

**Operating instructions**

No.: 9636-01-2.01

**Spare parts list**

Ref FLA-650 Screener

Page 1 of 9 pages

TABLE OF CONTENTS

- Section 1: Technical Data
- Section 2: Installation & Operation
- Section 3: Maintenance
- Section 4: Spare Parts
- Section 5: Dimension Sheet





# AZO Incorporated

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 Memphis, TN 38181-1070  
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## 1. Data

The FLA-650 is used for continuous separation of solids from liquid. The centrifugal screening principal allows higher capacities and finer screening than with gravity or shaker devices.

### Technical Data

Model	FLA-650
Drive	B1
H.P.	2-3 H.P.
Rotor Drive Speed	155 to 1000 RPM
Inlet	3" O.D.
Thrus Discharge	4" O.D.
Solids Discharge	6" Wide
Dimensions for Stand	6'-8"(L) x 2'-2"(W) x 5'-6"(H) Max.
Unit Weight (less stand)	352 pounds

### Unit Capacity:

<u>Screen opening (microns)</u>	<u>Screen Capacity (GPM)</u>
1-5	Max. 22 GPM
5-10	22 to 44
10-20	44 to 88
20-50	88 to 176
30-50	176 to 264

Capacities are based on Milk Whey Particles with 1-3 Grams/Lt. of oversize.

# Operating instructions

## Spare parts list

No.: 9636-01-2.01



Ref. FLA-650 Screener

Page 2 of 9 pages

1. It is essential that the feed material does not include air, so one of the three arrangements should be emphasized. As rate increases, the liquid in the oversize will increase. The factors effecting liquid in oversize are 1) angle of incline and 2) rotor speed.

### 1.1 System "A": Gravity Flow

The material will flow by gravity into the machine from a surge tank with baffle plate (a) to prevent air inclusion. The feed line must be complete with an adjustable throttle valve (#1) and an automatic cutoff valve (#2). The automatic valve shuts off flow to the machine if an upset occurs in the screener.

### 1.2 System "B": Inlet regulated by a float

Gravity flow, with float control to throttle the inlet, allows constant level in discharge tank. The float valve (#1) modulates flow to keep constant level. A discharge valve (#2) should be installed to eliminate running dry if a power failure occurs.

### 1.3 System "C": Pump Charging

The material is fed into the unit with a low pressure pump (#3). The pump should be sized to deliver no more than the maximum capacity of the screener, and valve (#1) acts as the feed control throttle. The discharge from the unit is pumped to further processing.

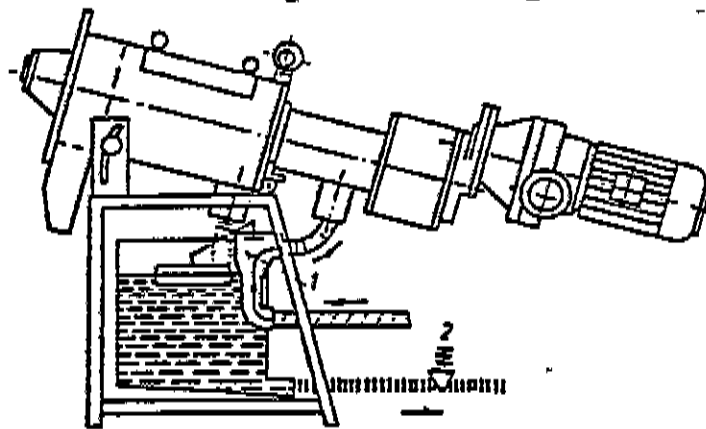
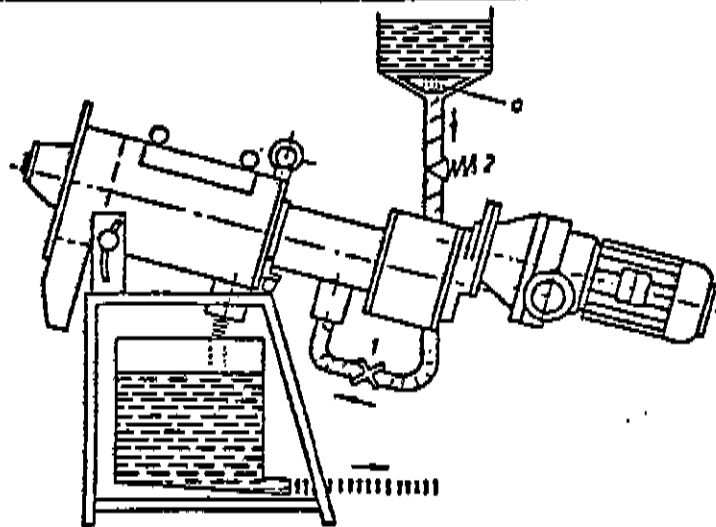
SYSTEMS "A", "B" & "C" are shown on next page.



