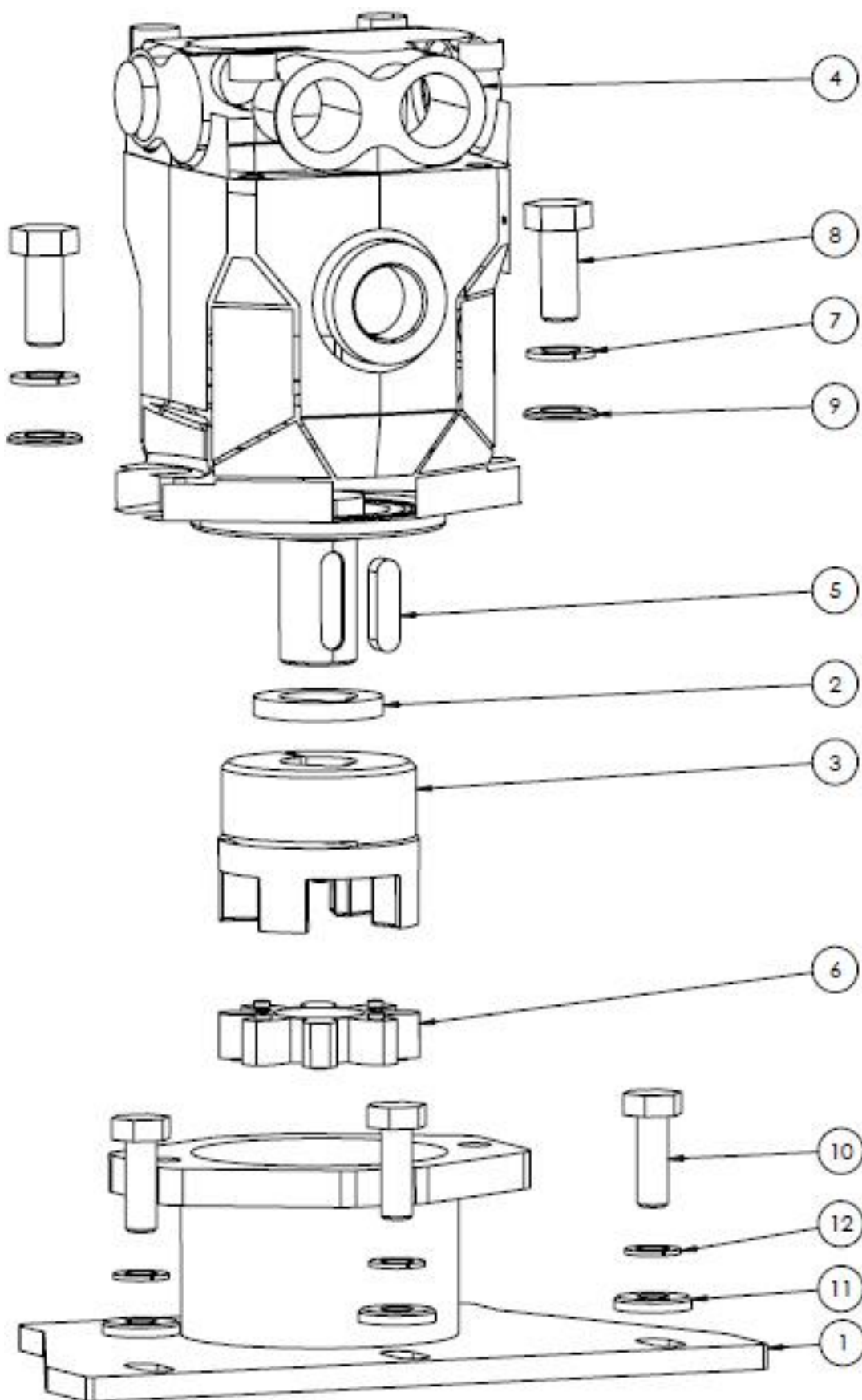
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## MOTOR TRANSMISSION – RC 132

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
2	8481511	CLAW HOUSING	1
4	8483001	MOTOR	1
5	8486003	CLAW	1
6	8481015	SPACER	1
7	8482012	BOLT	4
8	8486003	ELASTIC ELEMENT	1
9	8484007	KEY	1
10	8143002	PORT ELBOW	2
11	8143004	BANJO CONNECTOR	1
12	8143003	BANJOBOLT 1-4"	1
13	8143005	SEAL	3
14		NOT AVAILABLE USE NO. 10	3
15	8222003	SPRING WASHER	3
16	8142003	WASHER HD	3
17	200109.0	BOLT	3

