



**DESIGN AND PRODUCTION OF
BATCH FEEDERS, GLASS MASS
GRANULATORS, EQUIPMENT
FOR WASTE GAS FLUES**



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*Batch feeders
Glass mass granulators
Equipment for waste gas flues*

Batch feeders are designed for supplying the mixture into glass furnaces equipped with the loading pockets. Design of the batch feeders depends on the requirements to the design of the loading pocket, batch melting nature, glass making method and other factors. For different furnace structures and application conditions different types of the feeders are used: vibrating fan feeders, table feeders, rotatory plunger feeders and others. Batch and glass scrap feeders produced in Stromizmeritel can be used in production of sheet glass, glassware and other products.

The glass mass scraper granulator produced by “Stromizmeritel” consists of a metal case, made of several sections attached together, inside of which is a chain conveyor, consisting of two plate chains of roller-type with scrapers attached to them.

The granulator is designed for granulation and horizontal and inclined conveying of glass mass coming from the glass-forming machines. The granulator is a two-level scraper conveyor located in the bath with water on special guides, where the granulated glass mass arrives.

Product range includes a big number of different versions which differ in dimensions (length, width, lift height, angle of inclination, drive type etc.), as well as in additional options for operation in non-standard conditions.

“Stromizmeritel” also manufactures the following types of the equipment for waste gas flues of glass furnaces:

- shifting air-smoke dampers;
- shut-off and swinging gate valves;
- craddles and support brackets for the glass furnaces.

GLASS MASS GRANULATOR

APPLICATION

The granulator is designed for granulation and horizontal and inclined conveying of glass mass coming from the glass-forming machines. The granulator is a two-level scraper conveyor located in the bath with water on special guides, where the granulated glass mass arrives. The granulator is a continuous-running mechanism operating at the ambient temperature of +1..... + 40 °C. During big discharge of glass mass when operating with the maximal capacity the water temperature in the glass mass loading area can reach the boiling point. Upon that the system of the additional water supply shall switch on (to be performed by the customer).

Product range includes a big number of different versions which differ in dimensions (length, width, lift height, angle of inclination, drive type etc.), as well as in additional options for operation in non-standard conditions.