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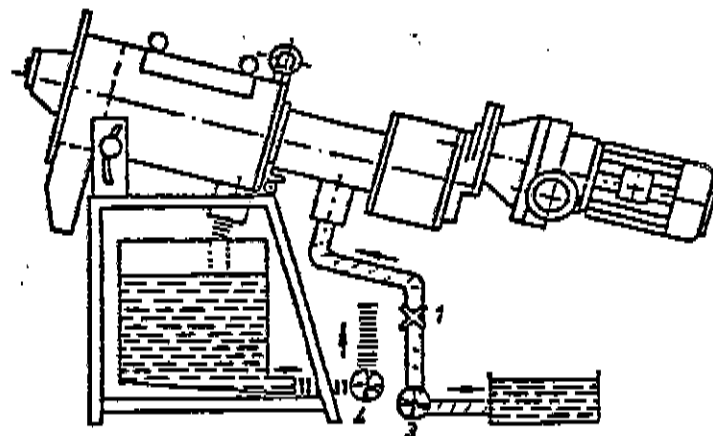
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SYSTEM "A"



SYSTEM "B"

SYSTEM "C"



**Operating instructions**

No.: 9636-01-2.01

**Spare parts list**

Ref. FLA-650 Screener

Page 3 of 9 pages

**2. Installation & Operation****2.1 Stand**

The machine is supplied complete with a stand which allows adjustment of the incline angle.

The screener's main components are listed below:

- #1 - The front cover with Bearing #7
- #2 - The screen assembly (complete)
- #3 - The rotor (complete)
- #4 - Screener housing
- #5 - Drive housing
- #6 - Front bearing
- #7 - Inlet feed section
- #8 - Variable speed drive motor

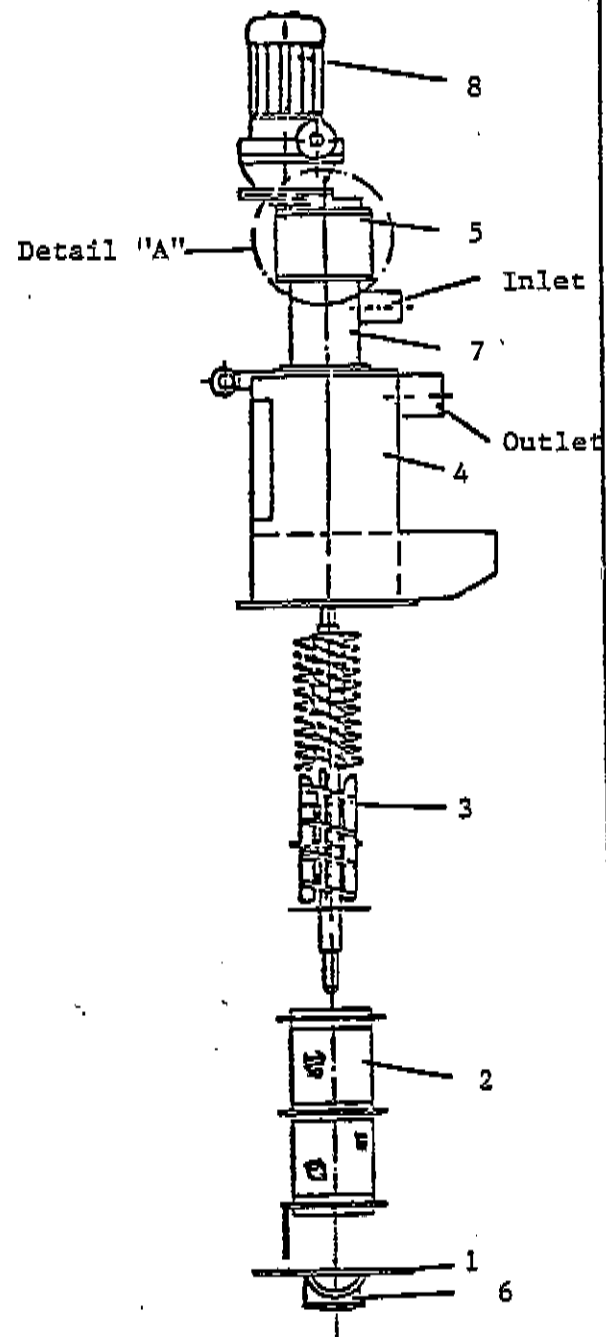
**2.2 Operation**

The feed material must be charged in a metered manner. The inlet screw moves the material into the screening zone where the centrifugal action throws the liquid and the finer mesh particles through the screen.

The oversize solids are moved forward by the rotor flite and paddles, to the oversize discharge.

The incline angle should be adjusted to obtain an optimum specifically for your product. The proper angle should give the maximum rate, with the oversize fraction slightly liquid (same viscosity as thick paint).

**Attention:** The casing inspection must remain closed during operation. We have provided an electric safety switch to disconnect the motor if casing door is opened.

**FIGURE 1**

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## 2.3 Installation

The machine stand should be securely bolted to the floor or a structure allowing adequate front clearance to remove screen assembly. The electric drive motor should be connected to a three-phase power service, complete with proper thermal overload protection for your power. Please note maximum Amp load on motor label. The front cover micro-switch and the casing inspection door safety switch should be connected to break power to the drive motor, if they are activated.

