WIBRAMET
PODAJNIKI WIBRACYJNE

INSTRUCTIONS MANUAL FOR VIBRATORY BOWL FEEDER

TYPE - PW160, PW250, PW360, PW500, PW600.

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1. INTENDED USE

Vibratory feeder is intended for feeding of oriented elements in automatic assembly, packing, control, machining stations etc.

The vibratory feeder makes an integral part of the stands.

Any elements that have been put in the feeder at random are led out singly in a clearly organised (oriented) way.

The device operates in normal ambient conditions within temperature range from +5 to +35°C.

2. WARNINGS

2.1 Do not connect the feeder to the power supply network without proper supplying controller provided for this purpose.

2.2 Do not pour any liquid on the feeder during its cleaning.

2.3 Any maintenance and repair operations should be done only if the power supply plug is taken out from the power supply network socket.

2.4 Do not operate the feeder before it is set on rubber shock absorbers (7) located in the base.

2.5 Do not used feeders in any explosive atmosphere.

2.6 The electromagnetic field! People with fitted cardiac pacemakers have to keep distance of 0,5 meters from the vibratory feeder.

3. DESIGN DESCRIPTION

Vibratory bowl feeder consist of following parts:

- Bowl
- Vibrator
- Controller

Following feeder versions are manufactured:

- Anti-clockwise,
- Clockwise,

The clockwise version provides clockwise motion of components during feeder operation.

Depending on the level on noise generated by the elements, feeders can be plastic clad or painted (both are polyurethane layers).

In particular cases (when noise exceeds 80dB or at customer's request) the feeder can be equipped with a noise absorbing cover.

Standard feeder has no component orienting traps.

Orienting traps, as well as noise-absorbing covers and polyurethane layers, can be made if specifically ordered.

The vibrator has a set of flat springs (steel or plastic) and electromagnet with adjustable gap.

Electronic controllers with step-less feed speed control are supplied in various versions depending on individual arrangements made with the customer.

4. TECHNICAL DATA

Dimensions of the bowl (1) have been given as standard.

Bowls with another dimensions or shapes can be made as agreed with customer, e.g. conical, stepped, cylindrical.

For standard feeder technical parameters see table no. 1.

5. OCCUPATIONAL HEALTH AND SAFETY

It is prohibited to operate the feeder when the electromagnet guards are removed.

Remove the power supply plug from network before you remove the electromagnet guards or adjust the operating gap.

In the case of excessive noise, provide the feeder with a noise-absorbing cover.

Bowls are made from stainless steel.

Type of preparation and clean method like for stainless steel.

6. FEEDER STARTING

- Screw shock absorbers (7), 3 pcs., into feeder cast iron base (they were removed for shipment).
- Connected the power supply cable with the controller (3). Connect the controller with the power supply network 230V/50Hz.
- Operate the controller in accordance with relevant instructions attached hereto.
- Using the central bolt screw the bowl tightly to the aluminium disk.

WARNING! Any possible adjustments of the orienting traps are individual features of each feeder and are provided separately as an attachment to these instructions manual as OPERATIONAL RECOMMENTADION.

7. CONTROLLERS

Supply the feeders only from controllers intended for cooperation with vibratory feeders.

Preferred controllers are delivered with the feeder.

The controllers delivered may possess extensive functional options described in the manufacturer's instructions.

The frequency of supply vibrating feeder must be adjust to frequency of mechanical vibrations for each feeder type (see tab.1).

8. MAINTANCE

The feeder has no lubricating points and requires no special maintenance during its operation.

In the event of occurrence of noise exceeding 70dB (without any elements in the bowl) or reduction of speed, please check:

- Size of „S" electromagnet operating gap (for recommended gap to be applied in given feeder type – see Table 1 Technical Data).
- Flat springs (5) fixing – 3 pairs /tighten very strongly/.
- Operating springs (5) condition – replace any broken spring.
- Fixing the bowl (1) with central bolt.
- Fixing the electromagnet cover (6) with hexagonal socket bolts.
- If the feeder is blocked through direct contact with the noise-absorbing covers or guiding rails (outlet track).
- Compatibility of vibrating frequency with power supply frequency (3000 1/min or 6000 1/min) according to the table 1.

