



INSTALLATION AND USERS GUIDE

PADDLE MIXER

Type: DPMA 2100
Year: 2018



Manufacturer:

FEEDTECH MAKINE SANAYI LTD. STI.
Organize Sanayi Bölgesi 305.Sokak No:11
SALİHLİ/MANİSA
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IMPORTANT

This installation and users guide is prepared for all persons who have to install, de-install, adjust, use, maintain, repair, etc. with this machine. All work on this machine has to be carried out by knowledgeable and skilled people.

1. PURPOSE OF USE

These double shaft paddle batch mixers are used for mixing several powder and granule formed raw materials and adding liquids. Like animal fat, water and/or vegetable oils (up to a certain percentage). **We strongly advise not to add molasses.** Double shaft paddle batch mixers feature a quick and homogeneous mixing. Even products with varying densities and/or fragile structures can be mixed to a uniform mixture in a short time.

2. WORKING PRINCIPLE

The mixer is equipped with double shaft on which paddles are mounted. The right and left paddles move the material in opposite directions causing the mixing. The standard version has twin bombdoors over the full length of the mixer giving a quick and clean unloading. The total unloading time is reduced to less than 20 second only, so more batches per hour can be produced, with an upper-and under bin (see fig.1).

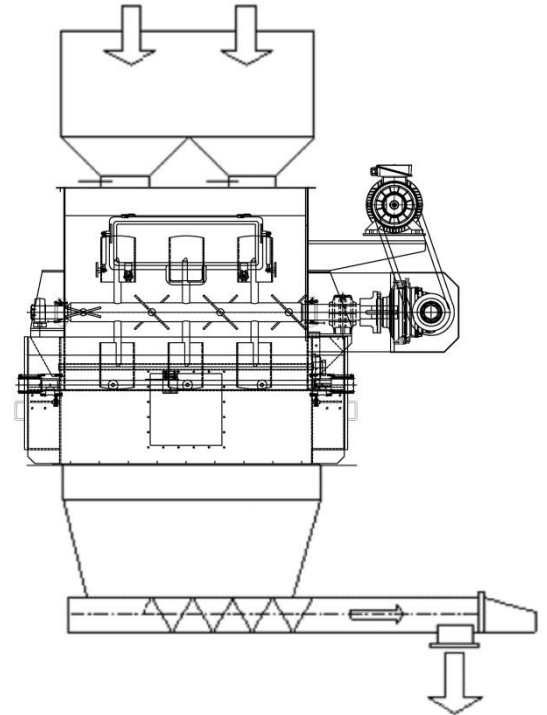


fig.1

3. INSTALLATION AND COMMISSIONING

- **Work like installation, adjusting, electrical connection and mounting have to be carried out by qualified people.**
- **The machine must be installed in such a way that even when the inlet or outlet is opened no body parts can enter the machine. When this is impossible a proper grid has to be installed on the opening.**
- **With machines used for operating on fine powders (dust) there is the risk of a dust explosion when a specific dust/air mixture comes in contact with a heat-source or spark. It is therefore strongly recommended to install a proper dust aspiration system to prevent a dangerous dust/air mixture from building up in the installation.**

3.1 SUPPORT

The mixer has to be supported and fixed on a steel frame or a concrete floor, which should be flat, horizontal and rigid.

3.2 LOADING

Extra inlets for hand additions or inspection hood shave to be constructed in such a way that no body parts can enter the inside of the running mixer.

3.4 DISCHARGING

Unloading the mixer is effectuated by opening the 'bombdoor(s)' under the mixer.

The hopper under the mixer should be designed in such a way that the mixer doors can open freely and the whole batch can be stored. Insufficient room in the hopper can cause unproper closure of the doors and even damage.

3.5 DRIVE

The mixer has been equipped with two gearbox, connected to each other, driving with one motor. Before starting the mixer motor fixing and alignment has to be checked.

Warning!

- It's important to connect the mixer motor to a star-delta starter.
- Mixers which are started with a full trough, and run by a max. capacity have to be protected by means of a fluid coupling.

3.6 ELECTRICAL CONNECTION

- Check the proper direction of rotation.
- For safe operation of the mixer a lockable safety switch has to be incorporated in the electrical circuit. This switch has to be placed close to the mixer. The connection has to be in such a way that it may not be possible to start the mixer when the safety switch is off!
- When access-doors are equipped with door switches the electrical connection has to be in such a way that the main motor will stop and the loading of product is prevented.