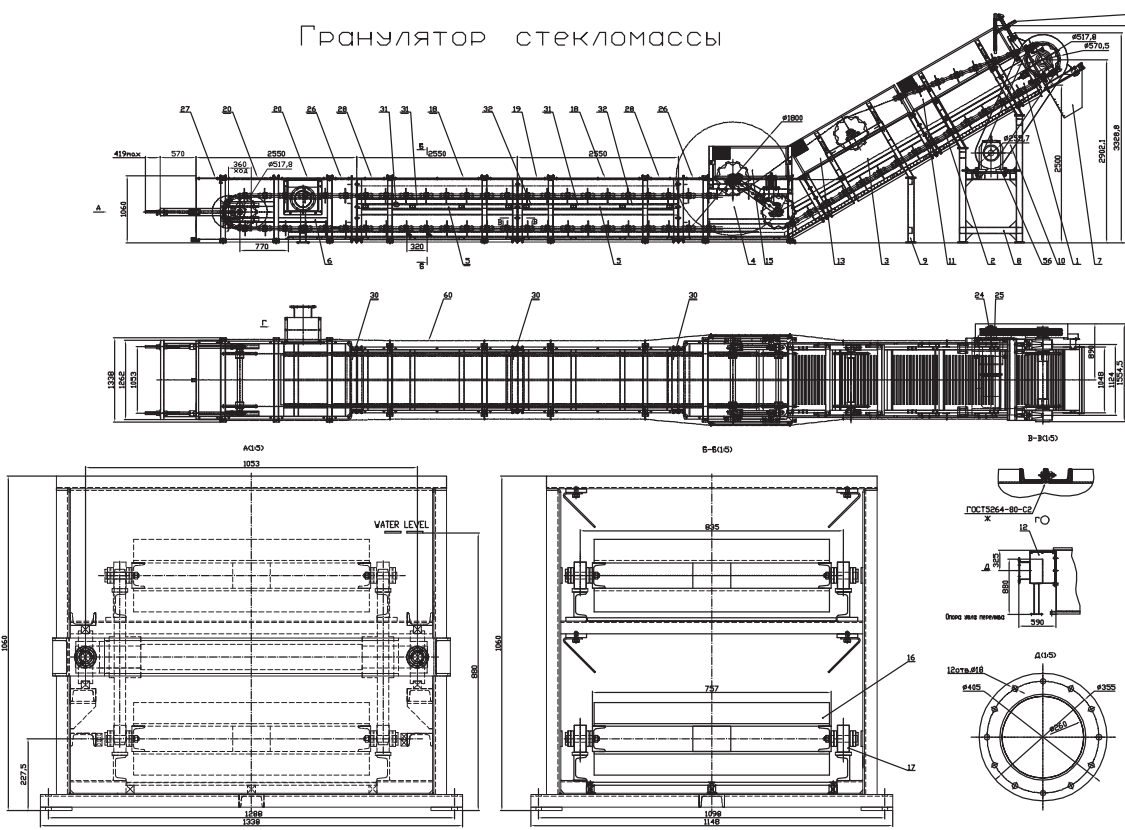
Basic technical specifications

Parameter	Value
Width of the granulator bath, mm	950
Height of the granulator bath, mm	895
Width of the working element (scraper), mm	750
Length of the horizontal part of the granulator, mm	**
Length of the inclined part of the granulator, mm	**
Length in the plan along the axis of the driven and end shafts, mm	**
Granulated material discharge level height, mm	5...7,1
Motion speed of the scrapers, m/min.	<u>3...4,37</u>
Rotation frequency of the drive sprocket, rotations/min.	10
Maximum capacity, tons/hour	Plate carrier chain M224-3-160-1
Type of the carrier chain:	GOST 588-81
	<u>Bonfiglioli C903</u>
Type of the gear motor	screw-type, 360mm
Type of the tensioning device	380
Power supply voltage, V	1,5...7,5
Nominal power, kW:	<u>**x1,55x**</u>
Overall dimensions (length x width* x height),m	**
Weight, kg, max.	—

* The width is taken from the overall dimensions of the head section

**Variable data

Гранулятор стекломассы



№	Обозначение	Наименование	Кол-во
1	СМ1.025.420	Секция приводная	1
2	СМ1.025.421	Секция прокаточная 01	1
3	СМ1.025.422	Секция прокаточная 02	1
4	СМ1.025.423	Секция поворотная	1
5	СМ1.025.424	Секция прокаточная 03	2
6	СМ1.025.425	Секция концевая	1
7	СМ1.025.426	Воронка	1
8	СМ1.025.427	Рама привода	1
9	СМ1.025.428	Станина	1
10	СМ1.025.429	Кожух	1
11	СМ1.025.430	Ограждение 01	2
12	HST-12.00.000	Звезд перепада	1
13	СМ1.025.431	Ограждение 02	2
14	СМ1.025.432	Ограждение 03	2
15	СМ1.025.433	Окрасоч	89
16	СМ1.025.434	Цель	2
17	СМ1.025.435	Кожух	2
18	СМ1.025.435 -01	Кожух	1
19	СМ1.025.435 -02	Кожух	2
20	СМ1.025.764	Датчик движения	1
21	СМ1.025.764	Датчик движения	1
24	СМ1.025.704	Матрица	1
25	СМ1.025.439	Звездочка	1
26	СМ1.025.440	Кожух	2
27	-01	Кожух	1
28	-02	Кожух	2
30	СМ1.025.442	Панель	3
31	СМ1.025.443	Панель	3
32	-01	Панель	3
56		Мотор-редуктор "ИФНГД III 1"	
		СЭБ/СМ	
		ЭБ/408-50 P55	
		DLT V	1

FAN BATCH FEEDER ZSH-550V

APPLICATION

The feeder is designed for supply of batch, glass scrap, fine and granular materials with grain size of max.20mm, density of max.2 gr/cm³, which are not inclined to adhesion when being conveyed, into glass furnaces equipped with the loading pockets, design of which secures the ambient temperature in the loading area of max.350°C.

Work conditions for fan batch feeder's exploitation:

- Temperature, °C (K).....from +5 to +60 (278...333)
- Relative humidity, %.....90 (t=25°C)
- Pressure, KPa.....84-106,7 (630-800).

BASIC TECHNICAL SPECIFICATIONS

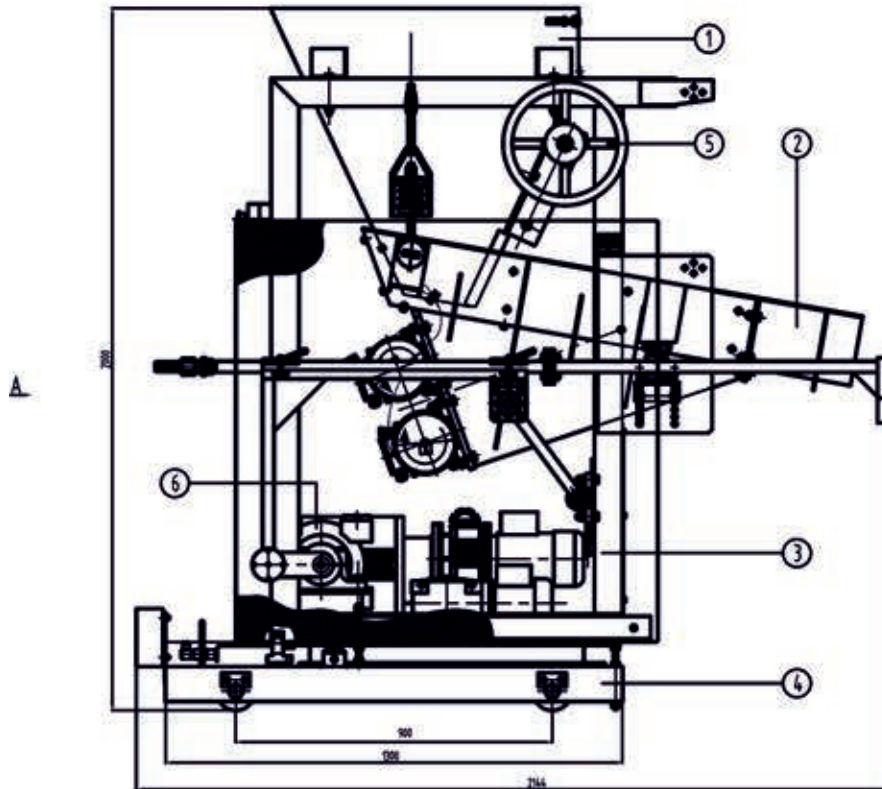
Parameters	Nominal values
Nominal capacity, tons/day	240...420
Hopper capacity, m ³	0,3
Power network characteristics	Alternating current 380±38 50
– kind of current	
– voltage, V	
– frequency, Hz	50
Water supply characteristics	0,2...0,4 +5...+30 max. 7 max. 7 max. 50 20...26
– pressure, MPa	
– temperature, °C	
– hardness, mg-eq./l	
– acidity, pH	
– suspended solids, mg/l	
– water flow, l/min.	20...26
Maximal angle of the frame deflection about the neutral axis, degrees	±15
Rotation frequency of the output shaft of the pusher drive, rotations/min	3,3...15,8
Dimensions of the shaking feeder tray PV-10	550 180 1330 10 177
– width, mm	
– height, mm	
– length, mm	
– angle of inclination to the horizontal, degrees	
– weight, kg	177
Dimensions, mm	2144 1980 1975
– length	
– width	
– height	1975
Mass, kg	780

