



AUTOGUIDE EQUIPMENT



500X POWERHEAD

MANUAL SPARE PARTS



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These instructions give safety and operations information regarding the use of a Digger Mounted Auger Powerhead supplied by Autoguide Equipment. They contain the relevant information for products:

| Product Code | Description | Maximum Output Power (Nm) |
|--------------|----------------|---------------------------|
| 05032 | 500X Powerhead | 5000 |

To ensure optimum results when operating this equipment it is very important to read this manual carefully, the information will prepare you to do a better, safer job.

Before operating the machine you should familiarise yourself with the instructions in this manual. Incorrect use can lead to damage which is not covered by the Warranty Conditions. This may create a dangerous situation or lead to unsatisfactory results.

These operating instructions **MUST** always be made available to the person or persons operating this equipment.

To assist in the ordering of spares, or other communications with our company, the serial number of the relevant equipment supplied, has been recorded below for your information.

Model No:-

Serial No:-

Date of Delivery:-

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INFORMATION

Your Powerhead has been individually built with great emphasis on quality, strength and simplicity of design and with routine care will give many years of trouble free operation.

The following instructions have been written to cover the use and maintenance of the machine. Care should be taken to ensure that you are referring to the correct section of your machine before carrying out any adjustments, or when ordering spare parts.

Like all mechanical products, regular cleaning, lubrication and maintenance will ensure a longer trouble free life. These instructions make no attempt to go beyond routine maintenance, and it is strongly advised that you contact your dealer should any major repairs become necessary.

Use only genuine service parts; non genuine parts may not meet standards required for safe and satisfactory operation.

Observe all safety information in the manual and on decals fitted to the machine and power unit.

Safety Instructions

1. Read and understand this operator's manual prior to operating the machine and keep it in a convenient place for future reference.
2. Keep untrained personnel away from the machine whilst it is in operation.
3. Keep all guards and safety devices in place.
4. Do not operate machine with guards removed.
5. Beware, pressured hydraulic oil can be very dangerous and can penetrate the skin - TAKE THE UTMOST CARE.
6. Keep hands, feet and loose clothing away from moving parts.
7. Always switch off the machine before making any adjustments or when carrying out lubrication and servicing.
8. Keep all nuts, bolts and fasteners tightened.
9. Check machine regularly for damaged or worn parts.
10. If the machine is left unattended ensure that it is locked or disabled to prevent use by untrained personnel.

Daily Check Items

1. Check the unit is properly and securely attached to the crane/excavator unit.
2. Check that all nuts and bolts are secure, mounting pins are properly retained, and all safety shields are in place. (All nuts and bolts should be checked after the first 10 hours of operation.)

3. Check the condition and security of any auger or anchor driver attachment.
4. Lubricate all grease nipples.

Maintenance

1. To ensure a long life, regularly grease the main pivot pins on both the gimbal and powerhead. This increases the ease of rotation of the powerhead and will help prevent seizure if kept lubricated.

POWERHEAD INSTALLATION

The safe operation of this equipment is the responsibility of the operator, who should be familiar with the lifting process, the power unit and all safety practices before starting operations.

Attaching the Powerhead to the Power Unit

1. **SWITCH OFF** the power unit.
2. Lubricate the mounting pins.
3. Attach the Powerhead to the digger using the correct swivel or mounting bracket. Depending on the specification of the Powerhead, ensure that it is mounted facing the correct way to ensure correct hose routing.



4. De-pressurise hydraulic systems using the manufacturers approved techniques before connecting the Powerhead.
5. Ensure all connections are clean and free from dirt before connecting the Powerhead hydraulic supply into the power units' auxiliary hydraulic supply.
6. Connect the hydraulic lines as follows:
 - Port A is connected to flow in.
 - Port B is connected to the flow return.

Note: Hose size and condition of any quick couplers that are used will have an effect on the efficient operation of the unit.

7. Disconnect the hoses from the motor, connect together and flush the system through for a minimum of 10 minutes to ensure any debris from installation is removed by the filter system of the supply.

Note: All hydraulic motors are sensitive to foreign objects in the hydraulic oil. Debris can cause damage thus reducing the efficiency and output power of the motor.