To check „S" operating gap size, spring fixing and their condition, please remove the electromagnet cover (6) by undoing hexagonal socket bolts, opening and moving the cover sideways.

The operating gap adjustments consist in raising or lowering 4 electromagnet fixing bolts. The gap is the same on each side.

- In the event of total absence of vibrations, please replace electromagnet coil or supplying controller.

In the case of supply the vibrating drive and the bowl, the system is regulated.

In the case of purchase only the vibrating drive (without bowl), it is necessary to adjust and regulate it to specific bowl. It means that, it is necessary to increase or decrease the number of flat springs (5) depending on needs. After adjusting of springs number, you must:

- Check the size of working gap and if it is needed, adjust it according to tab.1.
- Check the drive power consumption, it cannot be higher than the maximum value (see tab. 1).
- Check the speed of feeding.

After adjusting the number of springs (5) and after trial work (minimum 24 h) it is need to tighten the mounting screws and once again check the working gap (if it is necessary, adjust it).

9. STORAGE AND TRANSPORT

Transport the feeder on board any covered means of transport.

PW 160 and PW 250 feeders should be transported packed in carton box.

PW360, PW500 and PW600 feeders should be transported on a pallet with rubber shock absorbers (7) removed for transport purposes.

Fix the feeder on pallet at the removed shock absorbers position.

Keep the feeders in closed rooms to protected them against influence of weather conditions.

Ambient temperature: +5 to +35°C.

10. LIST OF DRAWINGS AND DOCUMENTS ATTACHED

- **Drawing 1** – vibrator.
- **Drawing 2** – vibratory feeder with bowl.
- **Table 1** – standard technical parameters.
- **Table 2** – list of important parts.
- Wiring diagram.
- EC Declaration of Conformity.

11. SERVICE PROVIDED BY

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TAB.1. STANDARD TECHNICAL PARAMETERS.

Characteristics	Unit	PW 160	PW 250	PW 360	PW 500	PW 600
Feeder mass	kg	6	16	36	73	80
Diameter D1	mm	134	210	320	460	460
Diameter D2	mm	138	207	290	390	390
Diameter D3	mm	Depends on type of bowl				
Diameter D4/D5	mm					
Height H1	mm	137	171	222	247	247
Height H2	mm	Depends on type of bowl				
Height H3	mm					
Mounting	-	Holes into bottom of absorber				
Mounting to table	-	3xM4	3xM6	3xM8	3xM8	3xM8
Central screw	-	M8	M10	M12	M16	M16
Maximum power consumption	A	0,1	0,15	0,5	0,7	0,7
Power max.	VA	25	30	120	160	160
Max. length of component	mm	20	32	55	80	110
Track width	mm	10	20	25	35	50
Power supply		230V/50Hz				
Operating gap S	mm	0,3	0,4	0,6	0,7	0,7
Vibrating frequency	1/min	6000	6000	3000	3000	3000
Noise level*	dB (A)	to 70*				

*** - The noise level has been indicated for an empty feeder and without noise cover.**

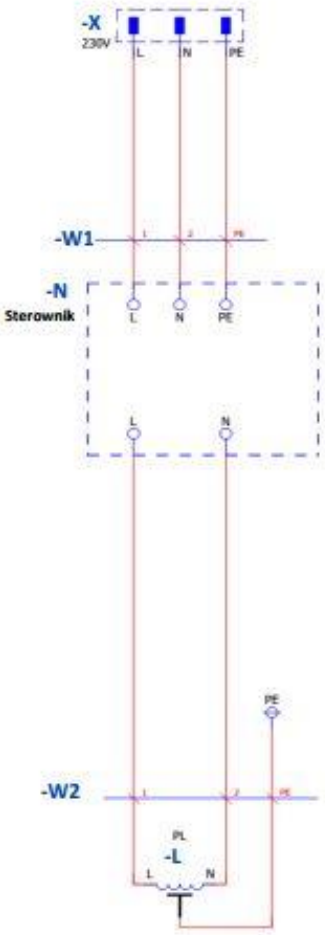
TAB.2. IMPORTANT PARTS LIST.