Check for proper direction of rotation, which should be CCW when facing front of machine. If incorrect, change one lead to the motor. Check motor idling Amp load, per label.

Check liquid flow rate to unit by timing a measured quantity of material. Be sure flow is consistent, since surges effect overall efficiency, and often damage screens. There is also an adverse effect with low flow rate, since the oversize discharge material may be too dry. The oversize material should be thick liquid at all times.

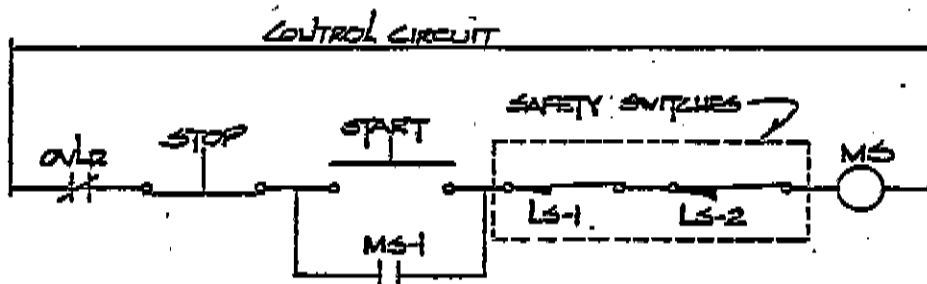
## 2.4 Special Versions

We offer special machines with special seals for different liquids, machines with positive sealing systems, and units with water flushed seals, if required due to the product nature.

## 2.5 Adjustment

The main adjustments are screen opening size, incline angle and rotor speed. The oversize should be about the same consistency as thick paint. Do not allow the oversize stream to run dry or the screen will become inflexible due to hardened material and the screen will fail.

## 2.6 Electrical Schematic



# Operating instructions

## Spare parts list

No.: 9636-01-2.01



Ref FLA-650 Screener

Page 4 of 9 pages

### 3. Maintenance

#### 3.1 Rules for Maintenance

- a) The bearings of the machine (#7) and for the motor, do not require any maintenance. These bearings are permanently lubricated. If defective, do not run smooth; replace bearings.
- b) The lip seals in each end of the machine should be greased every three months, two shots only.
- c) Normally, the screen sleeve should be inspected once a week. Open the casing inspection door and rotate screen frame, clockwise, to look at the screen surface. If a small hole is detected, it can be hand dried and spot repaired with epoxy glue or a hot melt glue gun. If large holes are detected, the screen assembly should be removed, per 3.2. and 3.3, and the screen sleeve replaced.

#### 3.2 Spare Screen Sleeve Order

The screens for this machine are available from our stock. Please give us the following details when ordering:

- a) Screen mesh or micron opening
- b) Model of machine
- c) Number of screens required

#### Removal of Screen Sleeves:

- a) The screen sleeves are removed by loosening the quick clamps (#6) and sliding the screens off of the flange nipples.
- b) loosen the tensioning nuts (3) on the front end of the frame.
- c) Slide new sleeve ends on nipples and attach with quick clamps. Be sure longitudinal seam is straight and that it is on the top of the frame when in operating position. Note, if directional arrows are on screen sleeve, observe direction of rotation.
- d) The tensioning nuts should now be tightened down. Observe screen cloth tension. If it is too tight, it should be loosened by backing off on the nuts equally. A spacer washer can be used in between stop nut and flange.





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### 3.3 Disassembly

The machine can be easily disassembled for cleaning. Attention: Before starting disassembly, be sure power to unit is switched off and locked out.

The front cover is removed by loosening the three hand wheels and swinging clear the bolts (#1). The cover slides off of the shaft, exposing the inside. The screen assembly is removed by rotating clockwise and removing from the front.

Reassemble the machine in reverse order.

# Operating instructions

## Spare parts list

No.: 9636-01-2.01



Ref. FLA-650 Screener

Page 5 of 9 pages

### 3.4 Cleaning the Screen

For cleaning the nylon screens, you may use the following solutions:

- a) Bases and oxidizer solutions, such as:

Potassium Carbonate (40%), Ammonia, Sodium Bicarbonate.

Oxygen Chloride and Hydrogen Chloride solutions distort screens slightly.

- b) Solvents: Toluene, Gasoline, Trichloroethylene, and Acetone.

- c) Acids: Acids for cleaning must be cold and diluted.

If disinfectants or sterilizing agents are to be used, a spot test on the screen cloth can be made.



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### 4. Spare Parts

#### 4.1 List of Recommended Spares for the FLA-650

Please refer to Lip Seal Detail

- 1) One set of Lip Seals (one each end) Item #11, Part #5825-03-6060
- 2) One Bearing Item # 3, Part # 694-03-6052
- 3) One "O" Ring Item #10, Part #5821-03-6061
- 4) One "O" Ring Item #12, Part #4601-03-6061
- 5) One "O" Ring Item #13, Part #5268-03-6060
- 6) 4 Spare Screen Sleeves, specify machine model and machine size
- 7) If motor operating conditions are severe, one spare motor is recommended.

