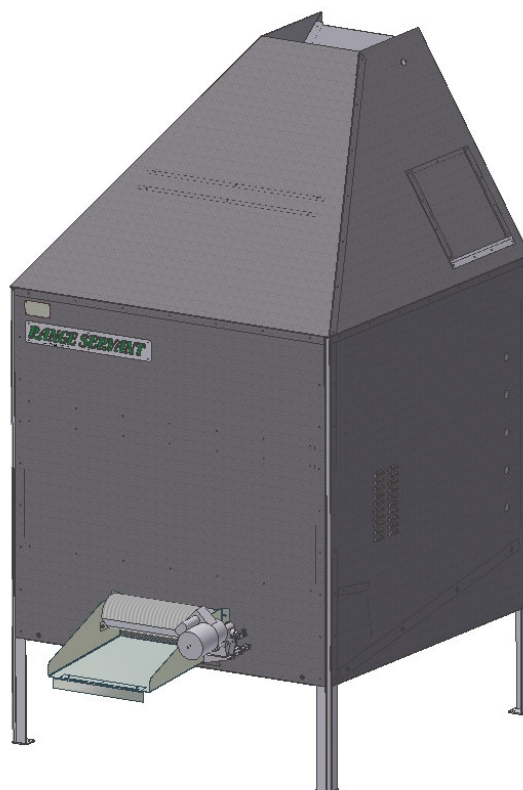




ENGLISH

RANGE SERVANT[®]

<http://www.rangeservant.com>



INSTRUCTION MANUAL HOPPER

HOPPER-4

HOPPER-11

HOPPER-15

HOPPER-22

HOPPER-30

HOPPER-50

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1 General information

1.1 Preface

We congratulate you to your new Range Servant machine. You have made a good choice! Not only have you chosen an excellent state-of-the-art Hopper with little demands on maintenance but you have also chosen quality. Quality is ensured with the help of modern production techniques, carefully chosen materials and the responsible workmanship of our staff.

This Instruction Manual contains all the information necessary to fully understand the maintenance and operation of the machine.

Study the User's Guide carefully before using the machine. If these instructions are not followed, persons using the machine might be injured or the equipment itself be damaged. In many cases, following the instructions is a necessary condition for Range Servants' warranty to be applicable. Every person operating the machine must read these instructions.

No part of this publication may be reproduced without the written authorisation of Range Servant.

We offer a limited one-year warranty on our Hoppers. This does not include the normal wear and tear. Study the warranty conditions carefully and keep them in a safe place. If you have any questions, or if problems should arise, please contact your Range Servant representative.

ONE-YEAR WARRANTY

Range Servant AB hereby undertakes to provide a warranty on material and function on the RANGE SERVANT dispenser for one year from the date of delivery. The guarantee does not cover payment systems and wearing parts. This engagement applies to repaired or replaced components for a period of three months. This undertaking only applies to the original purchaser. It also applies only to shortcomings of those parts, which the manufacturer verifies after due inspection. Repairs or replacement of parts may only be carried out by a representative authorised by the manufacturer. The manufacturer also guarantees that the equipment delivered matches the product description supplied. **THE UNDERTAKINGS SPECIFIED IN THIS AGREEMENT CONSTITUTE THE MANUFACTURER'S SOLE OBLIGATION TOWARDS THE PURCHASER. THE MANUFACTURER IS IN NO WAY RESPONSIBLE FOR ANY UNDERTAKINGS OUTSIDE THE FRAMEWORK OF THIS WARRANTY CERTIFICATE.** Neither is the manufacturer responsible for any undertakings given by any outside person during the sales negotiations. The warranty agreement does not apply to equipment that has been repaired or replaced by persons/companies not authorised by the manufacturer. The manufacturer's warranty undertaking does not apply if the equipment is used incorrectly, if it has been damaged through improper maintenance or accidents or if it has been handled in a way not specified in the manual which is supplied with the dispenser upon delivery. The manufacturer is also free from financial liability for any type of injury that may arise in connection with the sale and repair of the equipment and from injuries to third parties in conjunction with its use.

1.2 EC Declaration of Conformity

In accordance with the Machine Directive 89/392/EEC, annex IIA.

