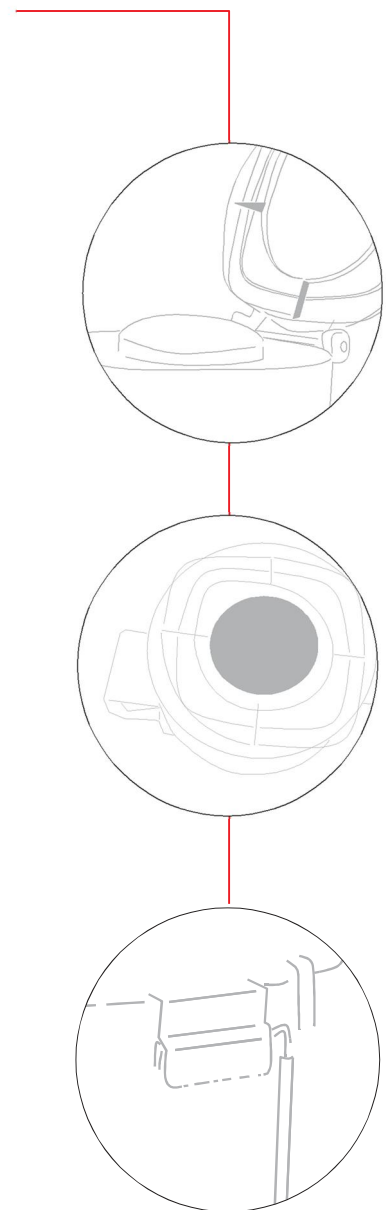


# **STARING SM 324**

## **Instruction manual**



>> Before you use the Mixer, please read the Instruction manual



Dear STARING Customer,

STARING SM 324 is a pan mixer of the most advanced design in the market and easily meeting all site requirements of today. The maximum performance and the simple, easy operation of the STARING SM324 are results of our recent development work within the mixer technology field.

In order to achieve safe handling of the STARING SM324, we ask you to read the following instruction manual carefully.

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## >> 1. Technical Data

Mixer Type .....	SM 324
Mixer Weight .....	320 kg
Gross Volume .....	324 l
Net Volume .....	approx ca. 170 L
Pan Diameter .....	1000 mm
RPM .....	33 (l/min)
No. of Mixer Arms .....	3
Discharge Height .....	800 mm
Electric Moter Output .....	3,0/4,0 kW
Protection .....	IP 54
Voltage .....	400V
Power Consumption .....	7,2A/8,6A

Electric Moter Output .....	3,0 kW
Protection .....	IP 54
Voltage .....	400V
Power Consumption .....	7,2A

Frequency .....	50 Hz
Noise Level at the Working Place (Mixing) .....	78 dB(A)
Noise Level at the Working Place (Idling) .....	58 dB(A)
Mixer Noise Level (Mixing) .....	<68 dB(A)
Mixer Noise Level (Idling) .....	<66 dB(A)

### Identification:

The Manufacturer's type sign states the mixer type. No. in the first field. The second field consists of seven figures of which the first three figures state the machine No., the next two figures the building year and the last two figures the month of the building year. The third field states the net weight in kg of the mixer.



## >> 2. Safety and Prevention of Accidents

### **Instruction Manual**

All persons dealing with the use, installation, operation, maintenance and repair must have read and understood the Instruction Manual.

### **Persons Responsible**

The operator of the mixer is responsible for the fact that only persons who are qualified and have been instructed in the operation of the machine operate, maintain or repair the mixer.

### **Purposeful Use**

Mixers are machines for production of concrete, mortar and for processing of refractory materials. The mixer can handle solid materials without adding water or aggregates.

The mixer may only be used in accordance with the intended purpose and may not be used for mixing of inflammable or explosive materials. The mixer is not suitable for mixing of foodstuffs.

### **Power Supply**

The mixer may not be connected to wall sockets. The connection requires being wired into the supply provided. Cabling with a cross section of (3 for single phase) 5 x 1,5 mm<sup>2</sup> and approved socket outlet and plug must be used.

If the cables are defective the mixer may not be operated. Defective cables can be a danger to life. Use only cables and plugs which are fault free.

### **Danger to Persons an Equipment**

If the mixer is operated incorrectly and not in accordance with the intended purpose, damage to persons or equipment may result. **Therefore any incorrect use of the mixer is not allowed!**

## >> 2. Safety and Prevention of Accidents

### **Safety Equipment**

The mixer should only be operated using the safety equipment which is recommended. The mixer should only be operated with complete and undamaged safety equipment.

### **Maintenance and Repair Work**

All work at power equipment should only be carried out by specialists observing the relevant safety requirements.

The machine should be checked daily by the operator for correct operation.