#### 4.2 Replacement of Spares

- 1) Lip seals are removable after bearing cover and shaft removal (step 3.3). The seal housing is pressed out using the stainless steel rod supplied with the machine. The lip seal and "O" Ring can be sanitized and replaced.
- 2) Screen sleeve replacement (observe 3.3 and 3.2 steps).
- 3) Motor replacement can be done following step 3.3, and loosening flange bolts. Be sure screw #10 is not protruding to interfere with removal.

# Operating instructions Spare parts list

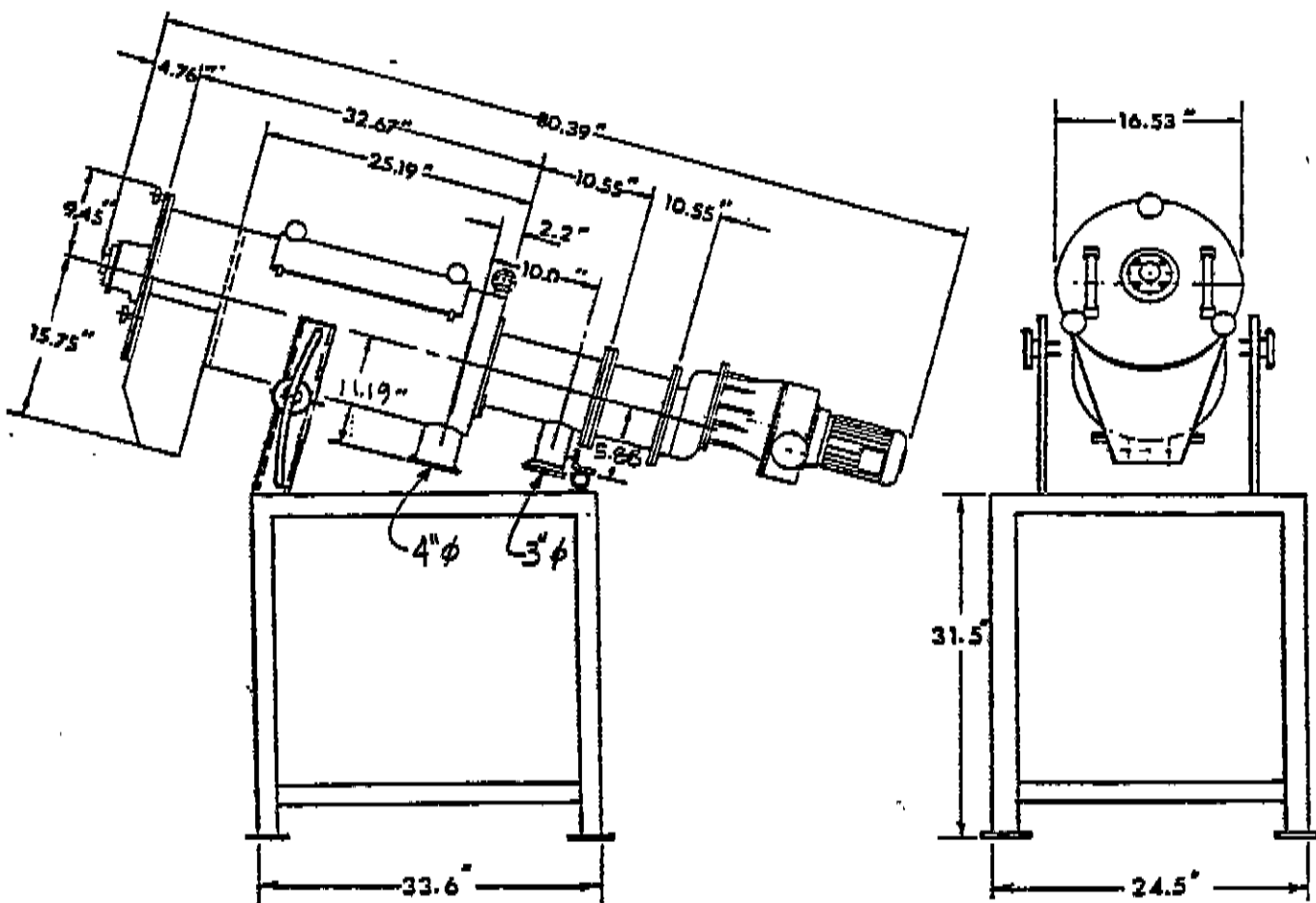
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Ref. FLA-650 Screener

