AGRO BAG

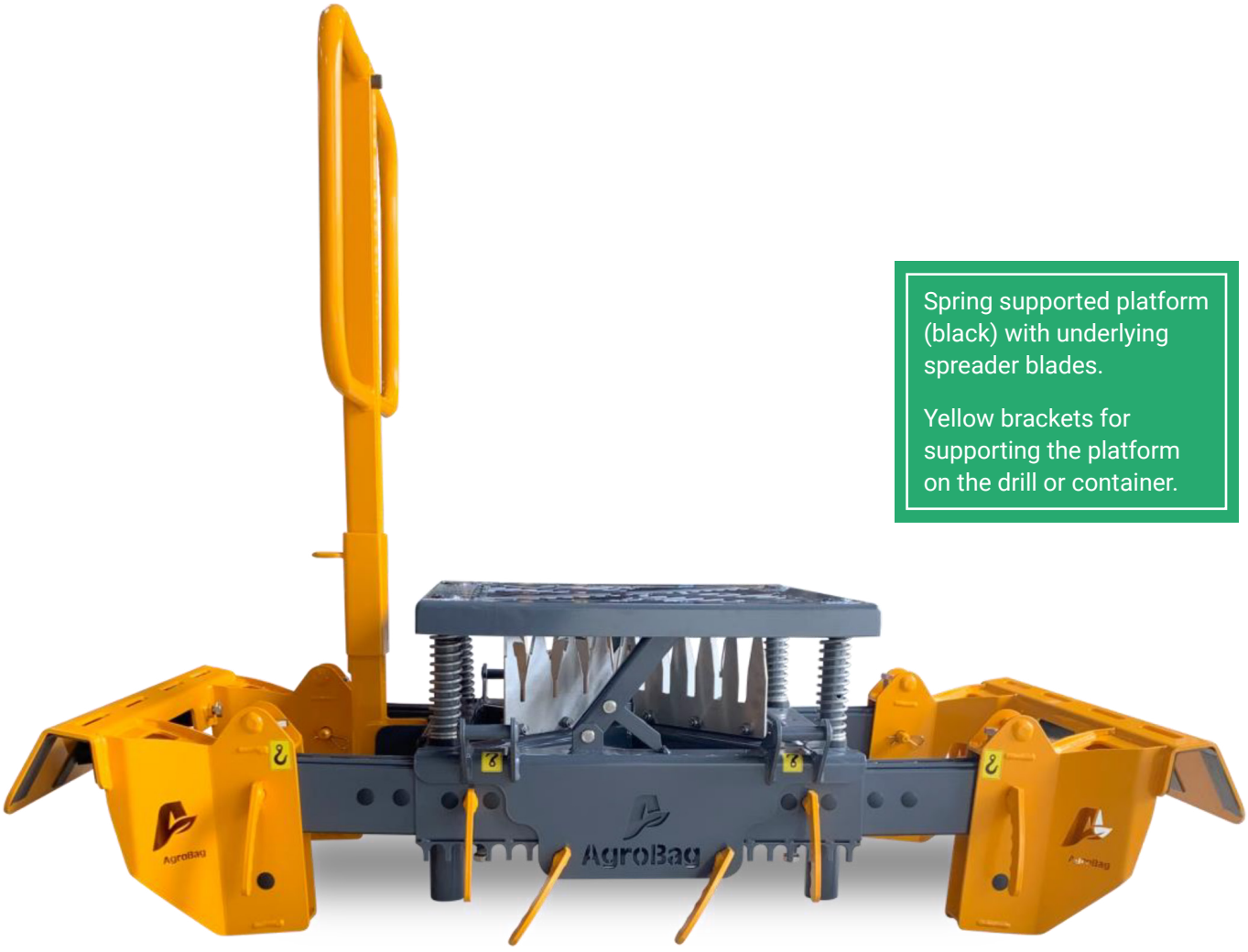
MASKINSIKKERHED
Authorised occupational health and safety advisor

RISK ASSESSMENT

Date: January 2022
Case:S-210526-3
Prepared by THR
V03

Manufacturer responsible: Agro-Bag A/S
Gummersmarkvej 17
4632 Bjæverskov

Machine for cutting big bags, containing chemical fertilizers and the like.
Model: Agro-Bag



Spring supported platform (black) with underlying spreader blades.

