

Workshop Service Manual

Combines series

MF7360 - MF7370 BETA



7360-S/N 553900031 - **7360 PL**-S/N 554000079

7370-S/N 564000111 - **7370 PL**-S/N 564100084

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Combines series MF7360 - MF7370 BETA

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Preface

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1 **Introductory notes**

- This manual is divided into sections numbered with two-digit numbers, each section having independent page numbering. For quick reference, these sections have the same identification number and description as the relevant Flat Time Rate Manual.
- The subjects covered and the information sought can easily be found using the index on the following pages.
- The information in this manual was updated on the date shown on the booklet. As AGCO is constantly improving its product range, some information may not be updated due to modifications made for technical or commercial reasons as well as for compliance with legal requirements in the various countries. If there are any inconsistencies, contact our AGCO Sales and Service Networks.

2 Important warnings

- **Warning: Some of the models listed in this manual are not marketed in your country. For more details, contact your dealer.**
- All repair and maintenance work listed in this manual must be carried out exclusively by the AGCO Service Network, in strict compliance with the instructions provided and using, where necessary, the special tools required.
- Anybody who carries out the above operations without scrupulously complying with the instructions shall be held personally liable for any damage caused as a result of their actions.
- The Manufacturer and all the organisations in its distribution chain, including (without limitation) national, regional or local dealers, reject any responsibility for damage due to the abnormal behaviour of parts and/or components not approved by the Manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the Manufacturer. In any case, no warranty of any type is issued or imposed concerning the product manufactured or marketed by the Manufacturer for damage due to abnormal behaviour of parts and/or components not approved by the Manufacturer.

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3 Identification number

Combine	Model identification code
BETA 7360	X5
BETA 7360 PL	X5AL
BETA 7370	X6
BETA 7370 PL	X6AL

Description of combine identification number

a	b	c
*	*	*
5640	5640	00001
d		

a Technical type

d Identification number **564000001**

It is made up of two parts:

- Part 1 (**b**), made up of 4 digits "5640", identifies the technical type (machine model).
- Part 2 (**c**), made up of 5 digits "00001" which increase in numerical order of production and identify the sequential number of the machine model produced.

*5539*5539.. ...*	For the BETA 7360 model
*5540*5540.. ...*	For the BETA 7360 PL model
*5640*5640.. ...*	For the BETA 7370 model
*5641*5641.. ...*	For the BETA 7370 PL model

FreeFlow grain header identification number

7116.. ...	For the 16 ft (m 4.80) model
7118.. ...	For the 18 ft (m 5.40) model
7120.. ...	For the 20 ft (m 6.00) model
7123.. ...	For the 23 ft (m 7.00) model
7125.. ...	For the 25 ft (m 7.60) model

PowerFlow grain header identification number

7018.. ...	For the 18 ft model
7020.. ...	For the 20 ft model
7022... ...	For the 22 ft model

NOTE: The 22 ft PowerFlow header cannot be installed on model X5BL.

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General information

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1 General instructions

Important caution

All repair and maintenance works described in this manual must be carried out only by the AGCO Service Network, strictly complying with the instructions given and using, whenever required, the special tools. Anybody who carries out the above operations without scrupulously complying with the instructions shall be held personally liable for any damage caused as a result of their actions.

Adjustment shims

During any adjustment, select the adjustment shims by measuring them individually with a micrometer and then adding up the values obtained: do not rely on the incorrect measurement of the total shim pack or on the nominal value given for each ring

Rotary shaft seals

For correct rotating shaft seal installation, proceed as follows:

- before fitting the seals, soak them for at least half an hour in the same oil they will be sealing;
- thoroughly clean the shaft and make sure that the shaft working surface is not damaged;
- move the the sealing lip towards the fluid; in the case of a hydrodynamic sealing lip the grooves must face in such a way that, considering the shaft rotation direction, the fluid is taken back towards the inner part of the seal;
- smear a thin layer of lubricant on the sealing lip (oil rather than grease) and fill the gap between the sealing lip and the dust lip with grease on twin lip seals;
- fit the seal in the relevant housing by pressing it or using a drift with a flat contact surface; do not beat it with a hammer or a mallet;
- during driving, make sure the seal is perpendicular to its housing and, when driving is finished, make sure it touches the shoulder;
- to prevent the sealing lip from getting damaged by the shaft, lay down suitable protection when fitting both parts

O-rings

Lubricate O-rings before fitting them in their seats to prevent them from rolling over and twisting during fitting, thus jeopardizing their sealing action.