BASIC TECHNICAL SPECIFICATIONS

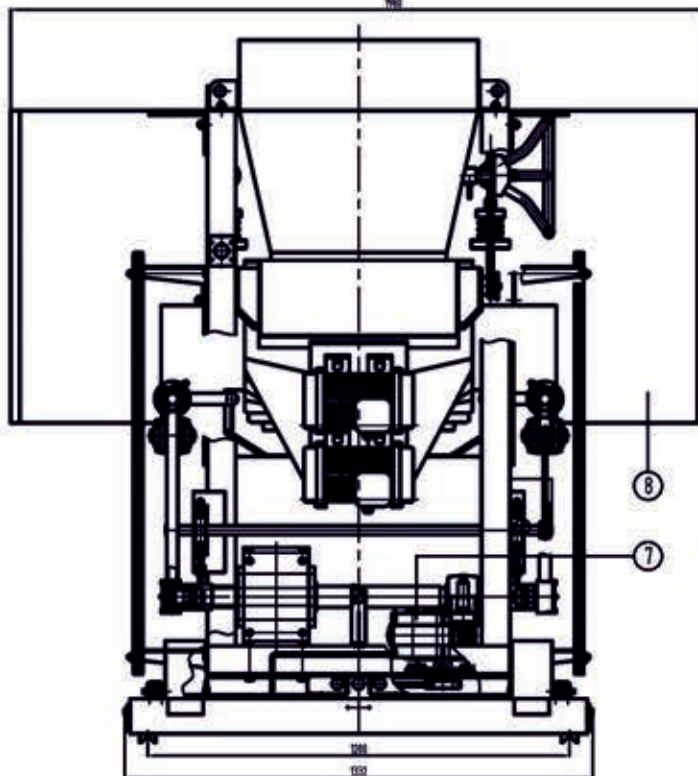
Parameters	Nominal values
1. Vibratory feeder PV-10.	
Electric vibrator.	
– Quantity, units	2
– Type	MVE 1200/3
– Energy input, kW	1,9(2x0,95)
– Source voltage, V	380±38
– Vibration generator IP Code	IP55
2. Push bar drive gear	
2.1. Electric motor	
– Type	BN90LA4
– Watt consumption, kW	1,5
– Source voltage, V	380±38
– Current frequency, Hz	50
– Rotor speed, rev/min	1410
– Electric motor IP Code	IP55
2.2. Variator	
– Type	V1 F D24 P90
– Speed controller	hand
– Speed range	1:5,5
2.3. Cone-parallel gear unit	
– Type	A503 UH50
– Flanged lip	P90
– Gear ratio	56,8
3. Swing drive group	
3.1. Electric motor	
– Type	BN71B6
– Watt consumption, kW	0,25
– Source voltage, V	380±38
– Current frequency, Hz	50
– Rotor speed, rev/min	900
– Electric motor IP Code	IP55
3.2. Worm gear drive	
– Type	W86 UFC1 100 P71
– Flanged lip	P90
– Gear ratio	100
– Output speed, rev/min	9
3.3. Gear drive	
– Type	Parallel
– Module, mm	5
– Transmission ratio	5
– Operating time for rotating frame on limit angle, sec	1,4

Загрузчик шихты ЗШ-550В

Экран поз.8 не показан



A



- ① Бункер
- ② Питатель вибрационный
- ③ Рама поворотная
- ④ Рама опорная
- ⑤ Шлибер регулируемый
- ⑥ Привод движения толкателя
- ⑦ Привод вращения рамы
- ⑧ Экран

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TABLE FEEDER ZSH-800S

APPLICATION

The feeder is designed for supply of batch, glass scrap, fine and granular materials with grain size of max.20mm, density of max.2 g/cm³, which are not inclined to adhesion when being conveyed, into glass furnaces equipped with the loading pockets, design of which secures the ambient temperature in the loading area of max.350°C.