Yellow brackets for supporting the platform on the drill or container.

Lejrvej 17 • 3500 Værløse
Tel..: +45 44 47 31 56

info@maskinsikkerhed.dk
www.maskinsikkerhed.dk

CVR: 30553675

Odense department

Drejerbanken 16
5492 Vissenbjerg

Tel.:+45 88 24 84 04
odense@maskinsikkerhed.dk

Esbjerg department

Kongensgade 49 B
6700 Esbjerg

Tel.: +45 66 12 12 01
esbjerg@maskinsikkerhed.dk

Esbjerg department

Kongensgade 49 B
6700 Esbjerg

Tel.: +45 66 12 12 01
esbjerg@maskinsikkerhed.dk

TABLE OF CONTENTS

1. INTRODUCTION

This risk assessment of Agro-Bag (hereinafter referred to as "the machine") has been carried out in accordance with the provisions of the Machinery Directive 2006/42/EC and the standard DS/EN ISO 12100:2011 Safety of machinery - General principles for design - Risk assessment and risk reduction.

Machinery safety has not carried out calculations or verification of calculations of the strength of the mechanical design. Therefore, the validity of this risk assessment assumes that the structure has been designed and constructed in a good engineering and workmanship manner and following the relevant applicable design standards.

2. CONCLUSION

As designed and constructed, the machine can be considered to meet the relevant equipment requirements of the Machinery Directive and can be CE marked.

3. BASIC INFORMATION

3.1. Company, manufacturer responsible

Company name:	Agro-Bag
Address:	Gummersmarkvej 17, 4632 Bjæverskov.

3.2. Content of the risk assessment

This risk assessment includes an identification of the relevant sources of danger on the machinery, an assessment of the hazards presented by the sources of danger, and an indication of how persons on and around the machinery are protected against these hazards.

3.3. Limitations of the risk assessment

The following operational phases are covered by this risk assessment:

Operational phase	Treated (Yes/No)	Justification
Transport	Yes	
Collection	Yes	
Installation	Not applicable	
Commissioning	Yes	
Use	Yes	
Phasing out	No	
Dismantling	No	

The following operational situations are addressed in this risk assessment:

Operational situation	Treated (Yes/No)	Justification
Adjustment	Yes	
Testing	Yes	
Training/Programming	No	Not applicable
Conversion	Yes	
Start	No	Not applicable
All operating modes	Yes	
Supply of materials	Yes	
Removal of products	Yes	
Stopping	No	Not applicable
Stopping in case of emergency	No	-"-
Return to operation after blocking	Yes	
Restart after unscheduled stop	Yes	
Troubleshooting	Yes	
Cleaning, order	Yes	
Preventive maintenance	Yes	
Corrective maintenance	Yes	

4. THE MACHINE, PRODUCTION AND OPERATION

The Machine

Operational situation	Spraying the bottom of big bags for the contents of the big bag to pass into an underlying container or seed drill.
Main components	Spring platform for big bags
Function, description	The big bag is placed suspended in a front loader on a spring-loaded platform. The weight of the big bag is the force that pushes the bottom of the big bag down against the fixed blades placed under the platform.
Place of use	Agriculture.
Accident history	Unknown.

5. DETERMINING THE LIMITS OF THE MACHINE

5.1. Generalities

The risk assessment is carried out according to DS/EN ISO 12100:2011 Safety of machinery - General principles for design - Risk assessment and risk reduction with regard to the definition of the limits of the machine and the identification of sources of danger (sections 5.3 and 5.4 of the standard).

Risk estimation and risk assessment have been carried out by identifying relevant points in Annex I of the Machinery Directive.