The Manufacturer: **RANGE SERVANT[®]**
Range Servant AB
Skallebackavägen 11
SE- 302 41 HALMSTAD
Sweden

The Representative:

(To be filled out by a representative established within the EU)

.....
Company

.....
Address

.....
Telephone

Declare that:

Hopper
Machine

.....
Type

.....
Serial no., manufacturing no. etc.

A) is in conformity with Council Directive 89/392/EEC of 14 June 1989 concerning approximation of the laws of the Member States relating to machines in particular as referred to in Annexe I to this Directive concerning essential health and safety requirements in connection with the design and manufacture of machines, as amended by Council Directive 91/368/EEC of 20 June 1991 on the amendment of Directive 89/392/EEC concerning approximation of the laws of the Member States relating to machines;

B) (if applicable)
are manufactured in accordance with the following regulations, directives etc.:.....;

C) (if the requirements under A have been fulfilled) that the harmonised standards 292-1, 292-2 and 292-2A (or parts thereof) have been applied

D) (if applicable) are manufactured according to the following national standards and technical specifications:.....

Halmstad,
Date

Elvis Knez
President Signature

1.3 Description

1.3.1 Hopper

The Hopper can be added to your existing dispenser for additional capacity or can be integrated into a complete, automated system - the Range Servant Ball Management System.

1.3.2 Ball Management System

Range Servant can deliver a complete, flexible Ball Management System adaptable to any kind of driving range requirements. The Ball Dispenser can be combined with the work-efficient, environment friendly Ball Washer. The Ball Washer in turn can be connected to the Elevator, the Conveyor Belt or the Blower for the transport of clean, undamaged balls from Washer to Dispenser. The system also includes a Ball Picker machine picking up used balls from all over the driving range. Thus the circle is closed and manual work reduced to a minimum.

By applying our extensive know-how to the specific problems of every driving range we are able to offer tailor-made solutions.

1.4 Identification

When contacting Range Servant, please identify your machine with the help of the information contained in the identification plate. The identification plate is well visible and firmly attached and contains the following information:

- Name and address of the manufacturer
- CE-marking
- Designation of series or type of machine
- Serial no., if any
- Year of manufacture

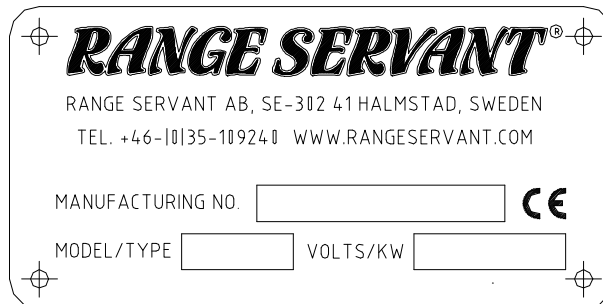


Fig. 1: Product identification plate

1.5 Technical specifications

General *		Hopper 4	Hopper 11	Hopper 15	Hopper 22	Hopper 30	Hopper 50
Capacity [balls] [up to]		4000	11000	15000	22000	30000	50000
Dimensions:							
Height [mm] /([in])		1005 (39.6)	1582 (62.3)	2307 (90.8)	2307 (90.8)	2307 (90.8)	2307 (90.8)
Height with elevator [mm] /([in])			1915 (75.4)	2481 (97.7)	2481 (97.7)	2481 (97.7)	2481 (97.7)
Width [mm] /([in])		1012 (39.8)	1004 (39.5)	1004 (39.5)	1259 (49.6)	1524 (60)	2036 (80.2)
Depth without outfeed [mm] /([in])		760 (29.9)	755 (29.7)	755 (29.7)	1256 (49.6)	1524 (60)	1536 (60.4)
Depth with outfeed [mm] /([in])		1215 (47.8)	1210 (47.6)	1210 (47.6)	1710 (67.3)	1980 (78)	2030 (80)
Weight, with balls [kg]		220	510	685	980	1320	2180
Weight, without balls, with outfeed [kg]		52.5	56.5	67.5	77.5	87.5	130
Weight, without balls, without outfeed [kg]		40	44	55	65	75	105
Electric system:							
Mains voltage [V, 50/60 Hz]		230/115	230/115	230/115	230/115	230/115	230/115
Control voltage [V, DC]		12	12	12	12	12	12
Effect, outfeed motor [W]		70	70	70	70	70	70
Operating Conditions:							
Operating Temperature [°C] /[°F]		+2 - +50 (+35- +122)					
* Elevator is not included							