This is especially important for:

**movable parts**

**screw joints safety**

**equipment**

**protection equipment cables,**

**plugs and switches excessive**

**soiling**

In connection with maintenance and repair work the power supply must be disconnected and arrangement made so that it is not possible to engage the mixer again.

### **Declaration of Conformity**

The mixer is in conformity with the COUNCIL DIRECTIVE of 17 Mai 2006 on mutual approximation of the laws of the Member States on the safety of machines (2006/42/CEEE as amended by directives EN 292-1, EN 292-2, EN 294, EN 418, EN 954-1, EN 1037, EN 10151, EN 60204-1) with special reference to Annex 1 of the Directive on essential safety and health requirements in relation to the construction and manufacture of machines. the provisions in the Council Directive of 14. June 1989 on mutual approximation of the laws of the Member States on the safety of machines (89/392/EEC as amended by Directives 91/368/ EEC, 93/44/EEC) with special reference to Annex 1 of the Directive on essential safety and health requirements in relation to the construction and manufacture of machines. The mixer is also produced in accordance with following harmonized standard : EN 292-1, 292-2, 294, 349 and 418.

## >> 3. Special Safety Equipment

The mixer will be delivered with either a securely fastened or electrical secured safety cover and with safety screen under the discharge port.

Furthermore, we have for safety reasons installed a thermal relay. The thermal relay protects the electric motor when overheating occurs. The mixer is protected against automatic restarting and the thermal relay needs to be reset before the mixer can be used again.

The rated power is stated on the electric motor machine sign.

## >> 4. Transport



Fig. 1

When the mixer is transported by means of secured hoists, it must be properly fastened by means of suitable fastening devices so that the transport will be safe.

Fig. 1.

By towing the mixer, please note that max. Permitted speed is 30 km/hour.

### **Note**

Pay attention that there is enough lifting capacity in the hoist being used.

### **Risk**

Incorrect lifting of loads as well as damaged chains and ropes may cause serious accidents.

## >> 5. Gear

Before Dispatch all gears will be tested for a short period, but to achieve the highest efficiency of a gear requires the operation for many hours under full load.

From the beginning the gears can operate under full load, however, it will be advantageous, wherever possible.

To let the gear run in under slowly increasing load, so that a full load is not reached until after 20-40 hours of operation.



## >> 6. Starting Procedure

Before starting the mixer

– please pay attention to following :

1. Check cable for power supply.  
Replace if there is any sign of leakage or damaging.
2. Be sure that the mixing pan is empty – if not, please emptying the pan.
3. Control that all mixing arms and paddles is properly tighten.
4. Place the mixer horizontal.

## >> 7. Using the Mixer

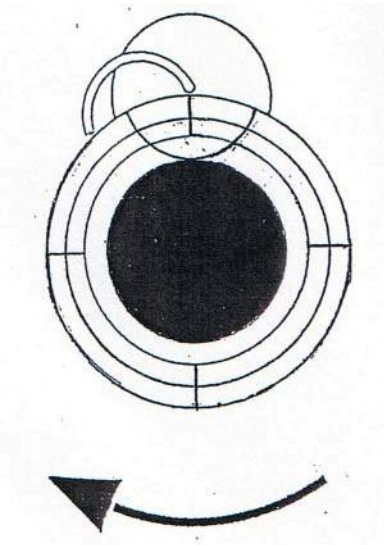


Fig. 2

The mixer is started on the switch as follows:

Green pushbutton = Start

Red pushbutton = Stop

After the engagement the direction of rotation should always be checked.

The mixer blades must rotate clockwise.

Fig. 2.

Where wrong rotation occurs this requires adjustment of two of the three phases. This work must be carried out by a qualified electrician.

If the machine is equipped with a directional plug the direction of rotation can be changed by turning the terminals with a screwdriver.

Fig. 3.

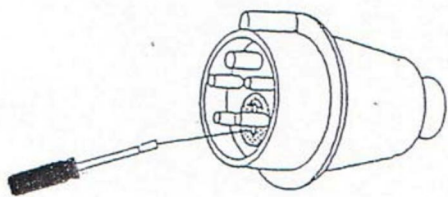


Fig. 3

Whenever the mixer has been moved to another place, the direction of rotation should be checked.

Filling and discharge of the mixer should only take place when the mixer is running so, hat damage to the mixer is avoided.