Page 6 of 9 pages



## 5. DIMENSION SHEET



# Operating instructions

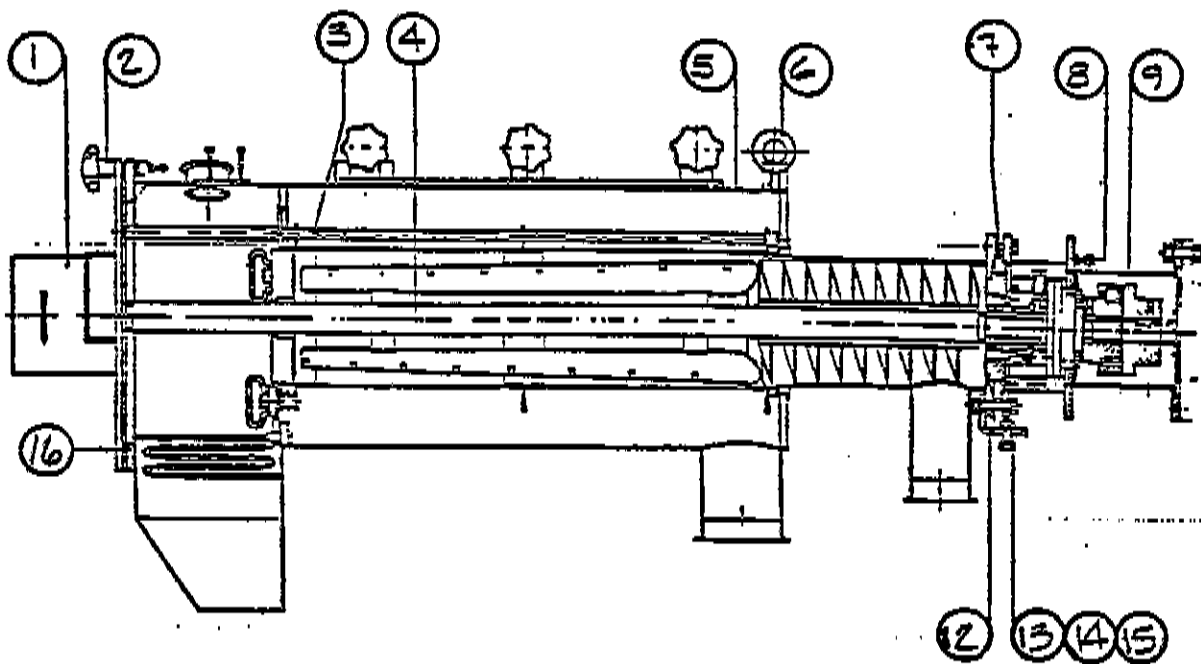
No.: 9636-01-2.01

# Spare parts list



Ref. FLA-650 Screener

Page 7 of 9 pages





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## PARTS LIST

FLA-650 Screener  
 9636-01-2.01

Item No.	Qty.	Part Number	Description
1	1	9499-01-4.34	Complete End Bearing
2	1	9486-01-4.01	Star Handle Hold Down w/Limit Switch
3	1	9449-01-4.01	Screen Assembly
4	1	9690-01-4.01	Rotor Assembly
5	1	9691-01-4.01	Screen Assembly
6	1	1643-03-5105	Eye Bolt, M12
7	1	9500-01-4.34	Complete Drive Bearing
8	1	5837-02-51.1	Rod, Ø10 x 160
9	1	9692-01-2.30	Complete Drive Unit
10	1	4685-03-6201	Reference Plate
11	1	1633-03-6201	Information Plate
12	1	6254-02-34.1	Mounting Bracket
13	2	0423-03-5101	Hex Bolt, M12 x 35
14	6	0390-03-5110	Washer, B13
15	4	0381-03-5109	Nut, M12
16	1150	4586-03-6111	Gasket, 10 x 6 Syn. Rubber