Fig. 2: Hopper-11 and Hopper-22 with elevator

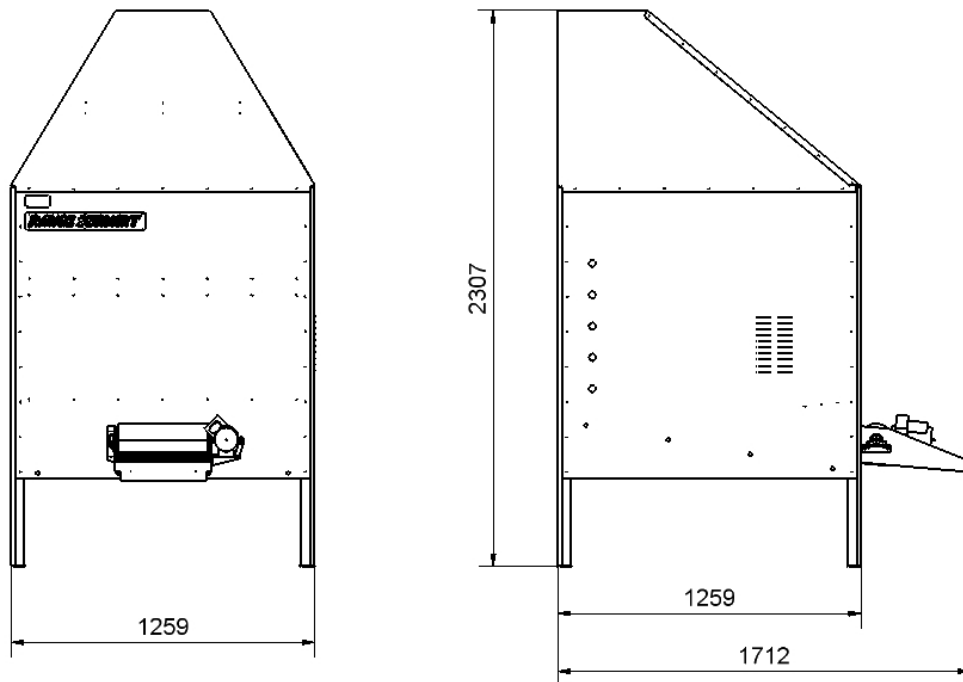


Fig. 3: Hopper-22

The level of airborne noise has been measured for an identical machine under normal operating conditions.

The values indicate the sound pressure level measured 1 m from the sides of the machine and 1,6 m from the floor or access platform.

Sound pressure at the machine (dB, Lin)	XX	XX	XX	XX
Sound pressure at the machine (dB, A)	XX	XX	XX	XX

The manufacturer reserves the right to alter any details of the products without prior notice.

Patents: AU 2445699, USA 6371330, CN 99803416.9, HK 01104534.4

Patent applications: EUROPE 99903992.8, CA 2318910, SE 9800187-8

2 Safety

2.1 General

Safety measures are a combination of measures taken by the manufacturer when designing and building the machine and measures that have to be taken by the user.

The machine has been designed to function for its intended purpose. It has been designed and manufactured in such a way that configuration and maintenance can take place with the least possible risks to the operator, provided such work is carried out according to the instructions laid down in the User's Manual.

The objective of the safety measures is to eliminate all accident hazards during the operational life of the machine which also includes the assembly and dismantling of the machine, including any hazards arising as a consequence of such abnormal circumstances as can be anticipated.

Accessories and spare parts that have not been approved by Range Servant can lead to personal injuries and/or equipment damage and affect the operational reliability of the machine. For the sake of safety you should therefore exclusively use accessories and original Range Servant spare parts recommended by Range Servant.

Such accessories and spare parts are specially intended for the machine and are approved by us with regard to safety.

All Range Servant retailers keep accessories and spare parts at your disposal along with competent advice. They also have the technical qualifications necessary for installing your machine and are informed about what technical changes are authorised.

Damage caused by the use of accessories and spare parts not having been approved by Range Servant and damage due to unauthorised technical modifications are not covered by the warranty obligation.