4. COMMISSIONING

- Check the system for left behind tools and other parts.
- Check whether the safety switch and door contacts are functioning properly.
- Check whether **all** protection caps are mounted and inspection doors are closed.
- Check the outlet-slide(s) on closing properly.
- Never start the machine unless empty. It might be overloaded!

5. USE

The filling rate of paddle-mixers is an important figure. The range is 30-125% of the normal contents. Never operate the mixer outside this range.

The best mixtures are obtained when the particle size is in the range of 100-3000 microns. The bigger the variation in particle size the more risk there is of de-mixing during unloading and transport. The bulk density of the mixture has to be under 1,0t/m³.

The normal mixing-time for animal feed is 40 seconds. In other cases longer mixing-times may be required.

Low viscosity liquids can be added to powders in the mixer. When applying liquid(s) to the mash, be sure the mixer is filled with product before adding the liquid(s). The liquid(s) have to be entered over the length of the mixer via multiple spouts. The maximum total amount of liquids to be added is 10%.

NOISE LEVEL:

The maximum noise level emitted from the mixer from a distance of 1 meter working under full load is below 70dB(A).

6. MAINTENANCE AND REPAIRS

- Maintenance and repairs have to be carried out by skilled people only.
- One has to be sure that with every inspection or repair action the main switch and the safety switch are off. Further the electric and air supplies to the inlet- valve(s) and the outlet-slide(s) or bombdoors has to be disconnected so that they cannot be activated.
- Check after maintenance and repairs whether the safety switch and eventual safety contacts are functioning properly.
- When protecting covers are removed, inspection hatches, doors, etc. are opened the machine may not be started!

6.1 MOTOR

- Periodically check the temperature of the motor bearings.
- Consult the installation and maintenance guide of the motor manufacturer for details.

6.2 BEARINGS

Check monthly the temperature of the bearings. Keep the bearing houses clean to promote cooling and to prevent dirt from entering the bearing house.

Every 6 months (or 1000 running hours) the bearings have to be checked internally and eventually re-greased with one of the brands on following table.

When the mixer is used in the food industry a food-grade type grease has to be used.

SHELL:ALVANIAEP2	ESSO:BEACONEP2
MOBIL:MOBILUXEP2	Q8:REMBRANDT2

6.3 SHAFT SEAL

The dust seal of the shaft is of the gland type. These glands have to be checked for leaking dust and/or product. In case of leak age the gland bolts have to be tightened. Never tighten the bolts too tight, the shaft must still run smoothly. All mixer types use 3 rings of packing material. (see also fig.2).

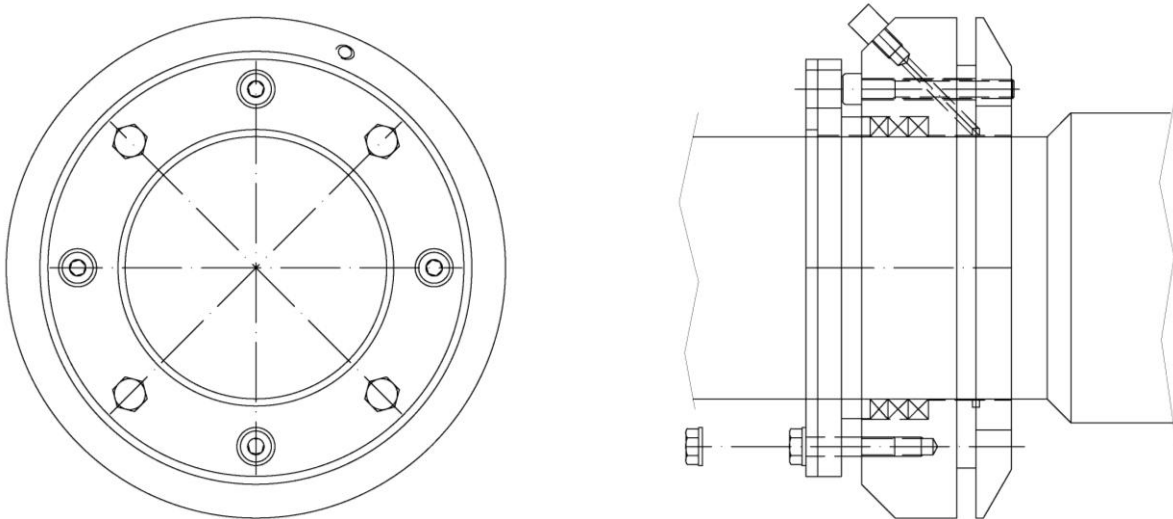


fig.2

6.4 MIXER-PADDELS

Check the mixer-paddles regularly for wear and deformation. The paddles have to be replaced when the thickness is reduced to $\pm 2/3$ of the original thickness.