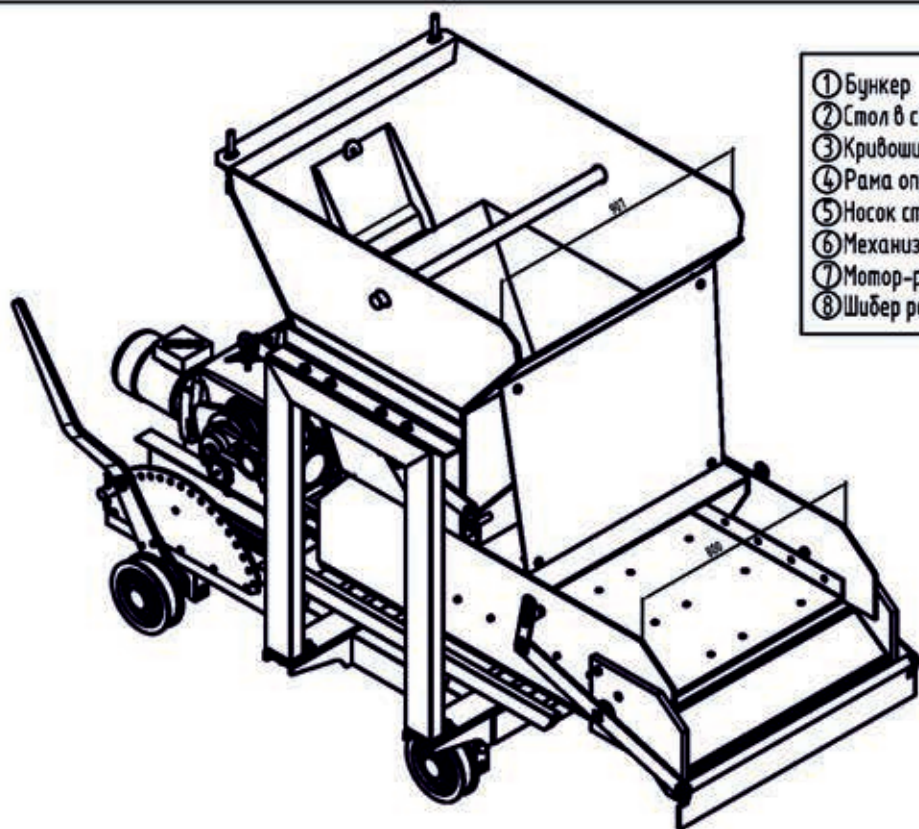
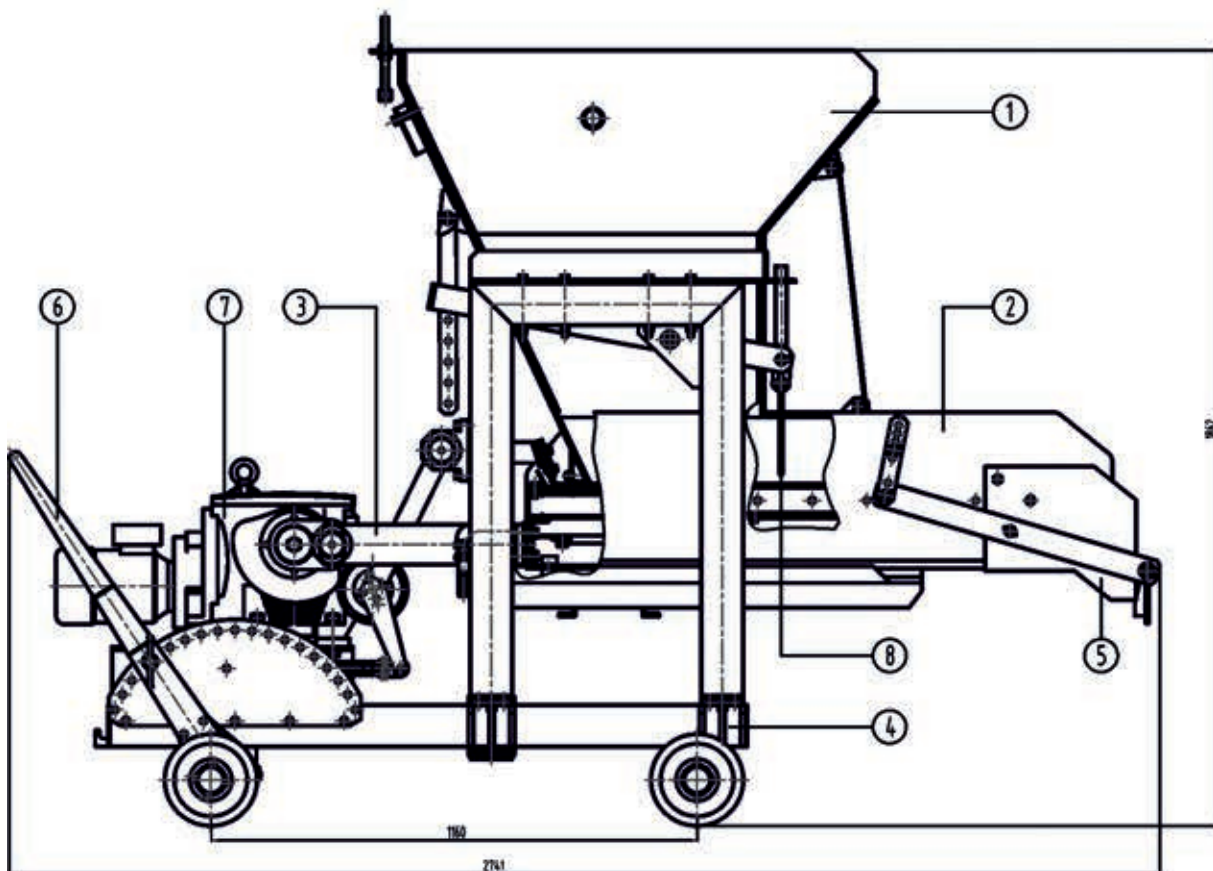
Conditions of the feeder operation:

- ambient temperature, °C (K).....from +5 to +60 (278...333)
- relative air humidity, %.....90 (at t=25°C)
- atmosphere pressure, kPa (mm Hg),.....84-106,7 (630-800)

BASIC TECHNICAL SPECIFICATIONS

Parameters and their units	Nominal values
1 Nominal capacity, tons/hour	2,2...5,9
2 Hopper volume, m ³	0,45
3. Power network characteristics – kind of current – voltage, V – frequency, Hz	alternating current 380±38 50±1
4. Water supply characteristics - pressure, MPa - temperature, °C - hardness, mg-eq/l - acidity, pH - suspended solids, mg/l	0,2...0,4 +5...+30 max. 7 max. 7 max. 50
5. Drive characteristics - Gear motor type - Power, kW - Power supply voltage, V - Current frequency, Hz - Rotation frequency of the electric motor, rotations/min. - IP code of the electric motor - Transmission ratio - Rotation frequency of the output shaft, rotations/min.	cylinder-worm SK43125LX-90L 1,5 230/400 50 1395 IP55 323,5 4
6. Table stroke, mm	180
7. Table width, mm	800
8. Dimensions, mm – length – width – height	2741 940 1861
9. Weight, kg	1180

Загрузчик шихты ЗШ-800с



- ① Бункер
- ② Стол в сборе
- ③ Кривошип в сборе
- ④ Рама опорная
- ⑤ Носок стола
- ⑥ Механизм наклона загрузчика
- ⑦ Мотор-редуктор цилиндрико-червячный
- ⑧ Шибер регулируемый

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TABLE FEEDER ZSH-1200S

APPLICATION

The feeder is designed for supply of batch, glass scrap, fine and granular materials with grain size of max.20mm, density of max.2 g/cm³, which are not inclined to adhesion when being conveyed, into glass furnaces equipped with the loading pockets, design of which secures the ambient temperature in the loading area of max.350°C.