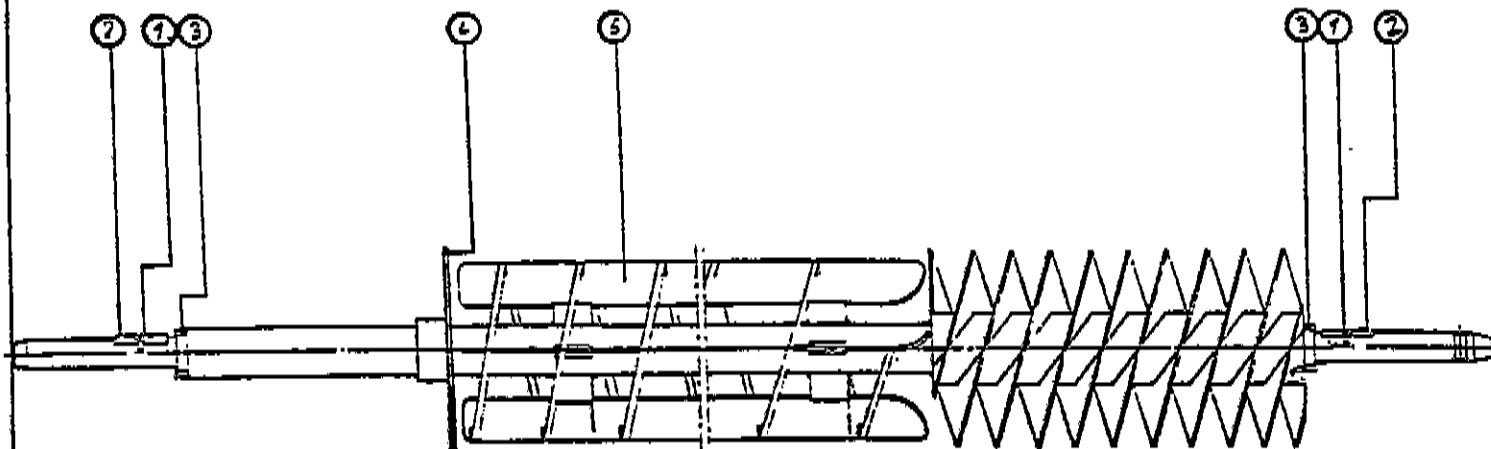
**Operating instructions**

No.: 9690-01-4.01

**Spare parts list**

Ref. Complete Rotor Assembly for FLA-650 Screener

Page 8 of 9 pages

PARTS LIST

Item No.	Qty.	Part Number	Description
1	2	0582-03-5108	Countersunk Screw, M4 x 12
2	2	0601-03-5922	Key, 8 x 7 x 40
3	2	11835-02-10.1	Gasket, Ø29 x Ø39 x 10
4	1	1470-02-28.2	Baffle Plate, Ø40
5	1	8059-01-4.01	Complete Rotor



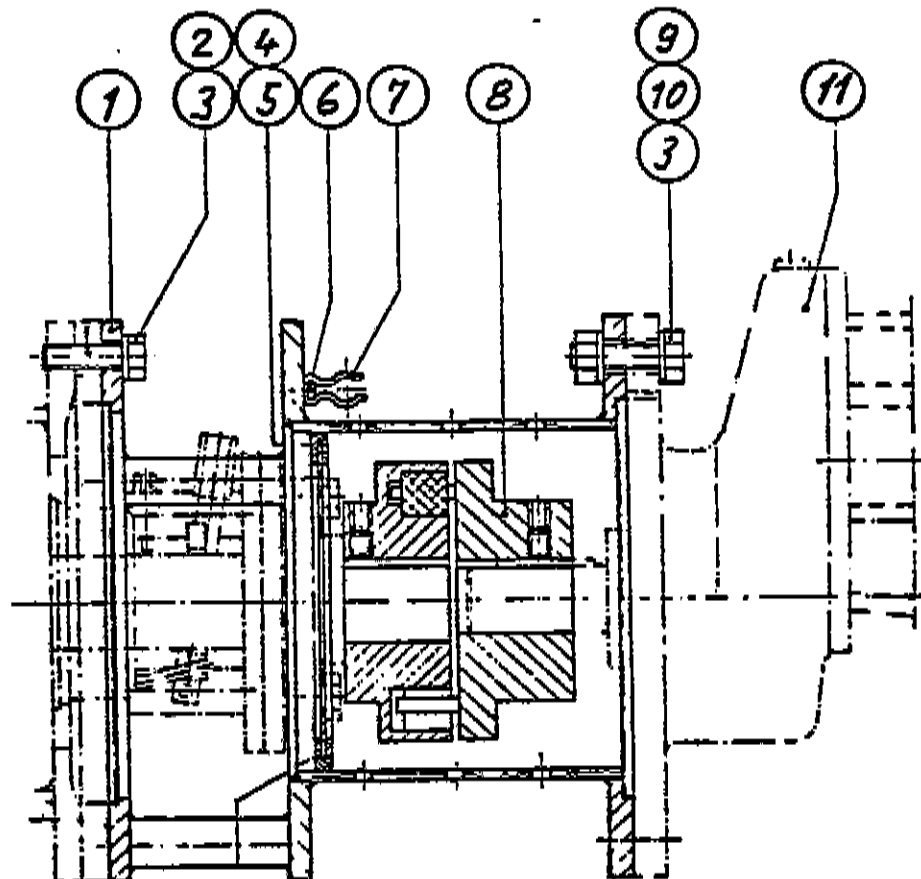
# Operating instructions

No.: 9692-01-2.30

## Spare parts list

Rel. Complete Drive Unit for FLA-650 Screener

Page 9 of 9 pages



Item No.	Qty.	Part No.	Description
1	1	9695-01-4.30	Clutch Housing
2	6	0423-03-5101	Hex Bolt, M12 x 35
3	14	0390-03-5110	Washer, B13
4	1	12099-02-28.1	Washer, 2 x Ø75 x Ø143
5	450	1406-03-6065	Type F 813 Clear Syn. Rubber
6	2	0457-03-5103	Socket Head Bolt, M4 x 12
7	2	2510-02-34.2	Clip
8	1	1690-01-1.28	Complete clutch
9	4	0424-03-5101	Hex Bolt, M12 x 40
10	4	0381-03-5109	Nut, M12
11	1	---	Gearmotor