2.2 Conformity with mandatory requirements

The Range Servant ball management machines fulfil the personal safety requirements of the EU Machine Directive 89/392/EEC as amended by Directives 91/368/EEC, 93/44/EEC and 93/68/EEC, with a special reference to Annex I of the Directive concerning essential health and safety requirements in connection with the design and manufacture of machines, as amended by Directive 91/368/EEC. Furthermore the harmonised standards 292-1, 292-2 and 292-2A (or parts thereof) have been applied.

The electrical equipment fulfils the safety provisions laid down in the EU low voltage directive 73/23/EEC, as amended by directive 93/68/EEC.

2.3 Remaining risks

There are warning signs serving as a reminder and warning to the user of any remaining risks, i.e. risks that we have not been able to eliminate, or sufficiently minimise, in our design and against which technical safety measures do not provide complete, or sufficient, protection. The warning signs shall be written in the local language and, on request, in the language understood by the respective operator. The signs are yellow with black characters. They are big enough to be readable from a distance of three meters.



Fig. 4: Warning signs on front hatch

- Always disconnect the power supply to the machine before carrying out maintenance or service work. The mains switch is located in the control box in the lower right hand corner of the printed circuit board.



Fig. 5: Warning signs in control box

- Never touch the circuit board or other electrical components in the control box. They can be current conducting and cause injury to person and/or equipment damage
- Mechanical or electrical alterations may only be undertaken in consultation with Range Servant.

2.4 Authorised use

The ball-dispensing machine may only be used for the distribution of golf balls. For the machine to operate properly, the balls must be clean and undamaged or else they may get stuck and cause machine failure.

Distribution of balls may only start provided the machine has been installed according to the instructions contained in this Manual.

2.5 Unauthorised use

Using accessories or spare parts not recommended by Range Servant might cause personal injury and/or equipment damage and affect the operational reliability of your ball dispenser. For safety reasons, use only those components recommended by us. They are intended for your machine, they have been chosen for safety reasons and they are approved by the manufacturer.

Damage caused by the use of accessories and spare parts not having been approved by Range Servant or damage due to unauthorised technical changes are not covered by the warranty obligation.

2.6 Emergencies

2.6.1 Fire

Water shall be used as an extinguisher in the event of fire, except if the fire is located in the electric equipment, where a carbon dioxide extinguisher must be used.

2.7 Operational reliability

For trouble-free operation and long service life the instructions below should be followed:

- Place the machine on a firm and level surface.
- Never strain the machine by loading it with more balls than recommended. The loading capacity for your machine is stated in the Technical Specifications.
- Make sure that the electric box is always properly shut and covered. Moisture and water can damage the electrical components.
- When cleaning inside the hopper never spray water directly onto the electric motor and connector.

3 How to use the Hopper

3.1 Necessary qualifications

Due to the complex design and operation of the machine the person carrying out service and maintenance work must have the necessary qualifications. He is required to have attended a training course, in the form of a comprehensive study of the Instruction Manual, followed by a written statement to the fact that he has well understood its contents.

If the person has to be absent from work for more than three months, training has to be repeated.

4 Design and function

4.1 General

The machine is intended for use as a golf ball storage. It consists of a ball magazine and is inside fitted with two plates on two levels for load reduction and, at the bottom, a grid.

The grid consists of a number of ball ducts, arranged next to each other and ending above a conveyor belt transporting the balls to the ball chute.

All interior surfaces are inclined so that the balls are continuously flushed downwards. The lower level allows for damaged balls and debris to be sorted out.

All essential parts of the Hopper are manufactured of stainless steel, rust protected steel or aluminium.

The Range Servant Hopper has been designed in order to provide driving range owners with a long-lasting, reliable, practical and economic golf ball management system.

4.2 Description of components

4.2.1 The function of the hopper outfeed mechanism

The lowest level inside the hopper consists of an inclined grid.

The balls run through the opening at the front.

The automatic outfeed mechanism allows control of the amount balls passed towards the other machines in the system, as blower.

The roller brush chamfered side makes that the balls can pass below it.

The sensor controls the rotations of the brush.