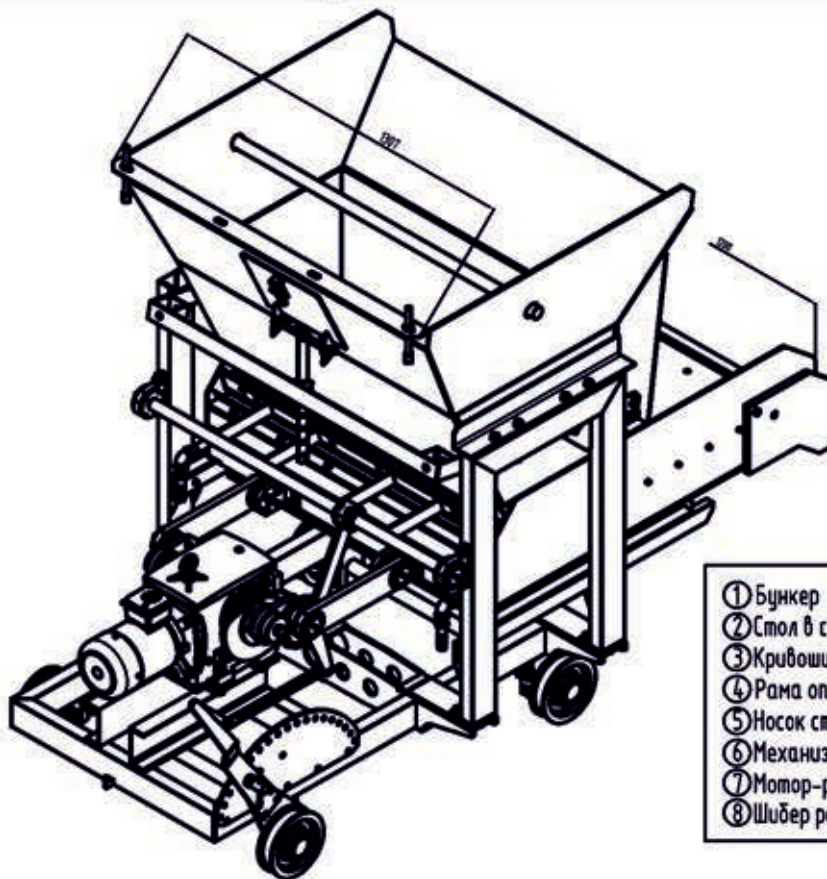
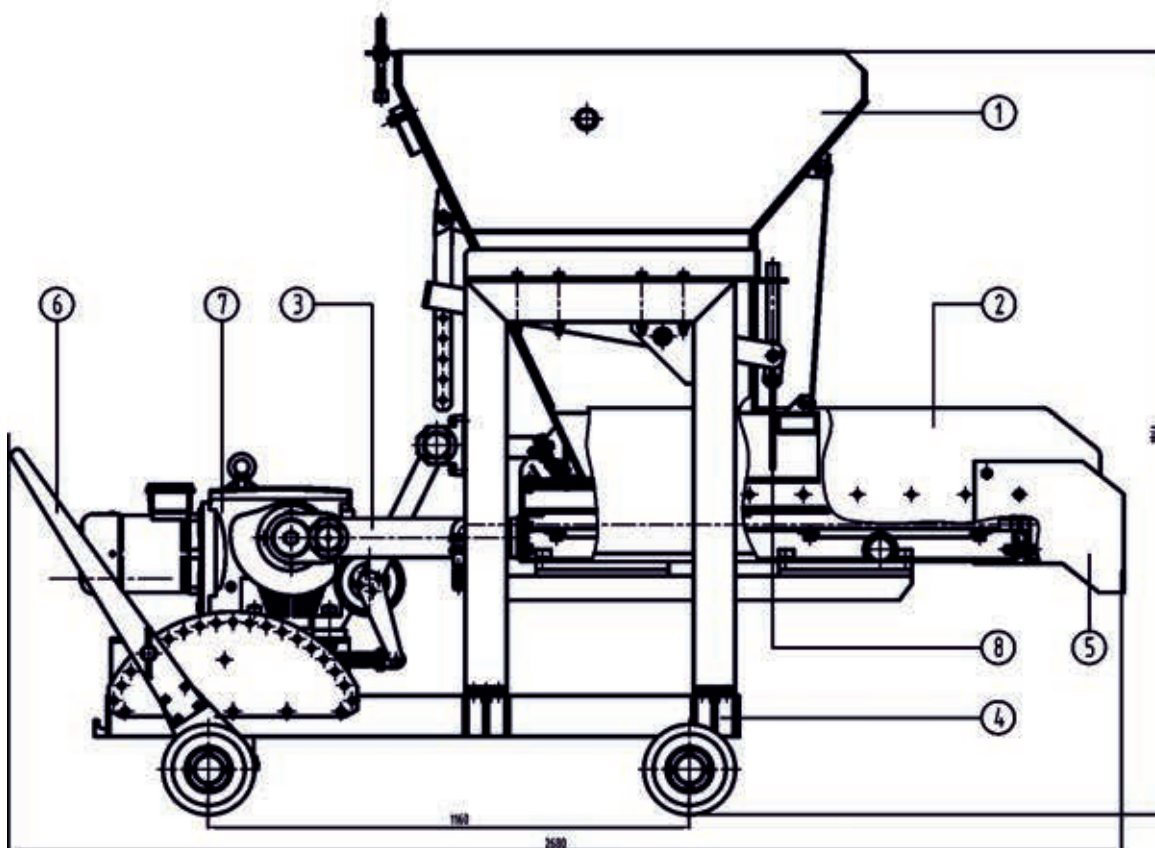
Conditions of the feeder operation:

- ambient temperature, °C (K).....from +5 to +60 (278...333)
- relative air humidity, %.....90 (at t=25°C)
- atmosphere pressure, kPa (mm Hg),.....84-106,7 (630-800)

BASIC TECHNICAL SPECIFICATIONS

Parameters and their units	Nominal values
1 Nominal capacity, tons/hour	3,3...8
2 Hopper volume, m ³	0,7
3. Power network characteristics	
- kind of current	alternating current
- voltage, V	380±38
- frequency, Hz	50±1
4. Water supply characteristics	
- pressure, MPa	0,2...0,4
- temperature, °C	+5...+30
- hardness, mg-eq/l	max. 7
- acidity, pH	max. 7
- suspended solids, mg/l	max. 50
5. Drive characteristics	
- Gear motor type	cylinder-worm SK43125LX-90L
- Power, kW	1,5
- Power supply voltage, V	230/400
- Current frequency, Hz	50
- Rotation frequency of the electric motor, rotations/min.	1395
- IP code of the electric motor	IP55
- Transmission ratio	323,5
- Rotation frequency of the output shaft, rotations/min.	4
6. Table stroke, mm	180
7. Table width, mm	1200
8. Dimensions, mm	
- length	2680
- width	1340
- height	1861
9. Weight, kg	1340

Загрузчик шихты ЗШ-1200с



- ① Бункер
- ② Стол в сборе
- ③ Кривошип в сборе
- ④ Рама опорная
- ⑤ Носок стола
- ⑥ Механизм наклона загрузчика
- ⑦ Мотор-редуктор цилиндрико-червячный
- ⑧ Шибер регулируемый

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СТРОМИ
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ROTATORY PLUNGER FEEDER ZSH-550PP

APPLICATION

The feeder is designed for supply of batch, glass scrap, fine and granular materials with grain size of max.20mm, density of max.2 gr/cm³, which are not inclined to adhesion when being conveyed, into glass furnaces equipped with the loading pockets, design of which secures the ambient temperature in the loading area of max.350°C.