Sealants

Before laying the sealant on the mating surfaces, prepare them as follows:

- remove any scales with a wire brush;
- thoroughly degrease the surfaces with one of the following cleaning agents: trichloroethylene, oil or a solution of water and soda.

Spring pins

While fitting split spring pins, make sure that their groove is directed towards the effort direction, stressing the pin. Spiral spring pins do not need any orientation during fitting.

Notes on spare parts

Only use **genuine AGCO parts**.

Only genuine parts guarantee the same quality, life and safety as original parts because they are the same as those fitted as standard.

Only **genuine AGCO parts** can offer this guarantee. All spare parts orders must be accompanied by the following data:

- machine model (commercial name) and frame number;
- combine type and number;
- part number of the ordered part, which can be found in the "Spare Part Catalogue", used for order processing.

Notes on tools

The tools that AGCO suggests and describes in this manual:

- have been expressly studied and designed to operate on the AGCO range of combine harvesters;

- are required to get a reliable repair;
- are suitably manufactured and strictly tested to offer efficient and long-lasting work tools.

By using these tools, Repair Personnel will benefit from:

- working under the best technical conditions;
- getting the best results;
- saving time and effort;
- working more safely.

Notes

Wear limit values indicated for certain parts should be considered as recommended values, but not absolutely mandatory. The directions "front", "rear", "right" and "left" referring to different parts are given from the viewpoint of the operator sitting in the driver's seat and facing the same direction as the combine moving forward.

How to move the combine without battery

The cables of the external power supply unit must be connected only to the respective negative and positive cable terminals of the combine using pliers in good working order that will ensure proper and stable contact. Disconnect all circuits (lights, windscreen wipers etc.) before starting the combine.

If functional checks need to be run on the combine's electrical system, only proceed after connecting the power supply unit. At the end of the checks, disconnect all the circuits and switch the power supply off before disconnecting the cables.

2 Safety precautions



WARNING:

PAY CAREFUL ATTENTION TO THIS SYMBOL

This warning symbol points out important messages involving your personal safety. Carefully read all the suggested safety precautions to avoid potential hazards and safeguard your health and personal safety.

In this manual you will find this symbol together with the following key words:

WARNING: For warnings aimed at preventing unsuitable repair work being carried out that may put the operator's safety at risk.

DANGER: For warnings that specifically point out potential hazards for the operator's safety or for other persons directly or indirectly involved.

Avoid accidents

Most accidents and injuries occurring in workshops are due to the failure to comply with some simple and fundamental precautions and safety regulations. For this reason, IN MOST CASES THEY CAN BE PREVENTED: just consider the possible causes in advance and act accordingly with the required caution and care.

Accidents may occur with any kind of machine regardless of how well the machine in question was designed and built.

An alert and cautious mechanic is the best guarantee against accidents.

Strict observance of just one basic safety rule is sufficient to avoid many serious accidents.



DANGER:

Never carry out any cleaning, lubrication or maintenance operation when the engine is running.

Safety precautions

General information

- Strictly comply with the specified maintenance and repair procedures.
- Never wear rings, watches, jewellery, loose or unbuttoned clothing such as ties, torn clothes, scarves, open jackets or shirts with open zips which could get trapped in moving parts. It is recommended that you wear appropriate approved protective clothing and equipment, such as anti-slip footwear, gloves, safety goggles, helmets etc.
- Never carry out any repair work on the machine with someone sitting in the driver's seat unless they are qualified operators assisting with the operation to be carried out.
- Never operate the machine or use the relevant tools from any position other than sitting in the driver's seat.
- Never carry out any intervention on the machine when the engine is running, except when specifically instructed to do so.
- Stop the engine and make sure all pressure has been relieved from hydraulic circuits before removing caps, covers, valves, etc.
- All service interventions must be carried out with the utmost care and attention.
- Service stairs and ladders used in the workshop or in the field should be built in compliance with the safety regulations in force.
- Disconnect the batteries and label all controls to warn that the machine is being serviced. Lock the machine and all the equipment to be lifted.
- Never check or fill fuel tanks, accumulator batteries, or use starting fluid while smoking or near to naked flames, as these fluids are flammable.
- Brakes are ineffective when manually released for service interventions: in these cases, make sure you keep the machine under control using suitable chocks or similar blocking devices.
- The fuel supply gun must always stay in contact with the filler neck: Maintain this contact until the fuel supply stops to prevent sparks due to static electricity build-up.
- Use only the prescribed points for towing the machine. Make the connections with the utmost care: make sure that the relevant pins and/or catches are securely tightened before towing. Never remain near to towing bars, cables or chains that are operating under load.
- To transfer a machine that has broken down, use a trailer or a low loading platform trailer, when available.