8. Reconnect to the motor, ensuring no debris gets on the connections.
9. Operate the digger's auxiliary circuit to test the Powerhead and ensure rotation.
10. Raise and lower the digger boom to make sure that there is no interference with the boom or and that the gimbal rotates as required.
11. Once complete, lower the powerhead unit to the ground while not in use.

Pre-operation check list

1. Keep bystanders away from all rotating attachments.
2. Ensure you are aware of the environment you are working in; be aware of overhead cabling and other utilities services.

ANCHOR INSTALLATION

Installing Screw Anchors

1. Attach the anchor driver to the powerhead using the pin and clip supplied.
2. Load the anchor lead section and place the retaining double pin through the drive head adapter and anchor.
3. Place the point of the anchor on the ground in the location required.
4. Begin to install the anchor with some force in the direction of travel, until the (first) flight is under the surface.
5. Once the flight is clear of the surface continue to install slowly and adjust the angle of installation to desired position.
6. Continue to install the anchor taking care to apply a little axial pressure and keeping the head along the line and angle of installation
7. On achieving desired depth and torque release the forward pressure on the driver and remove locking pins
8. Move the digger boom to remove the drive adapter from the anchor.
9. If required, insert the extension into drive adapter and secure with the locking pins.
10. Move the extension so that the sleeve on one end passes over the lead section and secure with two or 3 bolt assemblies as provided.
11. Repeat the process of screwing the pile into the ground, keeping a gentle axial pressure upon the pile.
12. Once complete, remove the locking pins, back off the drive adapter and powerhead and attach the termination bracket with bolts if required.

General Principles of Operation

All Powerheads are designed to stall at the rated operating pressures before anything breaks, however continuous operation of stalled motors will overheat the hydraulic system and cause expensive damage. Therefore operate as fast as required but avoid excessive motor stall.

TROUBLESHOOTING

| Symptom | Possible Cause | Action |
|------------------------|-------------------------------|--|
| Jerky | Cold Oil | Allow time to warm up |
| | Air in Pipes | Check oil Level |
| | Non Compatible Quick Couplers | Use Matched pairs |
| | Non Compatible Quick Couplers | Replace |
| | Hoses too small for flow | Replace |
| | Wrong Model Powerhead | Select appropriate model |
| Slow | Pump Failing | Carry Out flow and Pressure Check |
| | Oil Filter Blocked | Carry Out flow and Pressure Check |
| | Dirt Contamination | Service Exchange Motor |
| | Low Speed Lock Engaged | Put Selector in Auto |
| Poor Torque | Low Hydraulic Pressure | Carry Out Flow and Pressure Check |
| | Excessive Oil Temperature | Check Pump, Check Hose Sizes, Use Correct Powerhead |
| | Relief Valve Blows | Use smaller Auger or Larger Powerhead |
| Oil leaks | Loose Fittings | Tighten Up Fittings |
| | Leaky Connections | Reseal or check Configuration |
| | Pressure Too High | Use compatible head and fittings |
| Leak from Relief Valve | Drain Link is Kinked | Check 2 bar max back Pressure. Replace Relief Valve. |
| | Non Return Valve Seizes | Remove unit and check ball is free moving. Ball can become wedged & sticky, due to high pressure (over 20 bar) or extended storage. Replace valve & relief valve |