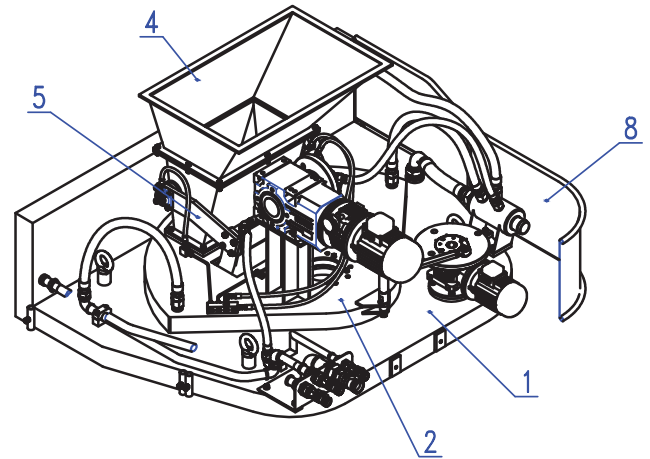
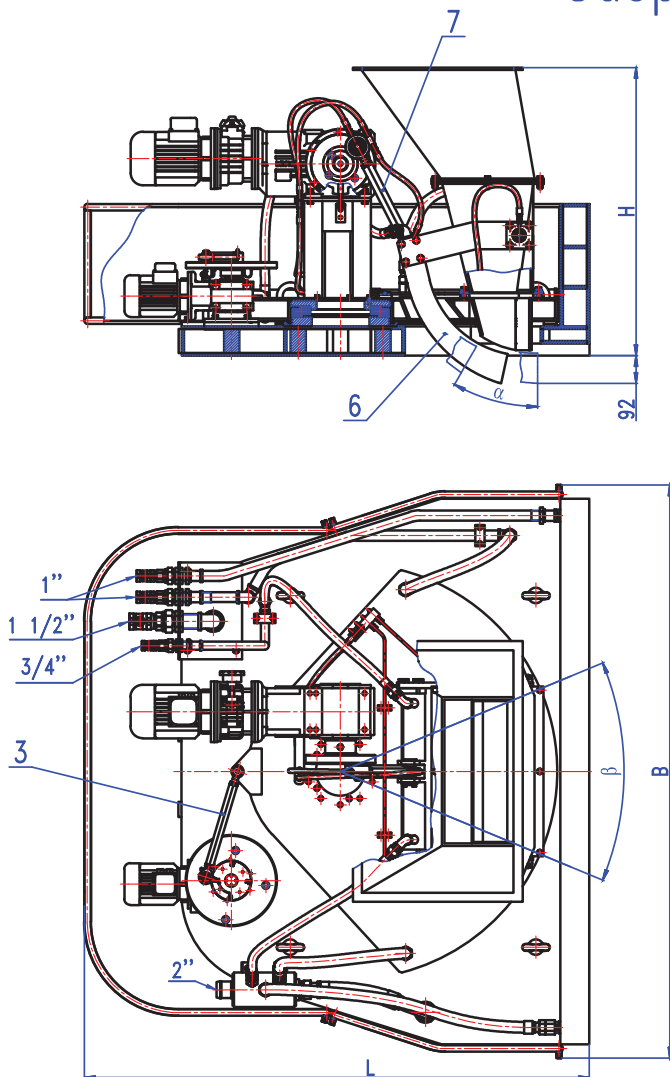
Conditions of the rotary plunger feeder operation:

- ambient temperature, °C (K).....from +5 to +60 (278...333)
- relative air humidity, %.....90 (at t=25°C)
- atmosphere pressure, kPa (mm Hg),.....84-106,7 (630-800)

BASIC TECHNICAL SPECIFICATIONS

Parameters and their units	Nominal values
1. Nominal capacity, m ³ /hour	3,3...5,7
2. Hopper capacity, m ³	0,45
3. Power network characteristics	
– kind of current	alternating current
– voltage, V	380±38
– frequency, Hz	50±1
4. Water supply characteristics	
- pressure, MPa	0,2...0,4
- temperature, °C	+5...+30
- hardness, mg-eq/l	max. 7
- acidity, pH	max. 7
- suspended solids, mg/l	max. 50
- water flow, l/min.	130
5. Drive characteristics	
- Gear motor type (with variable-speed transmission)	cylinder-bevel
- Power, kW	1,1
- Power supply voltage, V	230/400
- Current frequency, Hz	50
- Rotation frequency of the electric motor, rotations/min.	1395
- IP code of the electric motor	IP55
6. Plunger travel, mm	500
7. Plunger width, mm	550
8. Dimensions, mm	
– length	1500
– width	1900
– height	1010
9. Weight, kg	1070

Загрузчик шихты ЗШ-550nn



1. Основание.
2. Стол поворотный.
3. Штанга стола.
4. Бункер.
5. Рычаг.
6. Плунжер.
7. Штанга плунжера.
8. Ограждение.