Drawing pos.	Name	Qty.
1.	Bowl	1
2.	Cast iron base	1
3.	Controller*	1
4.	Electromagnet	1
5.	Flat spring	3;6;9**
6.	Electromagnet cover	1
7.	Absorber 45˚Sh	3
8.	Top base Al.	1
9.	Noise cover	1
10.	Central mounting screw	1

*** - The controller is not presented in the drawing 1 and 2, preferred controller has got own manual.**

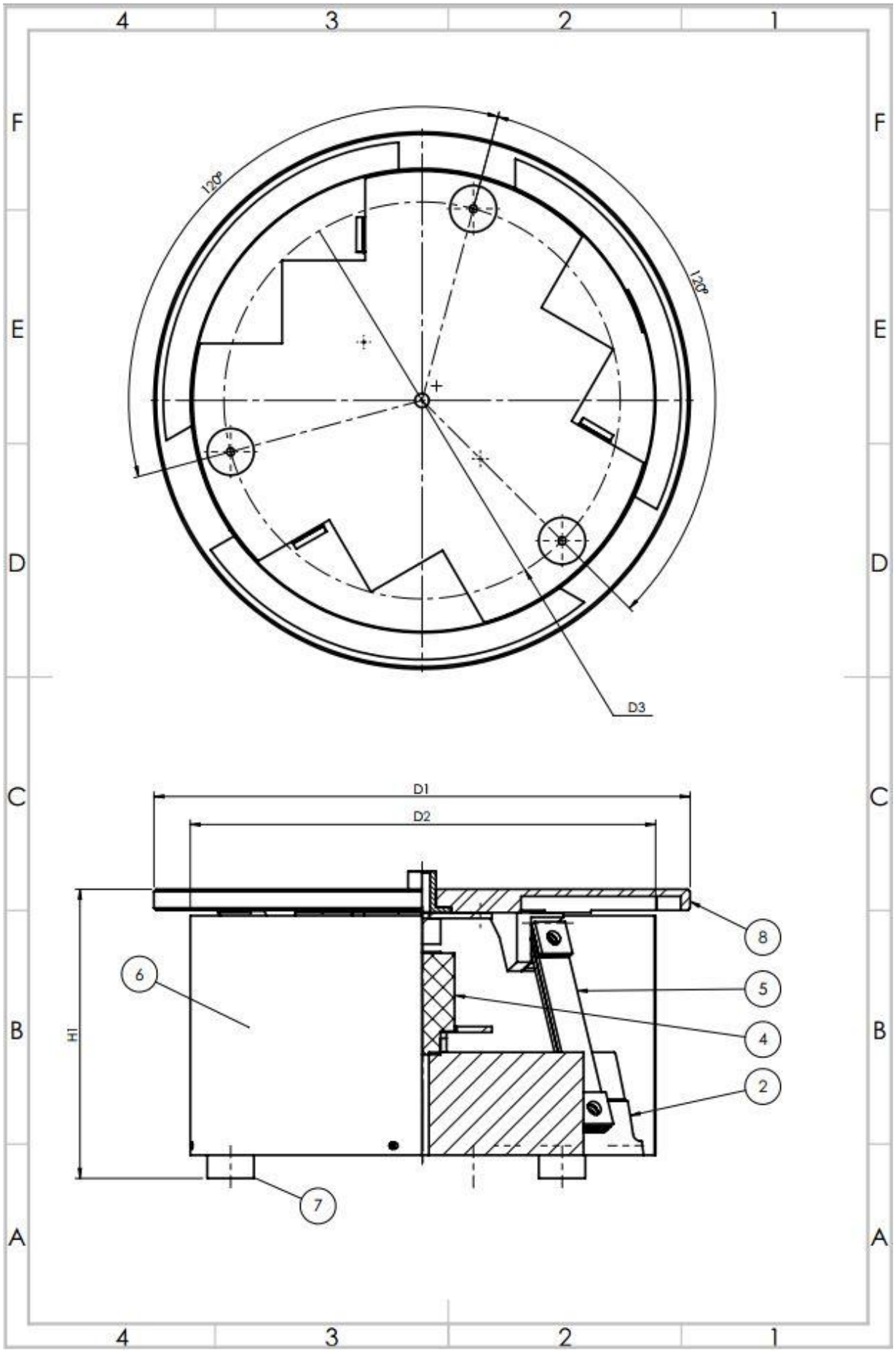
**** - Number of spring depends on chosen bowl and details of orientation.**