4.3 Main Components

4.3.1 Hopper with outfeed mechanism

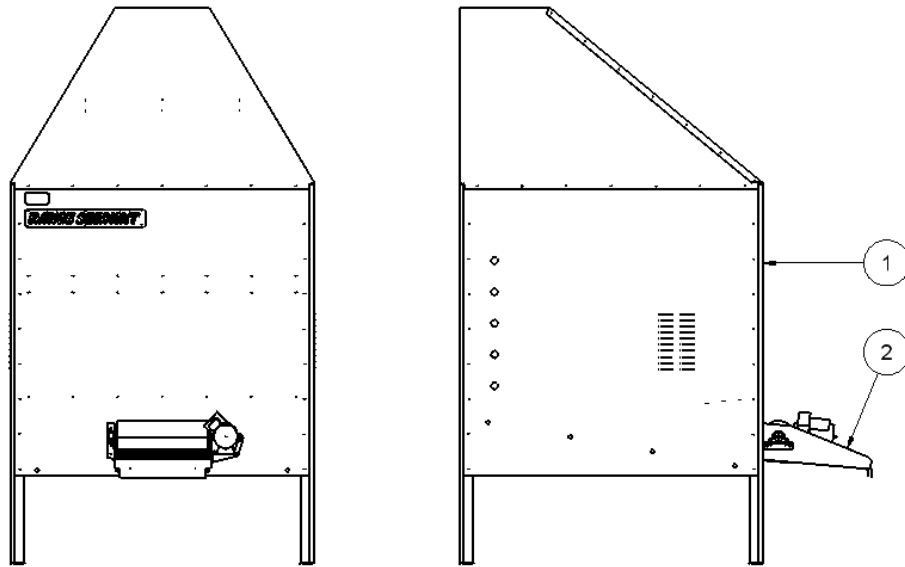


Fig. 6: Hopper with outfeed mechanism

Pos.	Designation
1	Hopper
2	Outfeed mechanism

4.3.2 Hopper

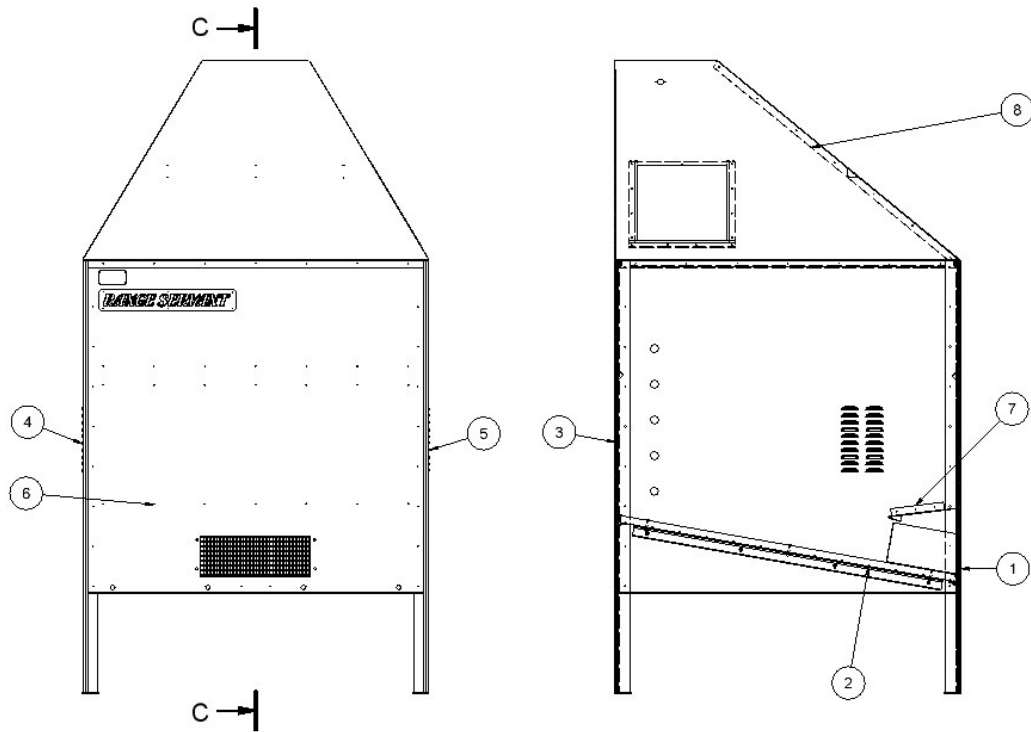


Fig. 7: Hopper

Pos.	Designation
1	Leg
2	Grid
3	Back sheet
4	Side sheet / Left
5	Side sheet / Right
6	Front sheet
7	Inner sheet
8	Top sheets