## >> 8. Adjustment of Mixer Blades

For an optimum adjustment of the mixer blades please follow the instructions below:

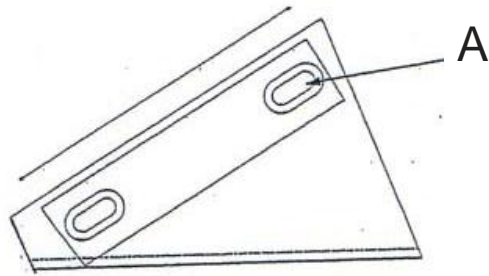


Fig. 4

1. Disconnect the mixer from the power supply and ensure that it is not possible to engage it again.

2. Loosen the screws in the safety cover and remove the cover.

Fig. 4

3. Remove the centre cover A

Fig. 5

4. Tighten the screws.

5. Lift the mixing head from the mixing pan

6. Loosen the lock-nut A on bolt B. Fig. 5

7. Turn bolt B clockwise. One rotation lowers the mixing head by approximately 2mm. Install the mixing head and check the distance between the mixer blade and the bottom.

This distance should be approximately 2 mm.

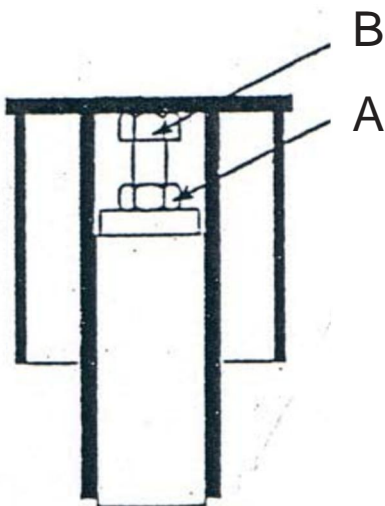


Fig. 5

## >> 9. Optimum Mixing

The optimum mixing (mixing time) is achieved by filling water directly through the centre cover of the mixer.

In this way the water will be equally distributed in the mixer pan during the mixing.

For the cleaning and maintenance of the mixer please follow the instructions and recommendations below:

## >> 10. Cleaning and Maintenance of the Mixer

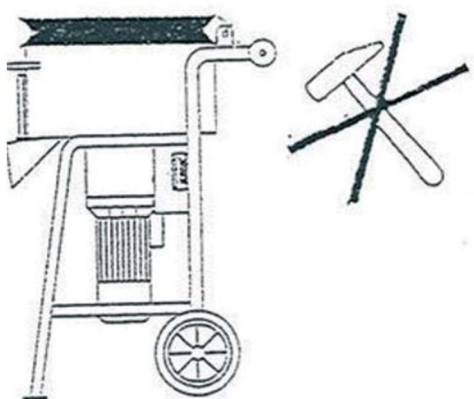


Fig. 6

### **Cleaning Recommendation;**

1. Adding of gravel will improve the cleaning effect.
2. Let the mixture run for a few minutes.
3. Empty the mixer.

Disconnect the mixer from the power supply and ensure that it is not possible to engage it again.

4. Clean with water.

Never direct the jet of water directly at the plug or control panel.

The gearbox of the mixer requires no maintenance.  
If the mixer pan is damaged it will be difficult to clean it.  
Fig. 6

## >> 11. Spare Parts

Only approved STARING spare parts should be used for the mixer. The warranty will be void if spurious spare parts are used.

## >> 12. Spare Part List

### SPARE PART LIST OF SM324

No.	Description	Qty	Part Number
1	Net Cover Assembly	1	03242000CHK
2	Mixing Arm Assembly	1	03241010CHK
3	Handle bolt M8*25	1	
4	Paddle (Middle/Inside)	2	02901510CH HÅRDMETAL
5	Paddle (Outer)	1	02901520CH HÅRDMETAL
4b	Rubber Paddle (M/I)	2	02901620CH
5b	Rubber paddle (O)	1	02901610CH
6	Taper bolt	1	
7	Hex Bolt	1	
8	Transmission Shaft	1	03249010CHK
9	Mixing Pan Assembly	1	03245001CHK
10	Hex Bolt M8*25	1	
11	Spring washer $\phi$ 8	1	
12	Flat Washer	1	
13	Outlet Plate Assembly	1	03245100CH
14	Handle Cover	1	
15	Outlet	1	03249400CH
16	Flat Washer $\phi$ 10	8	
17	Plastic Hex locknut M10	2	
18	Plug Pin	3	
19	Straight Pin	3	
20	Switch Assembly	1	03244010CHK
21	Socket	1	03244010CHK
22	FrontLeg Assembly	2	
23	Plastic Hex locknut M16	2	
24	Flat Washer $\phi$ 16	2	
25	Wheel	2	03247000CHK
26	Motor & Gear Box Assem	1	03249012CHK
27	Flat Washer	1	03243000CHK
28	Spring Washer $\phi$ 16	1	
29	Hex Bolt M16*25	1	
30	Flat Washer $\phi$ 12	4	
31	Plastic Hex locknut M12	4	
32	Back Leg Assembly	1	
33	Rod	1	03248000CH
34	Cup head square neck B	6	
35	Spring Washer $\phi$ 10	6	
36	Hex Nut M10	6	
37	Magnetic Switch	1	9122CH