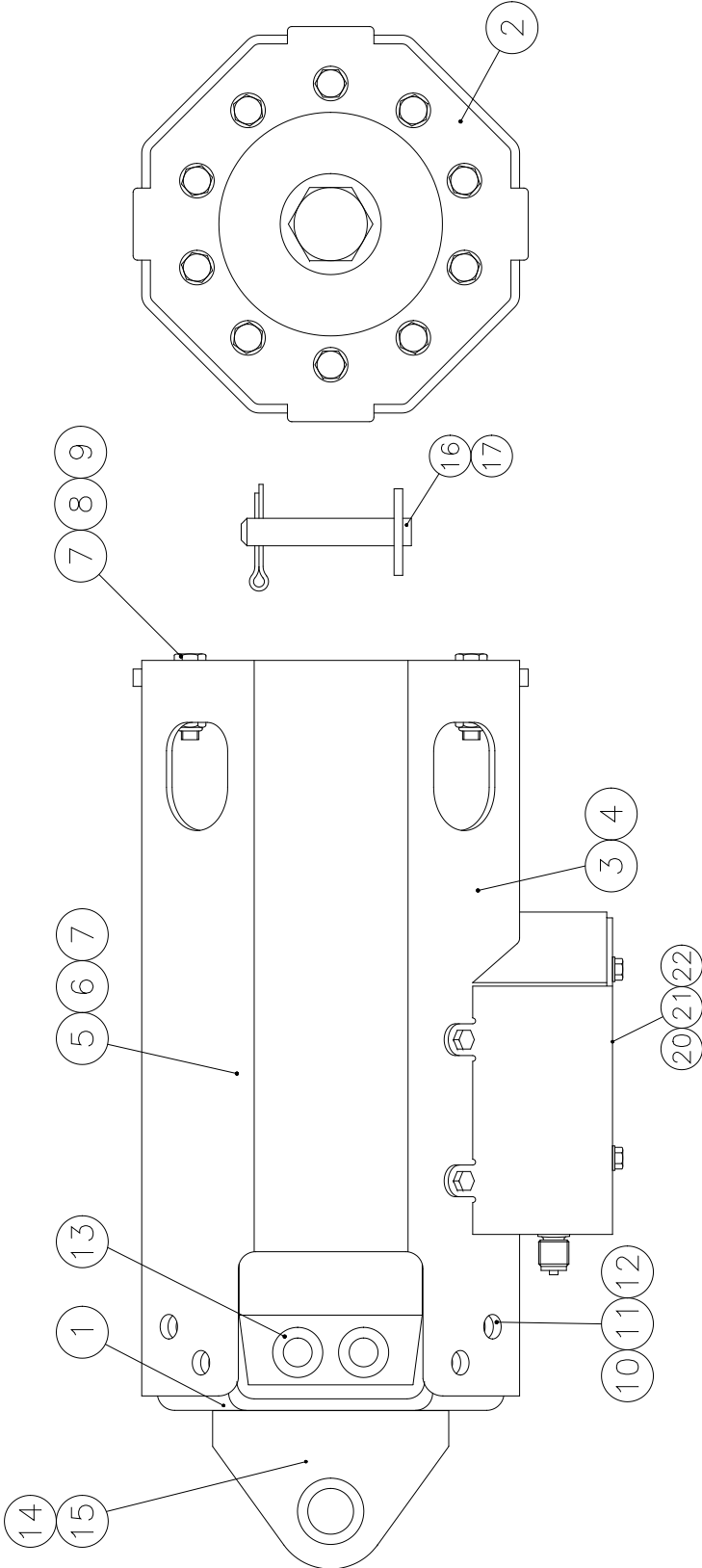
END OF LIFE

When the machine reaches the end of its useable lifetime it is important that the independent elements of the machine are reused, recycled or disposed of suitably.

| Component | What to do? |
|-----------------|---|
| Metals | All metals should be recycled with an appropriate scrap metal merchant, preferable sorted into metal type. |
| Electronics | All electrical components should be recycled at an appropriate facility according to the WEEE Directive and Regulations 2013 |
| Oils | Oil waste is classed as Hazardous and therefore must be stored separately and according to legal regulations (that differ dependent on country). It must be disposed of by a suitable Waste Oil collection company. |
| Hydraulic Hoses | Hydraulic hoses should be drained of oil, metal ends removed and then recycled with a suitable specialist recycling company. Metal ends can be sent to metal recycling centers. |
| Plastics | All plastics should be sorted into recyclable and non-recyclable and then either sent to suitable recycling facilities or landfill. |