# Operating instructions Spare parts list

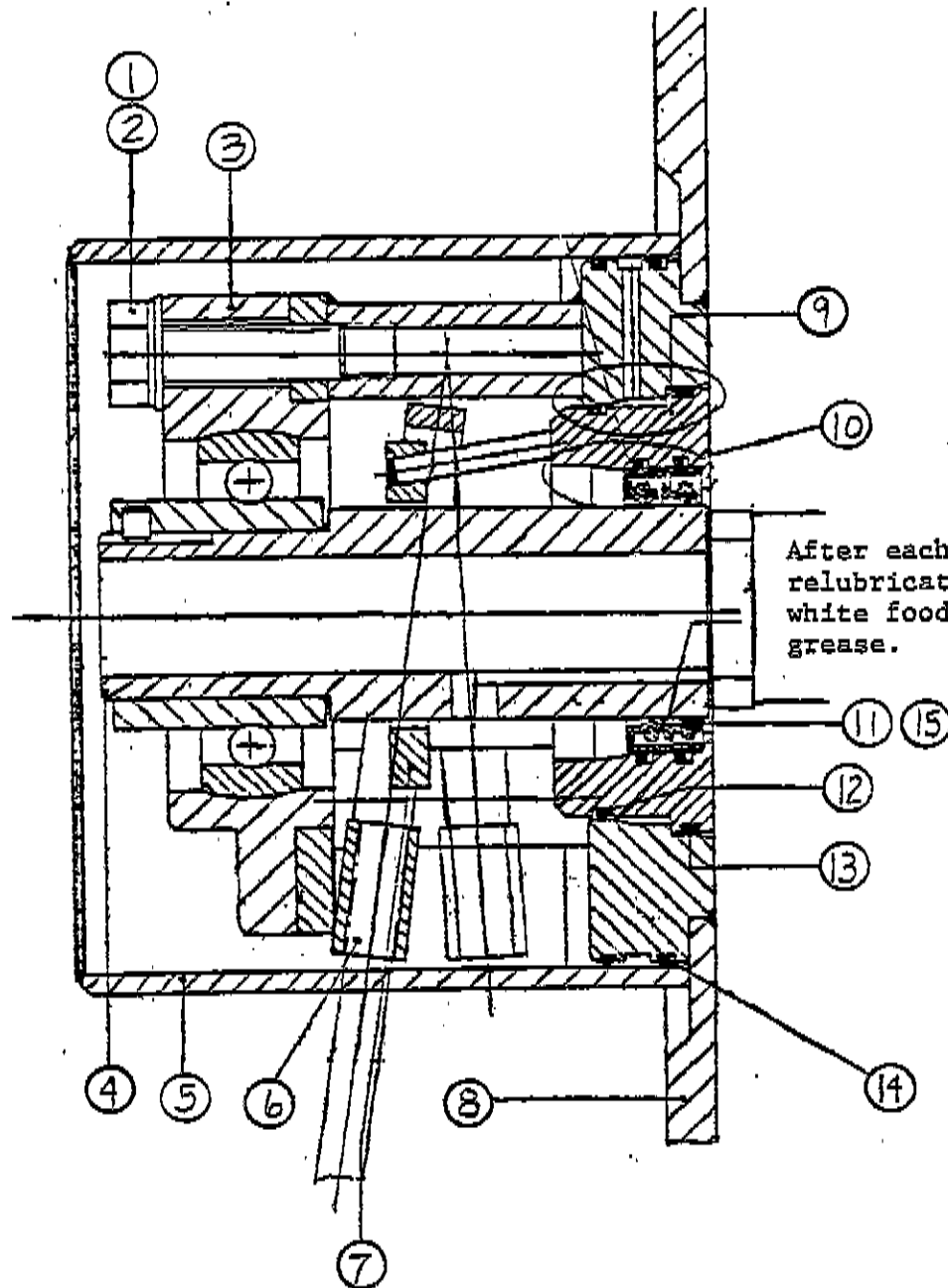
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Ref:

Page of pages

Front Bearing w/ Lip Seals



After each cleaning  
relubricate with  
white food grade  
grease.

# Operating instructions

## Spare parts list

No.: 9499-01-4.34



Ref:

Page of pages

PARTS LIST

## Front Bearing w/ Lip Seal

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	4	424-03-5101	Hex Head Bolt - M 12 x 40
2	4	390-03-5110	Washer - B13
3	3	694-03-6052	Flange Bearing
4	1	11893-02-18.1	Shaft Sleeve - 25 x 42 x 123
5	1	9501-01-4.01	Bearing Cover
6	1	9488-01-4.01	Disassembly Arm
7	1	9489-01-4.01	Disassembly Collar
8	1	9633-01-4.01	Bearing Housing & Flange
9	1	11942-02-18.1	Seal Housing, 56 x 94 x 32
10	1	5821-03-6061	O-ring, 59 x 65 x 3, NB
11	2	0729-03-6060	Lip Seals, AS 45 x 60 x 8
12	1	4601-03-6061	O-ring, 82 x 88 x 3, NB
13	1	5268-03-6061	O-ring, 85 x 91 x 3, NB
14	2	5822-03-6061	O-ring, 145 x 15 x 3, NB
15	2	3189-03-6061	O-ring, 44 x 50 x 3, NB