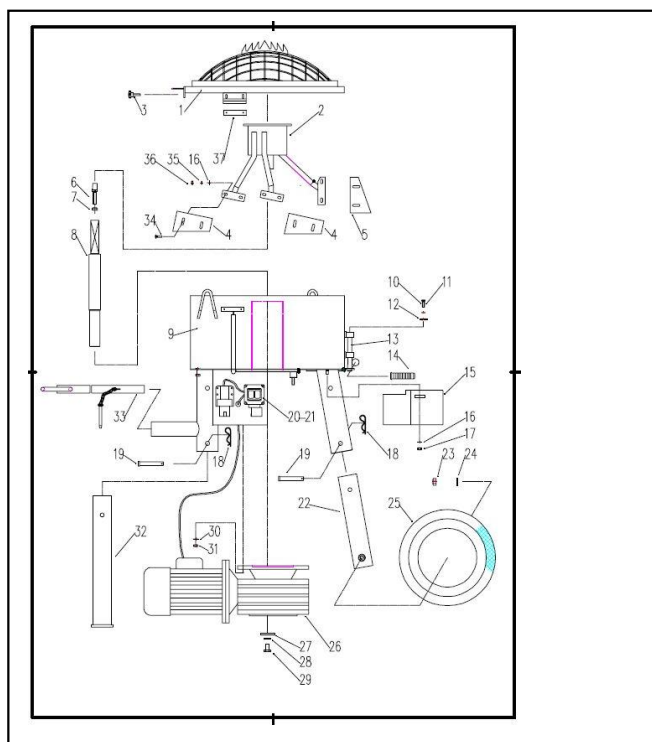
## >> 13. Guarantee

1. There will be a guarantee of 12 months from date of delivery.
2. The guarantee cover all operational failures due to material or fabrication defects.
3. The manufacturer can choose freely to remedy the damage by compensation, replacement or repair.
4. The costs of dispatch are on the account of the buyer.
5. Replaced parts belong to Staring Maskinfabrik A/S.
6. The manufacturer will undertaker no responsibility with regard to consequential damages and possible loss of production.
7. In order for the guarantee to be complied with the defect must be reported immediately after it has occurred.

### **THE GUARANTEE DOES NOT COVER**

1. Damages due to incorrect connection.
2. Repair executed by others.
3. Damage as a result of wrong operation, negligent treatment or transportation damages.
4. Natural wear and tear.
5. Only use approved Staring spare parts.

Where a complaint is forthcoming Staring Maskinfabrik A/S should be informed in writing together with all relevant information regarding the machine. Additionally, an, defective symptoms or cause must be informed.



## >> 14. EC Declaration of Conformity

### EC Declaration of Conformity

**Manufacturer:**

Company Name: Staring Maskinfabrik A/S  
Address: Starengvej 9-11  
9700 Brønderslev  
Danmark  
  
Tel.: +45 98821622

**hereby declare that  
Machine:**

Name: **STARING MASKINFABRIK A/S**  
Type: **SM324**  
Serial no.:

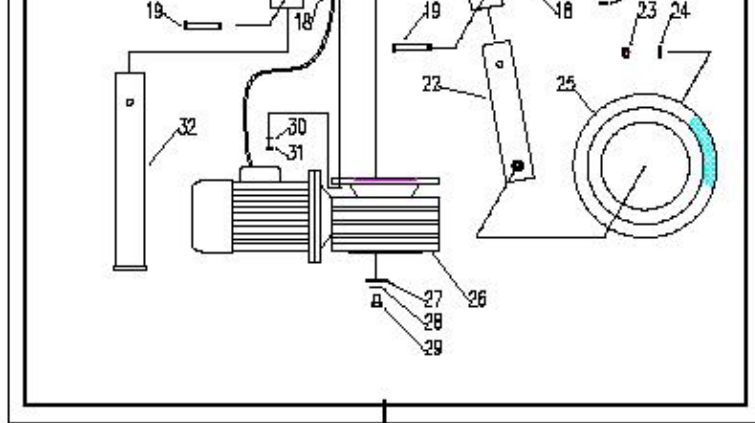
- is in conformity with:

the COUNCIL DIRECTIVE of 17 Mai 2006 on mutual approximation of the laws of the Member States on the safety of machines (2006/42/CEEE as amended by directives EN 292-1, EN 292-2, EN 294, EN 418, EN 954-1, EN 1037, EN 10151, EN 60204-1) with special reference to Annex 1 of the Directive on essential safety and health requirements in relation to the construction and manufacture of machines.

Company: STARING MASKINFABRIK A/S  
Name: Tommy Bredal  
Position: C.E.O.



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