The validity of the risk assessment is subject to the following conditions

5.2. Limitations of use

The validity of the risk assessment is subject to the following conditions:

Operating mode	Description
Operating mode 1	The platform support is adapted to the container frame on which the Agro-Bag will be placed- (See mounting instructions)
Operating mode 2	Cleaning - Remove residues from bulk bags. Description

Intended use	Description
	Emptying Big-Bag's with fertilizer. Spraying the bottom of the Big-Bag. The Big-Bag is carried suspended in a front loader during emptying.

Predictable abuse	Description
Abuse 1	Other use is not foreseeable

Groups of people	Expected level of education and physical characteristics of users
Operators	Farmer
Maintenance staff	Farmer

Groups of people near the machine	Description
Operators of other machines	Farmers
Other employees	Farmers

Maskinsikkerhed ApS estimates that operators will not have the opportunity or incentive to use the machine for any purpose other than that intended.

It is not permitted to dismantle protective devices unless this is done in connection with repair or service.

5.3. Time limits

The validity of the risk assessment is subject to the following conditions:

Subject	Description
Service life of the machine and machine components	20 years
Service life of machine components	20 years
Recommended inspection intervals	Annually

5.4. Other restrictions

The validity of the risk assessment is subject to the following conditions:

Topic	Description
Use environment	Agriculture - Field or workplace near farm buildings

6. IDENTIFICATION OF SOURCES OF DANGER

Sources of danger must be identified at all stages of the machinery's operation and in all its operating situations. In this risk assessment section 7.1, the sources of danger and the safety solutions chosen are listed under the relevant essential health and safety requirements (EHSRs). It is indicated here if the sources of danger occur only in certain operating phases and/or in certain operating situation.

7. RISK ASSESSMENT TABLE

Risk analysis:

The table indicates whether a given risk exists on the machinery:

- the source of danger is not relevant

+ There is a potential risk at the source of danger

For each source of danger marked with "+", a file number is indicated in the table. For each potential risk, a description of the source of danger, the risk, the safeguarding solution is chosen and an assessment of the residual risk, if any, is given. The chosen solution is indicated for each residual risk, e.g. instructions for use, personal protective equipment, etc.

ESSENTIAL SAFETY AND HEALTH CONDITIONS (SSC) for machinery and safety components referred to in Annex I of the Machinery Directive		Danger source (-/+)	Annex no.	Comment
1.1 General comments				
1.1.2. a) Special use		+	1	
1.1.2. b) Choice of solutions		+	2a	
1.1.2. c) Anticipated abuse		+	2b	
1.1.2. d) Reduced freedom of movement due to personal protective equipment		-		
1.1.2. e) Tools and special equipment provided		-		
1.1.3. Materials and products		+	3	
1.1.4. Lighting		+	4	
1.1.5. Design of the machinery for handling		+	5a	
1.1.6. Ergonomics		+	5b	
1.1.7. Workplaces		-		
1.1.8 Seats		-		
1.3 Protection against mechanical risks				
1.3.1 Risk of loss of stability		+	6a	
1.3.2 Risk of breakage during use		+	6b	
1.3.3 Risks in connection with use with falling and ejected objects		+	6c	
1.3.4 Risks in connection with surfaces, edges and corners		+	7	
1.3.5 Risks associated with combined machinery		-		
1.3.6 Risks associated with differences in operating conditions		-		
1.3.7 Risks associated with moving parts		+	8	
1.3.8 Choice of protection against risks caused by moving parts	2: Moving parts involved in the process	+	8	
1.3.9. Risks related to the uncontrolled movements				
1.4 Characteristics of guards and protective equipment				
1.4.1 General requirements. Access and durability				
1.4.2 Special requirements for shielding	1: Fixed shielding			
1.5.4 Mounting errors				