# Operating instructions Spare parts list

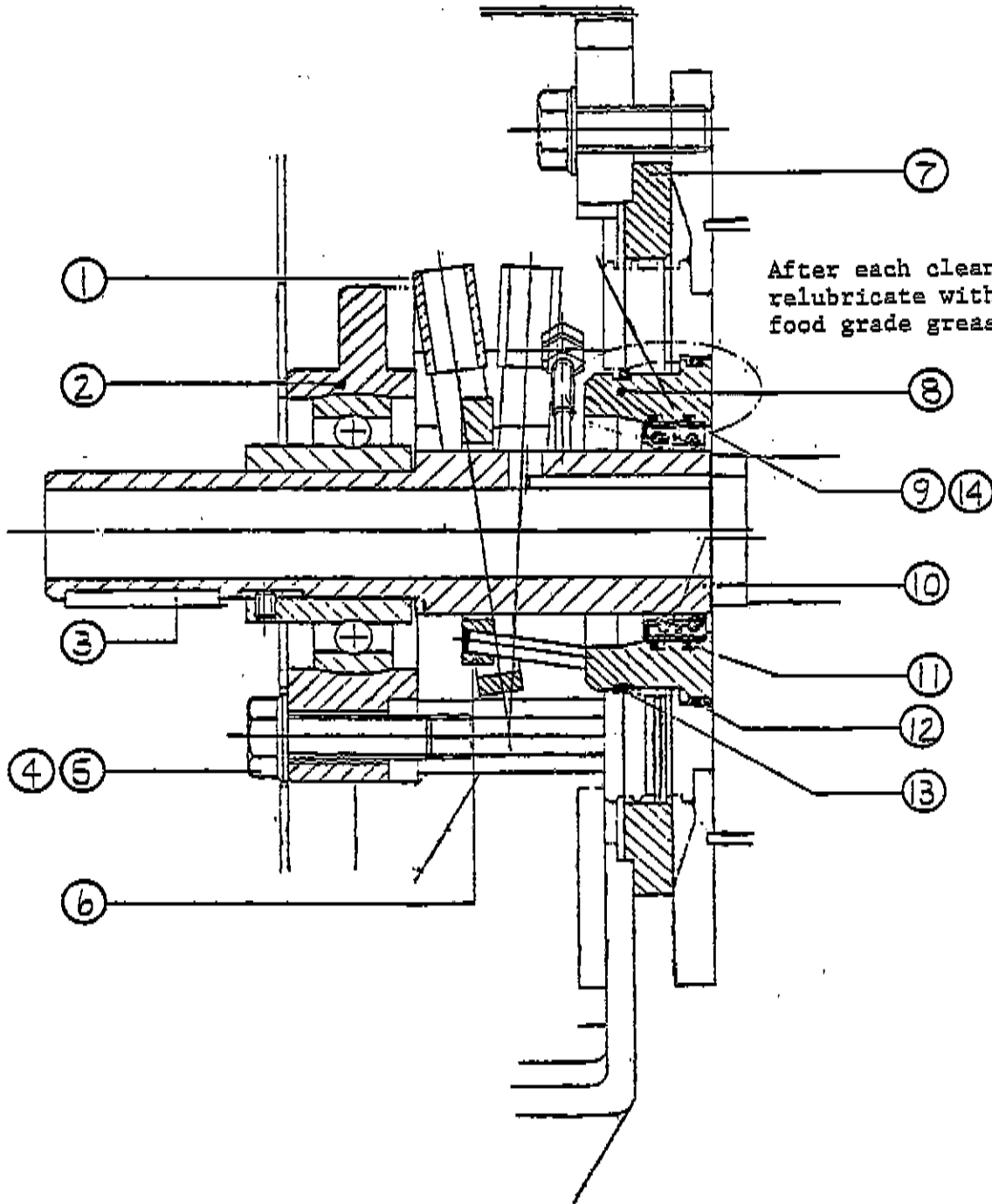
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Ref:

Page of pages

### Rear Drive Bearing w/ Lip Seals



# Operating instructions

## Spare parts list

No.: 9500-01-4.34

Ref.

Page of pages



### PART LIST

Rear  
Drive Bearing w/ Lip Seals

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	9488-01-4.01	Disassembly Arm
2	1	694-03-6052	Flange Bearing
3	1	4170-03-1422	Key - 10 x 6 x45
4	4	424-03-5101	Hex Head Bolt - M12 x 4
5	2	390-03-5110	Washer - B13
6	1	9489-01-4.01	Disassembly Collar
7	1	11943-02-09.1	Ring, Ø 151 x Ø 200 x 12
8	1	11942-02-18.1	Seal Cartridge, Ø 58x94x32
9	2	0729-03-6060	Lip Seal, AS 45x60x8 , NB
10	1	11906-02-18.1	Shaft Sleeve, Ø 25x Ø45
11	2	5821-03-6061	O-Ring, Ø 59x Ø 65x3, NB
12	1	5268-03-6061	O-Ring, Ø 85x Ø 91x3, NB
13	1	4601-03-6061	O-Ring, Ø 82x Ø 88x3, NB
14	2	3189-03-6061	O-Ring, Ø 44x Ø 50x3, NB