4.3.3 Outfeed mechanism

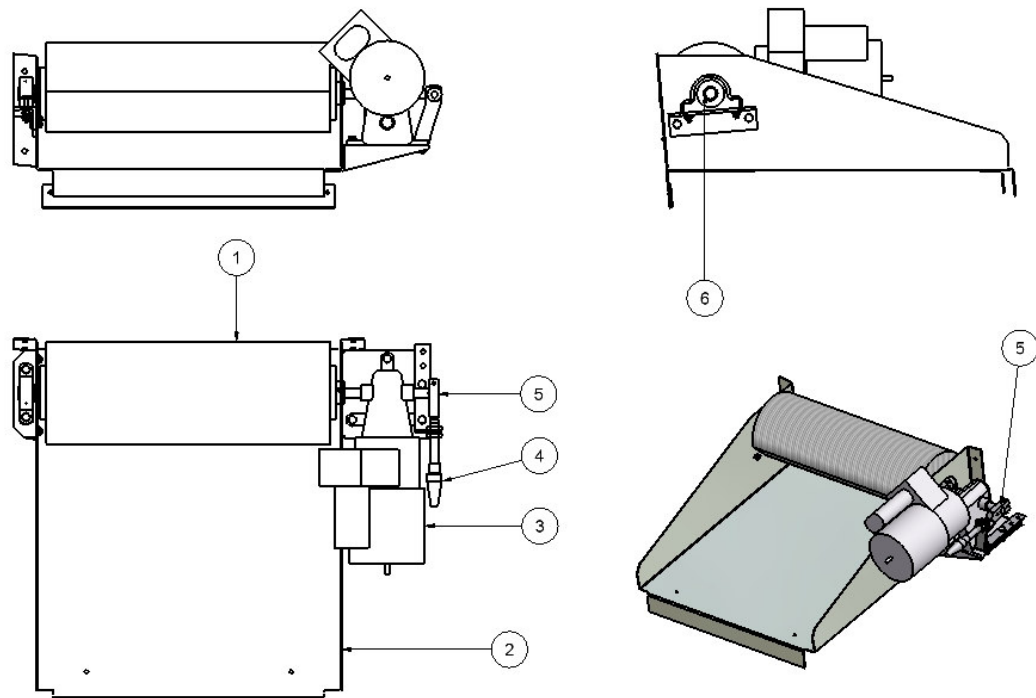


Fig. 8: Outfeed mechanism

Pos.	Designation
1	Brush
2	Hopper outfeed sheet
3	Motor
4	Sensor
5	Eccentric
6	Bearing

5 Maintenance

5.1 General

Range Servant will provide accessories and original spare parts together with competent advice.

Maintenance carried out correctly minimises defects and ensures maximum service life and reliable operation. Any malfunctions are detected at an early stage and are therefore easily corrected. Regular maintenance minimises defects and equipment breakdown. The following maintenance instructions only refer to the most common problems and their causes.

5.2 Periodical maintenance

5.3 Maintenance intervals and instructions

Maintenance intervals:

1. After 300 operating hours
2. Once every month
3. Once every golf season

Maintenance intervals and instructions		1	2	3
1	Machine interior and outfeed			
1.1	Tighten the fixation bolts of the motor.		X	
1.2	Lubricate the bearings with ordinary lubricating oil.		X	
1.3	Check the roller brush, if there are grooves, to be replaced.			X
1.4	Empty the machine, sort out worn or damaged balls, stones and grit etc and clean the inside with normal clean water. (Do not spray water directly onto the electric motor.)			X
1.5	Check the mat inside, on the bottom of the hopper. If there are no mat or the old one is damaged, it must be replaced, otherwise the balls can damage the bottom of the hopper.			X

Fig. 9: Maintenance intervals

5.4 Troubleshooting and repair

Although the operation of the machine is most reliable, problems may arise for various reasons.

Attention!

To reduce the time spent on troubleshooting, always start by checking that cables and connections are clean and tightened.

SYMPTOMS	POSSIBLE DEFECT	CORRECTIVE MEASURES
No balls coming out from the hopper	→ The hopper is empty.	→ Check / start the filling system as washer-elevator.
	→ The power supply is not connected	→ Connect the machine to the power supply.
The hopper delivers too many balls	→ The roller brush damaged, big grooves on it.	→ Replace the roller brush.
	→ Wrong adjustment for the roller brush position when stops.	→ Adjust the brush position so that when stopped, balls can not pass below it.
The hopper delivers too many balls.	→ Defect inductive sensor.	→ Replace the sensor.