WIRING DIAGRAM

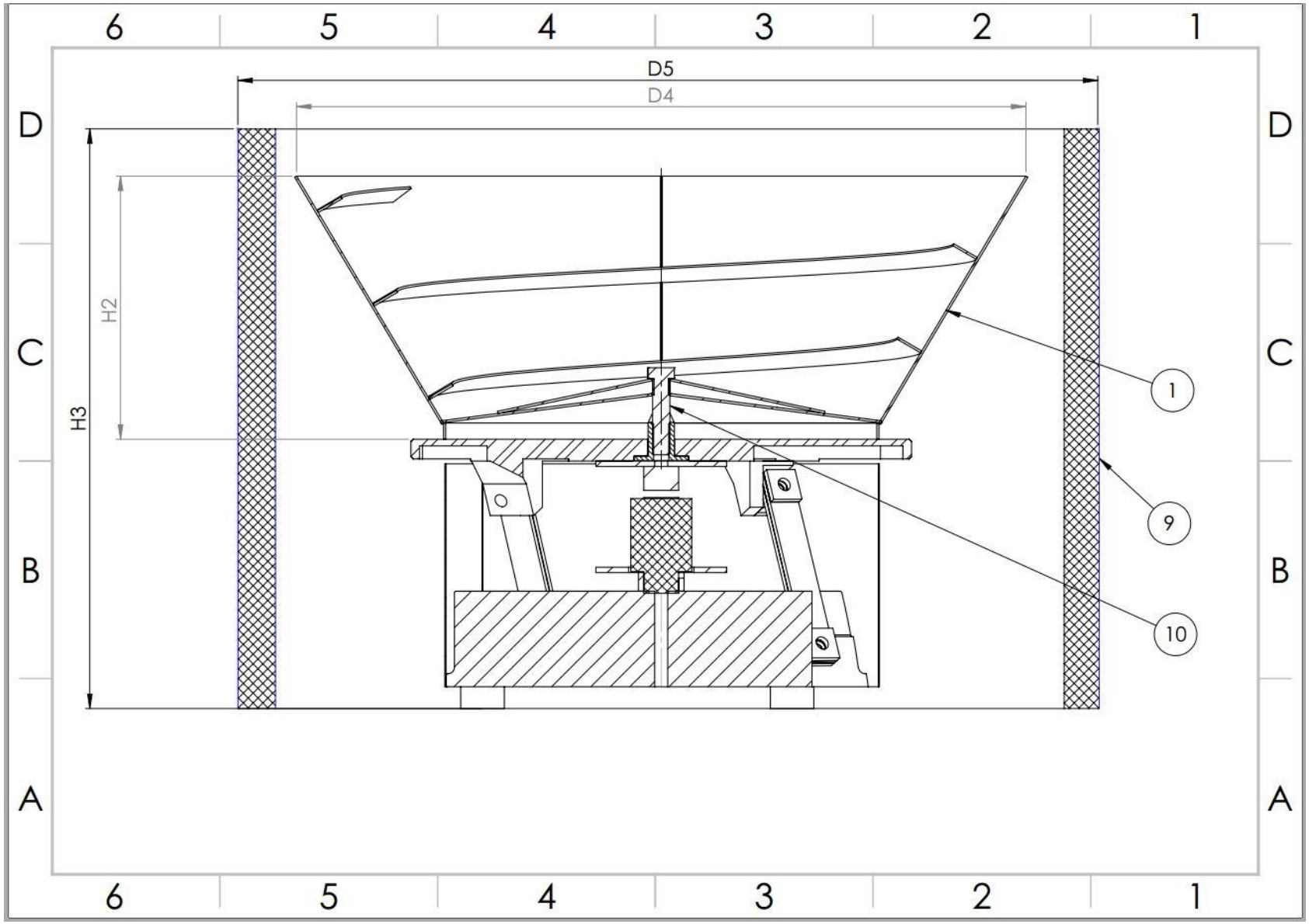


USED MARKING:

- L – electromagnet
- N – controller
- X – plug
- W1, W2 - wires



DRAWING 1. VIBRATING DRIVE UNIT TYPE PW.



DRAWING 2. VIBRATING BOWL FEEDER TYPE PW (DRIVE UNIT WITH BOWL) WITH SOUND COVER.