6.5 BOMBDOOR

The two pneumatic operated doors are secured by the pneumatic locking shaft. Regular check of the door tightness is necessary. The seals should be replaced when not functioning well anymore.

7. CLEANING

When cleaning the mixer the same safety regulations as described in chapter 6 are applicable! Moulds may grow under the cover of the mixer and form a potential hazard of contamination of the product. Inspect regularly and clean (when necessary).

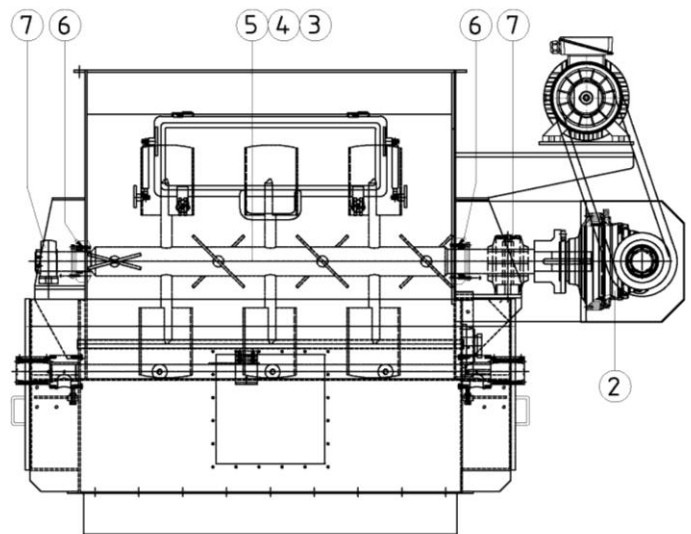
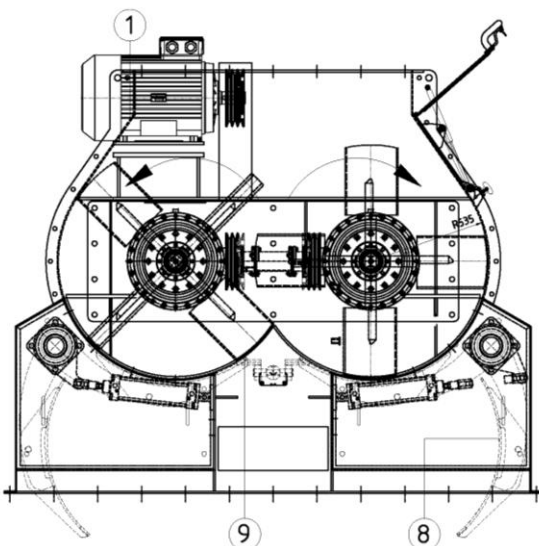
When adding liquid(s) on the mixer pollution of the paddles and the main shaft may occur. It is advisable to check the mixer regularly in this respect and clean it when necessary. A part from the risk of cross-contamination and growth of microorganisms, the good mixing action of the mixer is adversely affected when product sticks to the paddles.

Other points that require regular cleaning are the sealing surfaces of the 'bombdoor', hatches, doors, etc.

8. TECHNICALSPECIFICATIONS

8.1 PARTS

1. motor	2. gearbox	3. mainshaftmixer	4. innerpaddles
5. outer paddles	6. shaftseals	7. mainbearings	8. 'bombdoor'
9. rubber seals			