Fig. 10: Troubleshooting for hopper with outfeed

6 Installation

6.1 Factory testing and configuration

The hoppers are always tested before delivery to the customer. On this occasion all the parameters of the control system are adjusted according to the customer's wishes.

Our objective when carrying out this final check is to verify that the product corresponds on all accounts to the requirements laid down by the customer when ordering and to prevent defective products from being brought onto the market.

6.2 Installation of the hopper

For trouble free operation, place the hopper on a firm and level surface.

We recommend that the machine be located under cover .

7 Spare parts

In this chapter you will find detailed drawings of the ball dispenser showing the location of the different spare parts. The tables accompanying the drawings contain information about spare parts number and designation and the quantity of each spare part installed per machine model.

()= Optional accessories are marked with a parenthesis around the digit representing quantity.

- = The alternative marked with "-" depends on the customer's choice of equipment.

7.1 Outfeed mechanism

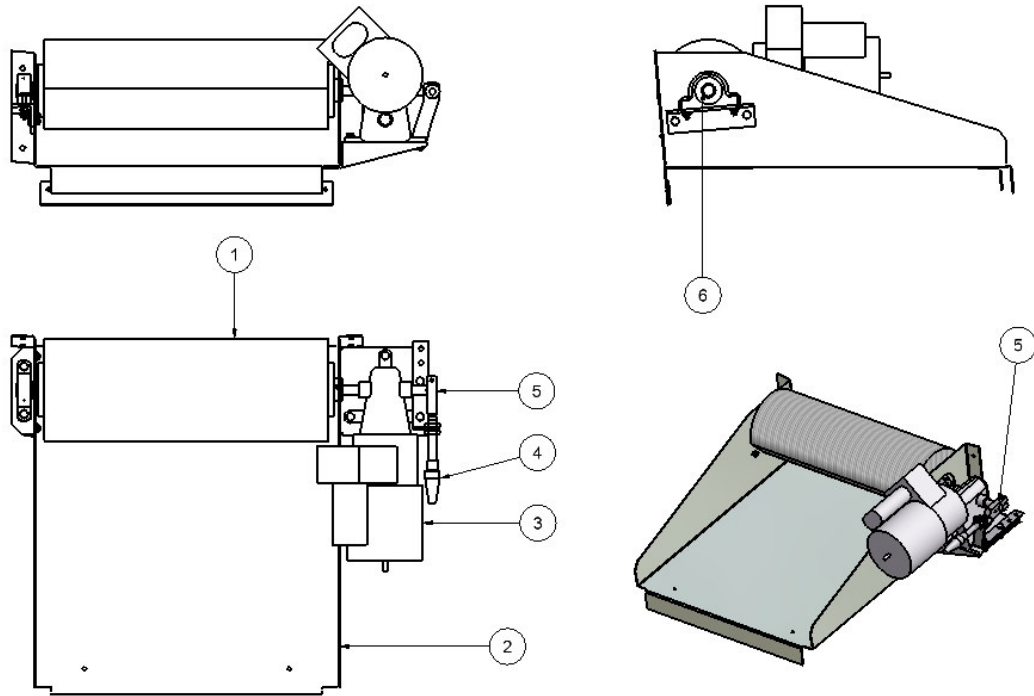


Fig. 11: Outfeed mechanism

Pos.	Part No.	Designation	Hopper-11	Hopper-15	Hopper-22	Hopper-30	Hopper-50
1	HAM0023	Roller brush	1	1	1	1	
1	184100	Roller brush					1
3	105601	Motor	1	1	1	1	1
4	HAA0000	Sensor	1	1	1	1	1
5	DAM0000	Eccentric	1	1	1	1	1
6	104650	Bearing	1	1	1	1	1

8 Retailers and representatives

The following list contains all the necessary information concerning the Range Servant representative closest to where you live.

The list is continuously updated on our home page <http://www.rangeservant.com>

8.1 Head Office

Sweden

Range Servant AB

Skallebackavägen 11

302 41 HALMSTAD

Telephone: +46 35 10 92 40

Fax: +46 35 10 82 20

E-Mail: sales@rangeservant.com

8.2 Your Sales Representative