- To load and unload the machine from the recovery vehicle, select a flat area providing firm support for the wheels of the trailer or truck. Securely fasten the machine to the platform of the truck or the trailer and lock the wheels as required by the shipping agent.
- For electrical heaters, battery-chargers and similar equipment, only use auxiliary power supplies providing an efficient ground to avoid electric shock hazards.
- While lifting or carrying heavy parts, use hoists and similar equipment with sufficient capacity.
- Pay special attention to anyone who is nearby.
- Never pour gasoline or diesel oil in open, wide and low containers.
- Never use gasoline, diesel oil or other flammable liquids as cleaning agents: use non-flammable and non-toxic commercial solvents.
- Wear goggles with side guards while cleaning parts with compressed air.
- Reduce air pressure according to the local or national regulations in force.
- Never operate the machine in closed areas without proper ventilation.
- Do not smoke, use naked flames or cause sparks when refilling or handling highly flammable materials.
- Do not use flames as light sources when servicing the machine or checking for possible "leaks".
- Move with caution when working under the machine, on the machine or near the machine. Wear the prescribed safety equipment: helmets, special goggles and shoes.
- During checks that are carried out with the engine running, ask an operator to sit in the driver's seat and keep the service technician under constant visual control at any time.
- In the event of service operations that need to be carried out outside the workshop, drive the combine to a flat area and secure it. If work on hillsides cannot be avoided, first secure the machine and move it to level ground, as soon as you can do it within a given safety margin.
- Dented and bent chains or ropes are not reliable: do not use them for lifting or towing. Always use suitable protective gloves when handling chains or cables.
- Chains must be tightly fastened: make sure the fastening device is strong enough to hold the load. No people should stand next to the towing connection, chains or ropes.
- The area for service operations should always be kept CLEAN and DRY. Immediately remove any water deposits or oil stains.
- Do not pile up oil- or grease-soaked rags: they are a major fire hazard. Always place them in a closed metal container. Before starting the machine or an equipment check, adjust and lock the operator's seat. Make sure nobody is standing within the machine or equipment operating range.
- Do not carry any object in your pockets that could accidentally fall into the machine's inner compartments.
- Whenever there is a risk that you might be hit by projecting metal parts and similar objects, wear an eye mask or goggles with side shields, helmets, special footwear and heavy gloves.
- During welding operations, use protective equipment: dark goggles, helmets, special overalls and gloves, and footwear. Dark goggles must also be worn by anyone who is not carrying out the work but is standing near the operator carrying out the welding operations. NEVER LOOK DIRECTLY AT THE WELDING ARC WITHOUT SUITABLE EYE PROTECTION.
- Metal cables, when used, get frayed: always wear suitable protection while handling them (heavy gloves, goggles etc.).
- Handle all parts with the utmost care. Keep your hands and fingers away from gaps, gears and similar dangers. Always wear the approved protection devices, such as safety goggles, safety gloves and shoes.

Starting

- Never run the engine in closed areas without suitable ventilation systems to remove exhaust gases.
- Never put your head, body, arms, legs, feet, hands or fingers near fans or rotating belts.

Engine

- Before removing the radiator cap, loosen it very slowly to relieve pressure from the system. Coolant top-ups must be made only when the engine has stopped or is idling, if hot.
- Never fill up the fuel tank when the engine is running, especially if it is hot, to prevent starting fires in the event of fuel leaks.



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- Never try to check or adjust the fan belt tension when the engine is running. Never adjust the fuel injection pump when the machine is moving.
- Never lubricate the machine when the engine is running.