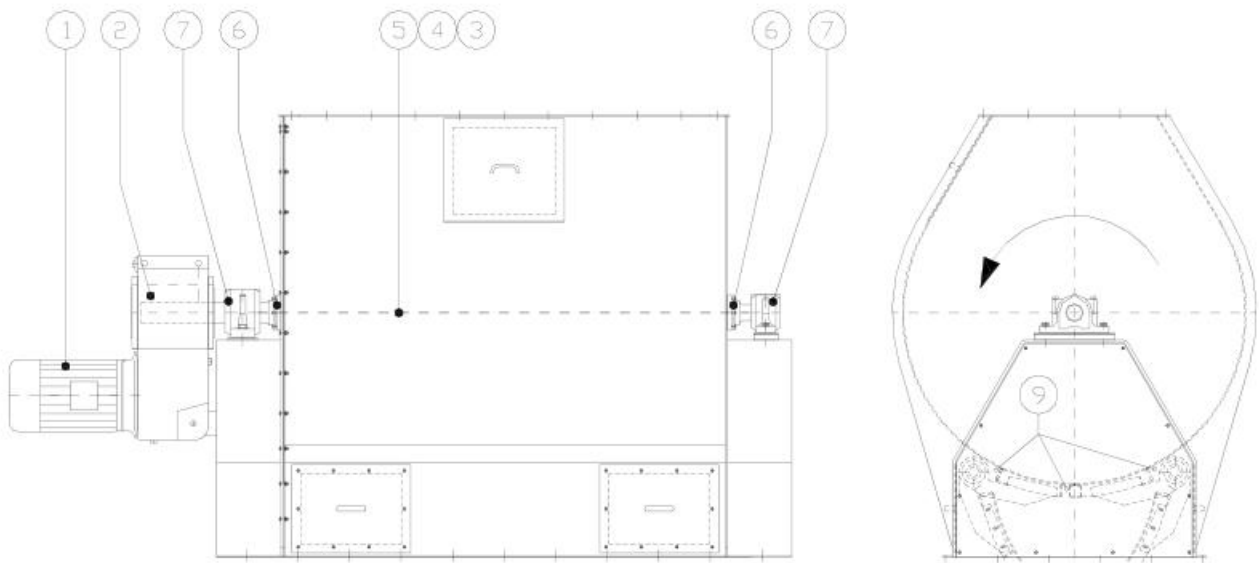


8.2 WEAR PARTS

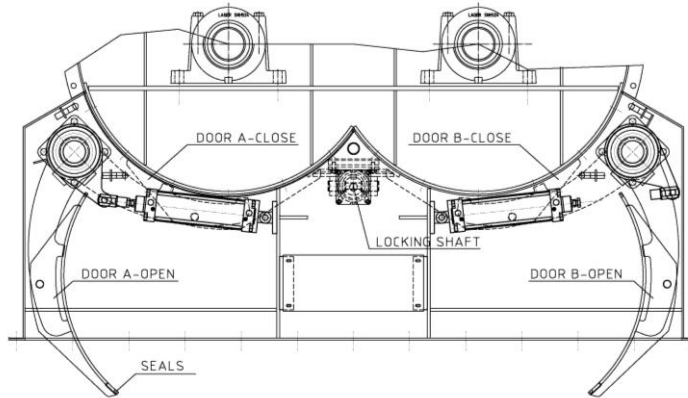
fig.4

type	effective contents KGs*	motor KW	Thickness paddles (mm)	No.of bombdoors
2100	1050	30	10mm(x24)-12mm(x4)	2