SPARE PARTS LIST

05032 - 500X Powerhead



Code
5032

Description
500X Powerhead

| No. | Code | Description | Quantity |
|------------|-------------|-------------------------------|-----------------|
| 1 | 29422 | W/A TOP PLATE | 1 |
| 2 | 29484 | BODY W/A | 1 |
| 3 | 27915 | HYDRAULIC MOTOR | 1 |
| 4 | 8627 | GEARBOX | 1 |
| 5 | 10397 | BOLT M012 X 45 DURLOK | 4 |
| 7 | 2105 | M12 PLAIN WASHER FORM C | 20 |
| 8 | 2774 | M12 NYLOC NUT | 10 |
| 9 | 3866 | M12 X 50 HEX HD BOLT | 10 |
| 10 | 2104 | M16 PLAIN WASHER FORM C | 8 |
| 11 | 2363 | BOLT M016 X 050 | 8 |
| 12 | 3941 | M16 NYLOC NUT | 8 |
| 13 | 5962 | 7/8-14 TO 1/2 ADAPTOR | 2 |
| 14 | 23368 | W/A TOP PIN | 1 |
| 15 | 3431 | LINCH PIN | 1 |
| 16 | 30154 | AUGER PIN W/A 3/4IN | 1 |
| 17 | 4505 | 1/4IN X 2IN SPLIT COTTER PIN | 1 |
| 18 | 31165 | SHIM - 250 A/F POWERHEAD 1.5T | 2 |
| 19 | 30061 | SHIM - 250 A/F POWERHEAD 1.0T | 2 |
| 20 | 30701 | GAUGE BOX W/A | 1 |
| 21 | 30200 | GAUGE SCALE 0-6 STAINLESS | 1 |
| 22 | 8635 | GAUGE 0-400 BAR 6IN BOTT ENT | 1 |

RISK ASSESSMENT

Operation of Excavator-driven Torque Head & Installation of Piles

Section 1: Assessment Information

| | |
|---------------------------------------|--|
| Activity / Item / Area | Operation of Excavator-mounted Torque Head & Installation of Piles |
| Person at Risk | Installation Operative and others in the work area |
| Total Number of People at Risk | 1+ |
| Responsible Person | Excavator Operative, Installation Operative |
| Assessor | Rob Robinson |

Section 2: Likelihood/Severity of Injury

| Significant Risks | | Likelihood | Severity | Residual Risk |
|-------------------|----------------------------------|------------|----------|---------------|
| 1. | Injury caused by impact/crushing | 1 | 4 | 4 |
| 2. | Slips, trips & falls | 2 | 3 | 6 |
| 3. | Manual handling | 2 | 3 | 6 |
| 4. | Use of hand tools | 2 | 1 | 2 |
| 5. | Striking utilities | 3 | 4 | 12 |

| | | Severity | | | | |
|------------|------|----------|---------|-------|----------|---------------------|
| | | Minor | Serious | Major | Fatality | Multiple Fatalities |
| Likelihood | 1 | 1 | 2 | 3 | 4 | 5 |
| | Rare | 1 | 1 | 2 | 3 | 4 |
| Unlikely | 2 | 2 | 4 | 6 | 8 | 10 |
| Moderate | 3 | 3 | 6 | 9 | 12 | 15 |
| Likely | 4 | 4 | 8 | 12 | 16 | 20 |
| Certain | 5 | 5 | 10 | 15 | 20 | 25 |

| | | | |
|----------|---------------|------------------|-----------|
| Low Risk | Moderate Risk | Significant Risk | High Risk |
|----------|---------------|------------------|-----------|

$$\text{Likelihood} \times \text{Severity} = \text{Residual Risk}$$

Section 3: Control Measures

| |
|--|
| 1) Appropriate PPE is worn including hard hat, eye glasses, gloves and high-visibility clothing as a minimum. Ear protection may be required when operating or working in close proximity to certain excavator models |
| 2) Installation Operatives will maintain a line of sight with the excavator operative at all times |
| 3) Hands will be kept away from connecting parts. Connecting parts such as pins will be maintained in good order. Safety clips and other appropriate fittings will be used at all times |
| 4) Operators will ensure that all unauthorised persons are kept away from the work area, by bounding off the area if practicable. Excavators will be operated in such a manner as to avoid swinging the torque head and any other potentially hazardous practice |
| 5) Installation Operatives will familiarise themselves with the layout of the work area, will avoid working in poor or incomplete excavations and report any hazardous ground conditions to the Site Manager |
| 6) Screw pile sections and other heavy materials will be lifted and moved via mechanical means where reasonably practicable |
| 7) All hand tools will be kept in good order and only used for their design purpose. Faulty/broken/worn items will be replaced |
| 8) Operators are to be in possession of, have read and understood the appropriate torque head operation instruction manual (method statement, also contained within the Site Manual) |
| 9) The customer (or their appointed agent) is to have identified and marked out all known services within the vicinity of the work area. Operators will not carry out any works until the locations of any known services are made clear |



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