Electrical systems

- When using auxiliary batteries, remember that the cables on both sides must be connected as follows: (+) with (+) and (-) with (-). Do not short-circuit the terminals. GAS RELEASED FROM BATTERIES IS HIGHLY FLAMMABLE. During recharging, leave the battery compartment open for better ventilation. Never check the battery charge with "jumpers" obtained by laying metal objects on the terminals. Avoid sparks or flames in the area surrounding the batteries. Do not smoke to prevent explosion hazards.
- Before any intervention, check there are no fuel or power leaks: eliminate these leaks before proceeding with the work.
- Never recharge batteries in closed areas: make sure there is enough ventilation to prevent accidental explosions due to the build-up of gases released while charging.
- Always disconnect the batteries before any intervention on the electrical system.

Hydraulic systems

- Fluid escaping from a very small hole can be almost invisible and can be strong enough to penetrate the skin. For this reason, use a piece of cardboard or wood when checking. DO NOT USE BARE HANDS: if a jet of fluid penetrates the skin, contact a doctor immediately. If no immediate medical care is given, severe infections or dermatosis could occur.
- Use suitable instruments to check the system pressures.

Wheels and tyres

- Make sure that tyres are correctly inflated to the pressure specified by the manufacturer. Regularly check possible damages to rims and tyres.
- Stay away from and to one side of the tyre when adjusting tyre pressures.
- Check the pressures only when the machine is unladen and the tyres are cool to prevent obtaining any wrong measurements due to overpressure. Never use parts of recovered wheels as improper welding, brazing or heating could have weakened them and could cause breakages.
- Never cut or weld a rim with a tyre that is fitted and inflated.
- To remove the wheels, secure both the front and rear wheels. After lifting the machine, to prevent it from falling, arrange suitable supports underneath in accordance with the regulations in force.
- Deflate the tyre before removing any object caught in the tread.
- Never inflate tyres using flammable gases as they may cause explosions and injuries to people nearby.

Removal and refitting

- Lift and handle all heavy parts using suitably sized lifting equipment. Make sure all the parts are secured using the appropriate slings and hooks. Use the correct eye bolts. Extra care should be taken if anyone is near the load to be lifted.
- Handle all parts with great care. Do not put hands or fingers between parts. Wear appropriate safety clothing - safety goggles, gloves and shoes
- Do not twist metal chains or ropes. Always wear safety gloves when handling cables or chains.

3 Appropriate use

The combines X5, X5AL, X5BL, X6 and X6AL are designed as self-propelled units with a diesel engine.

The machines are manufactured exclusively for usual agricultural purposes, i.e. for harvesting cereal, seed, rice, maize, soya, etc. by cutting or picking-up the crop, threshing and separating the grains from the ears, delivering the grains in the grain tank and unloading them into the grain wagon.

When operating the machine, make sure the cab doors are shut. The operator and instructor, if present, must remain seated in their respective seats with their seatbelts fastened (the operator should not drive the machine when standing).

The machines may be operated only by skilled personnel, who are thoroughly familiar with all the machine's functions and harvesting techniques.

Machine stability is guaranteed on the following inclinations provided that the ground is firm and the tyres offer sufficient grip:

- 30% (18°) longitudinal and crosswise.

The X5AL, X5BL and X6AL versions, with the levelling system engaged, on reasonably firm terrain, can automatically (or manually) level the machine to horizontal up to the following incline limits of the plane upon which the wheels stand:

- Crosswise 20%
- Longitudinal (only X5BL)
 - 30% driving uphill
 - 5% driving downhill



CAUTION:

The combine may be transported on public roads only with an empty grain tank.

Header types

The combines X5, X5AL, X5BL, X6 and X6AL can use cutting tables sized 4.80 - 5.40 - 6.00 - 7.00 - 7.60 m ("FF" type) or 18 - 20 - 22 ft ("PF" type).

NOTE: In this manual, the term "header/s" signifies both the cutting table and the maize header. The term "cutting table" refers to the assembly consisting of reel, cutting bar, table auger, etc. used to harvest grain, barley, rice, soya, etc. The term "maize header" refers to the assembly consisting of stalk grippers, stripping blades, conveyor chains, etc. used for harvesting maize.

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