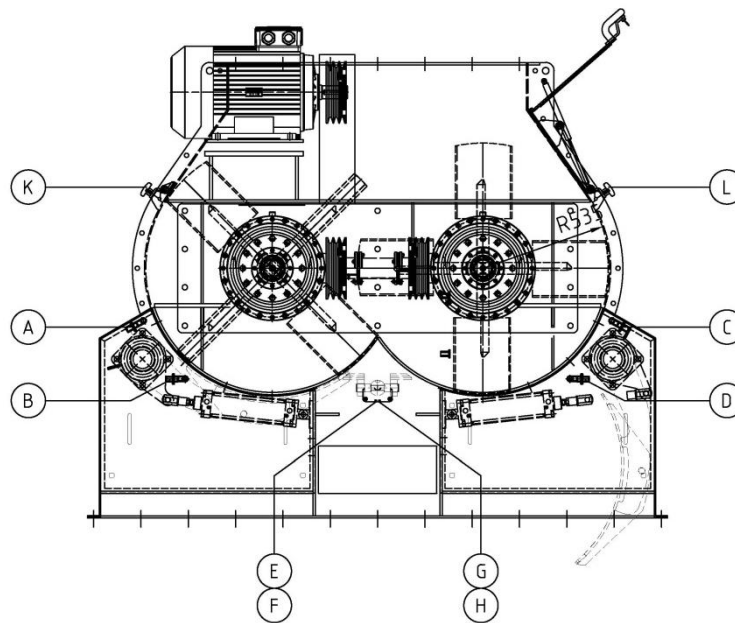
*S.W.500kgs/m³



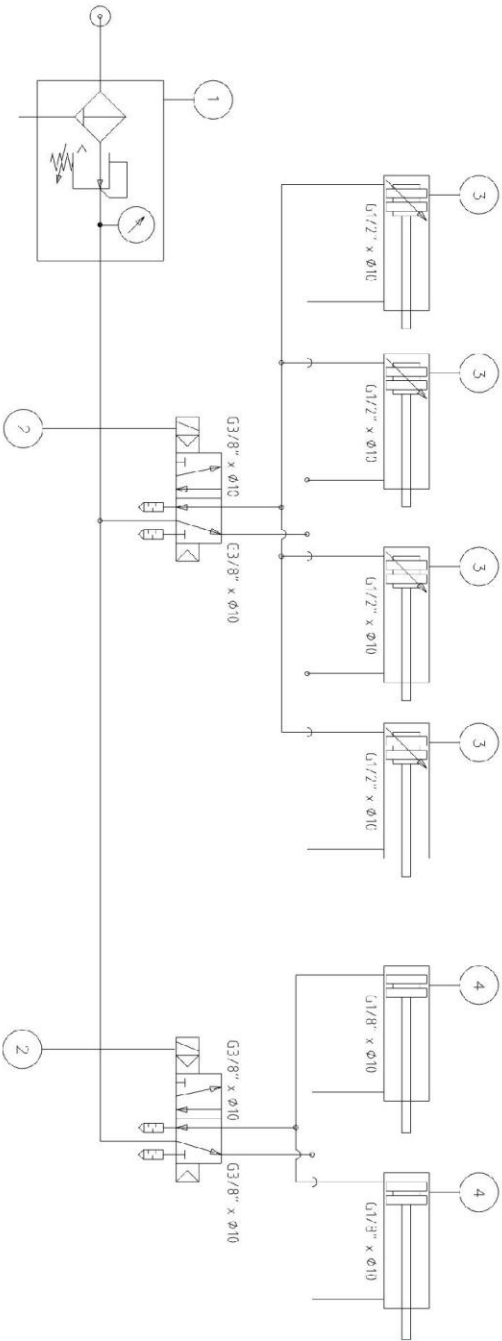
9. ELECTRO-PNEUMATIC OPERATED BOMBDOR



View from side of piston



- A: Bombdoor Left open
- B: Bombdoor Left closed
- C: Bombdoor Right open
- D: Bombdoor Right closed
- E: Doorlock DS (drive side) closed
- F: Doorlock DS open
- G: Doorlock NDS (non drive side) closed
- H: Doorlock NDS open
- K: Inspection Hatch Left closed
- L: Inspection Hatch Right closed



NO	URUN KODU	TANIM	MAZELER	JSTES	URUN KODU	TANIM	ADT
1	AM3-FADK-B	FILTR-REGULATOR	1	11			
2	55-SV923-L3E-2F	5/7 TPN RHRN1 VAL F	2	12			
3	55-CP950B100-250	SILINDR #100-250	4	13			
4	55-CP950B100-110	SILINDR #100-110	2	14			
5				15			
6				16			
7				17			
8				18			
9				19			
10				20			

REV/DTM	DESCRIPTION	DATE	PREPARED	REV NO	SCALE	MATERIAL	MODEL	QTY
	TOLERANCES: UNLESS OTHERWISE SPECIFIED							
	RANGE (mm)	F	M	C				
	0.5-0.3	0.2	0.1	0.2				
	3-0.06	0.05	0.1	0.2				
	6-0.030	0.1	0.2	0.5				
	30-0.150	0.5	0.3	0.6				
	130-0.600	0.2	0.6	1.2				
	400-0.81000	0.3	0.8	2				
	1000-0.82000	0.5	1.2	3				
	DWG REC							
	DWG NAME							
	DWG ID							
	DATE PREPARED	2016/02/23						
	DRAWN	FERTIKA/DESLEN						
	DATE	2016/02/23						
	DESIGNED							
	CHECKED	RASIM SELCUK						
	DATE	2016/02/23						
	APPROVED							
	DATE							
	DWG NAME	FEEDTECH - DPM 2100 MIKSER						
	DWG NO	R18.P02.023-1						
	REVISION							

Control sequence for:

Opening Bombdoors:

- Opening door locks (2xNo:4 cylinders) solenoid valve should be activated in a way that position sensor F door lock drive side should be on open position and door lock non-drive side G should be on closed position.
- Pneumatic cylinders connected to doors (4xNo:3 cylinders) should be activated in a way that sensors A and C should be showing open position.

Closing Bombdoors:

- Pneumatic cylinders connected to doors (4xNo:3 cylinders) should be activated in a way that sensors B and D should be showing closed position.

After that closing door locks (2xNo:4 cylinders) solenoid valve should be activated that position sensor E door lock drive side should be on closed position and door lock on non-drive side G should be on open position.