# Spearhead RC 132/162

## MOTOR TRANSMISSION - RC 162



# Spearhead RC 132/162

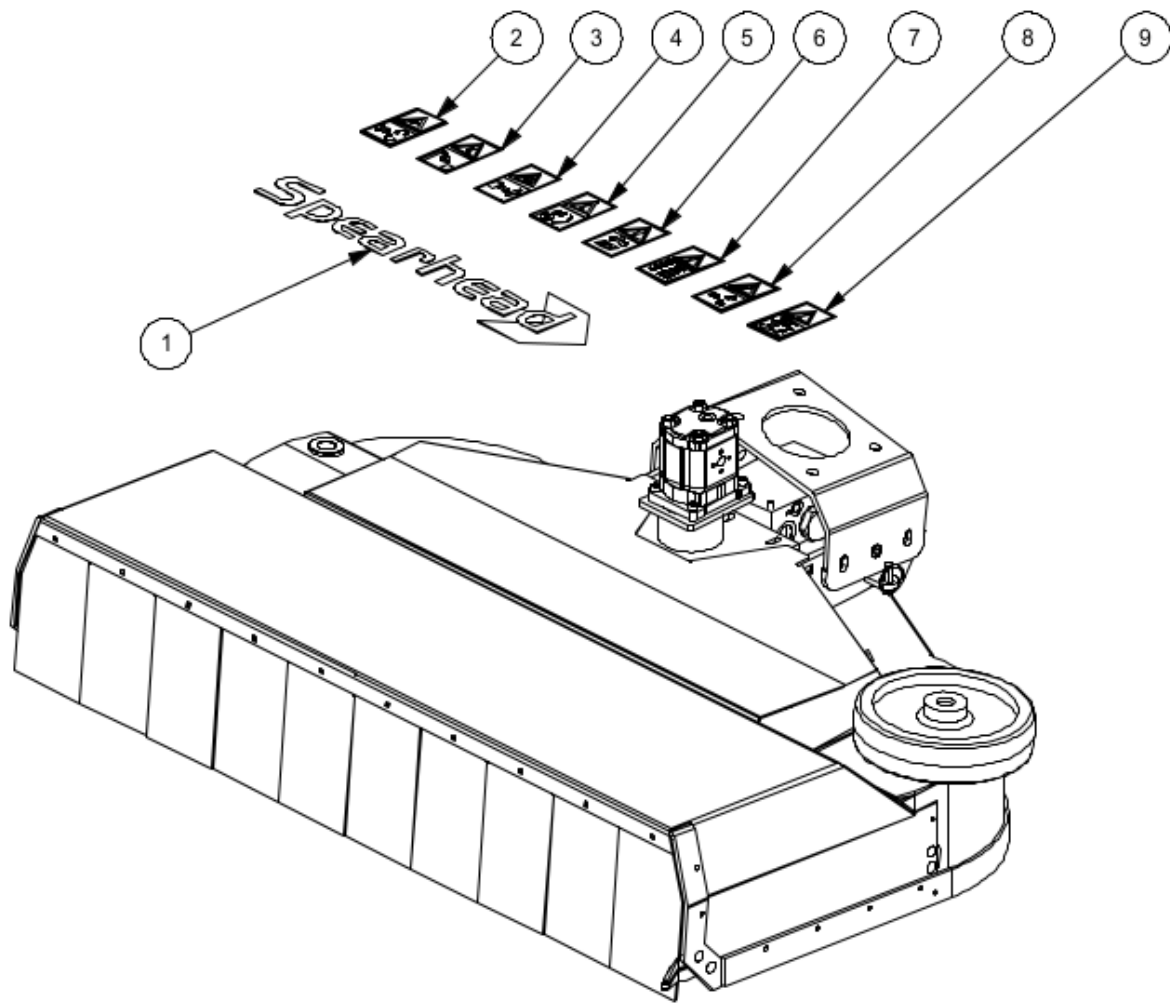
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## MOTOR TRANSMISSION – RC 162

ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1		CLAW HOUSING	1
2	RC162-10	SPACER	1
		CLAW	
4	RC162-10-003	MOTOR	1
5	Klokobling	KEY	1
6	Bondioli motor	ELASTIC ELEMENT	1
7	Pasfeder 8mm.	SPRING WASHER	1
8	Gummi element	BOLT	1
9	Ø12 Låseskive	FLAT WASHER	2
10	M12x30 bolt	BOLT	2
11	Ø13 Facetskive	FLAT WASHER	2
12	M10x30	SPRING WASHER	3

# Spearhead RC 132/162

## S180020.100 - MARKETING & SAFETY DECALS - RC 132/162



ITEM NO.	PART NO.	DESCRIPTION.	QTY.
1	8770373	SPEARHEAD DECAL	1
2	8770361	ROTARY DANGER DECAL	1
3	8770359	PYLONS DECAL	1
4	8770357	FLYING DEBRIS DECAL	1
5	8770306	BOLTS TIGHT DECAL	1
6	8770358	REMOVE KEY + READ BOOK DECAL	1
7	8770363	READ MANUAL DECAL	1
8	8770356	BELTS DECAL	1
9	8770451	DON'T STAND ON MACHINE DECAL	1