1.6	**Maintenance**		+	9	
1.6.1	Maintenance of the machine		+	9	
1.6.2	Access routes to operating and servicing areas		+	9	
1.6.3	Separation of energy sources (repair switch)		+	9	
1.6.4	Action by the operator		-		
1.6.5	Cleaning of internal parts		+	9	
1.7.	**Information**	**Machine sign**	+	10	
1.7.4.	**User manual**			11	
1.7.4.1 Overview	a. language		Danish		
	b. original user manual		yes		
	c. Anticipated abuse		-		
	d. non-professional users		-		
1.7.4.2 Content	a. manufacturer's name and address		Agro-Bag		
	b. designation of the machine		Agro-Bag		
	c. declaration of conformity		yes		
	d. general description		yes		
	e. drawings and diagrams		N/A		
	g. description of intended use		yes		
	h. warning of anticipated abuse		yes		
	i. assembly, installation and connection instructions		yes		
	j. installation and assembly instructions with regard to noise and vibration		yes		
	k. instruction on use and training of operator		yes		
	l. information on design, protective measures and additional protective measures taken		yes		
	m. instruction on the protective measures to be applied by the user		yes		
	o. information on measures to be taken during dismantling, out of service, during tests or in the event of foreseeable failure		yes		
	p. instructions for safe transport, handling and storage		yes		
	q. accident or failure procedures		yes		
	r. adjustment and maintenance carried out by the user		yes		
	s. instruction in safe adjustment and maintenance		yes		
	u. airborne	Measured sound pressure level dB (A)	yes	N/A	

7.1. Selected security solutions

All items in the risk assessment form for each source of danger are structured as follows:

Source of danger/dangerous area:	Description of the source of danger and/or the dangerous area
Dangerous incident:	Indication of the dangerous situation and the dangerous event caused by the source of danger/dangerous area.
Risk Reduction:	Red text: indication of the conditions which the manufacturer must modify in the design/ensure are satisfactory before putting into service or continuing to use the machinery. Black text: indication of adequate measures already taken before the preparation of this risk assessment. These measures reduce the risk associated with using the part of the machinery covered by the annexes concerned to an appropriately low level: no further action is required here. The red or black text indications are based on a risk estimate and a risk assessment. Where there are specific recommendations for individual operating phases and/or operating situations, this is specifically indicated.
Referral:	Indication of the standards and the actual points from these standards which have been used as a basis for specifying the required risk reduction. References are given only for points where the general reference to the standards in point 8.2 is not considered sufficient.

Annex	SSC no.	SSC subject
1	1.1.2.a	Special use

Source of danger/dangerous area:	Squeezing, Big-bag dropping
Risk reduction:	The bag is mounted on the Agro-Bag with a hook in a front loader - or another loading machine. The bag is removed only after it has been emptied. While lifting the big bag and emptying it, the loader driver stays in the driver's seat and is out of the danger area.
Referral:	Pursuant to the Executive Order on the use of technical aids, the following applies: § 5. A technical device used in work performance must be suitable or adapted for this purpose so that its use is fully safe and healthy. § 9. A piece of technical equipment may be used only for the work functions and under the conditions for which it is suitable, so that the resulting restrictions are not exceeded to the detriment of safety or health. The instructions for the use of the loading machinery must indicate whether a machine is designed for lifting loads. 'Lifting loads' covers, cf. the Machinery Directive: 'lifting operation' means an operation which involves the movement of load units consisting of goods and/or persons and which, at a given moment, involves a change of level. 'Lifting of loads' thus covers both the lifting of a freely suspended load suspended by a hook or the like and the lifting of loads on, for example, pallet forks or by means of a grab The Danish Working Environment Authority is of the opinion that many excavators (but not all) are designed for lifting loads, as the standard for excavators has covered these requirements since 1996. The Danish Working Environment Authority does not consider that the rules on the use of hoists and winches (notification, test load, crane log, annual main inspection, and 10-year main inspection) apply to loaders and other earthmoving machines used for lifting loads in connection with the normal work of the machines, e.g., when laying pipes, etc., provided that there are no persons in the immediate vicinity of the load when it is being lifted, transported and set down.

2 a 1.1.2.b Choice of solutions

Source of danger/dangerous area: Clamping.

Dangerous incident: Clamping between the underside of the bag platform and the machine frame.

Risk Reduction: The springs cannot be compressed beyond a minimum free space of about 20 cm - no risk of jamming.

In use, the bag is suspended from the hook of the loader.

Persons should not stand near the machine.

2 b.X 1.1.2.c Anticipated abuse

Source of danger/dangerous area: Contact with the “carving knives”.

Dangerous incident: Removing residual bag material from knives.

Risk Reduction: The knives are not immediately available.

At least 80 kg of weight must be on the platform to be pressed down enough for the knives to come 2 cm above the platform surface.

The platform can be secured in a fixed position with bolts so that they are prevented from moving up above the surface of the platform. (See user manual).

3. 1.1.3 Materials and products

Source of danger/dangerous area: A type of big bag is used, which is made of materials that are not suitable for spraying.

When lifted, the material is lumpy and does not run out of the liner.

Risk Reduction: It is possible to break up lumps by repeated lifting/lowering movements.

If the material of the big bag is not suitable for spraying with the machine, the big bag can be moved to a position next to the machine where the big bag can be manually sprayed with a long-handled knife.

4 1.1.4 Lighting

Source of danger/dangerous area: Rare overview for the working area.

Dangerous incident: Incorrect location of the big bag.

Risk Reduction: Loader work lights.

5 a 1.1.5 Design of the machine with regard to handling
5 b 1.1.6 Ergonomics

Risk Reduction: The parts that make up the Agro-Bag are so heavy that they can only be moved using lifting equipment.

6 a 1.3.1 Risk of stability loss

Risk Reduction: During emptying on the Agro-Bag, the big bag will be suspended from the hook of the loader.

There should be no persons around as long as there is a full bag on the Agro-Bag.

7 1.3.4 Risks in connection with surfaces, edges and corners

Dangerous incident: Wounds and tears on contact..

Risk Reduction: Corners, edges and pointed elements are rounded.

8 1.3.7 Risks associated with moving parts

Risk Reduction: See points 2a and 2b.

8 1.3.7 Choice of protection against risks caused by moving parts

Risk Reduction: See points 2a and 2b.

9 1.6 Maintenance of the machine

Risk Reduction: Maintenance and securing of the machine during servicing is described in the instruction manual.

Marking of the machine

Manufacturer:	Agro-Bag A/S Gummersmarkvej 17 4632 Bjæverskov
Machine:	Big-Bag splitter and lumber
Series no.	2021
Year of manufacture:	2021
Net weight:	205 kg

11 1.7.4 User manual

Installation instructions are available in English and Polish.
Operating instructions are available in English and Polish.

8. EC DIRECTIVES AND STANDARDS

8.1. EC Directives

The machine is covered by the Machinery Directive 2006/42/EC.

The following conditions are the basis for the application of this EC Directive:

Agro-Bag is

» an assembly of interconnected parts, of which at least one is movable.

» The parts are interconnected to function as Big-Bag openers and emptiers.

Given the above, the machine has been assessed according to the requirements of the Machinery Directive - 2006/42/EC, where the power input is the weight of the big bag when placed on the Agro-Bag.

9. DOCUMENTATION BASIS

In addition to the Machine Safety Inspection, the following documents form the basis of the risk assessment:

» Description and user manual from Agro-Bag a/s

» User manual from Agro-Bag

» Assembly instructions from Agro-Bag.

Agro-Bag A/S	Machinery Directive 2006/42/EC Annex II A	Page 1 of 1

10. EC DECLARATION OF CONFORMITY

Agro-Bag A/S as the manufacturer responsible declares

Gummermarksvej 17
4632 Bjæverskov

- that the following machine: Agro-Bag splitter and big bag logger

Year of manufacture: 2021

- consisting of A frame for mounting on a fertilizer spreader or on a container. The frame has a spring supported platform that covers fixed spreader blades

- equipped for Blowing up and emptying of big bags up to 1000 kg.
The big bag is fed and placed on the frame with a front loader or another loading machine.

- are manufactured in accordance with the relevant health and safety requirements of the Machinery Directive 2006/42/EC.

Company (stamp)

..... Bjæverskov, Date: .....

Signature
Mads Birkedal

Technical Manager at Agro-Bag A/S and authorized to sign the EC Declaration of Conformity