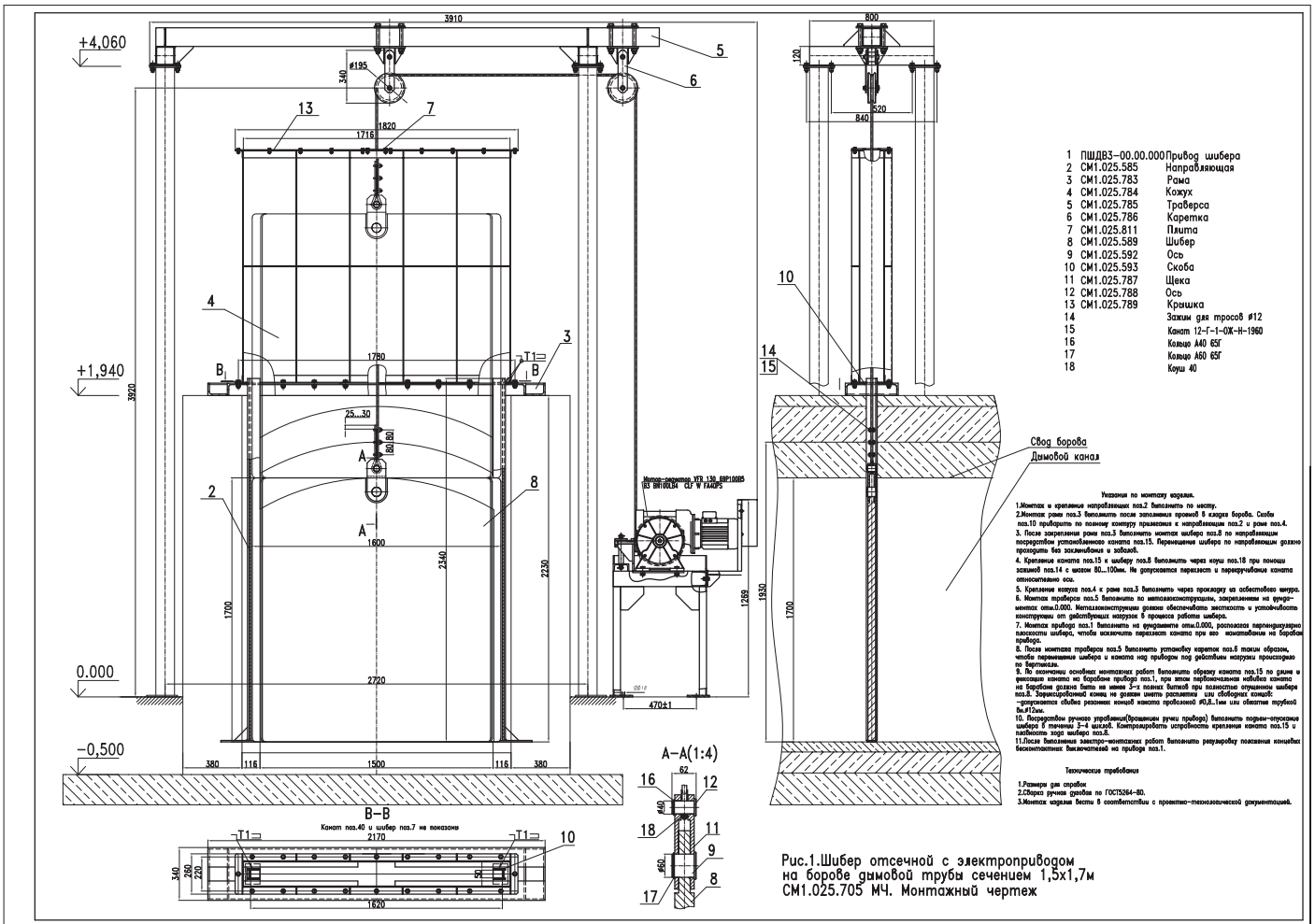
SHUT-OFF AIR-SMOKE DAMPER WITH ELECTRIC DRIVE

APPLICATION

The shut-off air-smoke damper with electric drive is used for shut-off waste-gas flue to main stack and for regulation of stack draft or shut-off waste-gas flue during glass furnace cold repair.

BASIC TECHNICAL SPECIFICATIONS

Parameter name	Value
Waste-gas flue dimensions, mm	1500x1700
Thread of damper, mm	1700
Damper traverse speed, m/s	0,2
Control	remote/manual
Gear-motor drive type	VFR130 69 P100B5 B3 BN100LB4 CLF W
Power network voltage, V	FA69PS
Drive rating, kW	380
Gear rotational moment, Nm	3,0
Gear-motor drive shaft speed, 1/min	1066
Mass, kg	20,4
Exhaust gas temperature, °C	957
Ambient temperature, °C	+600
	-30...+40



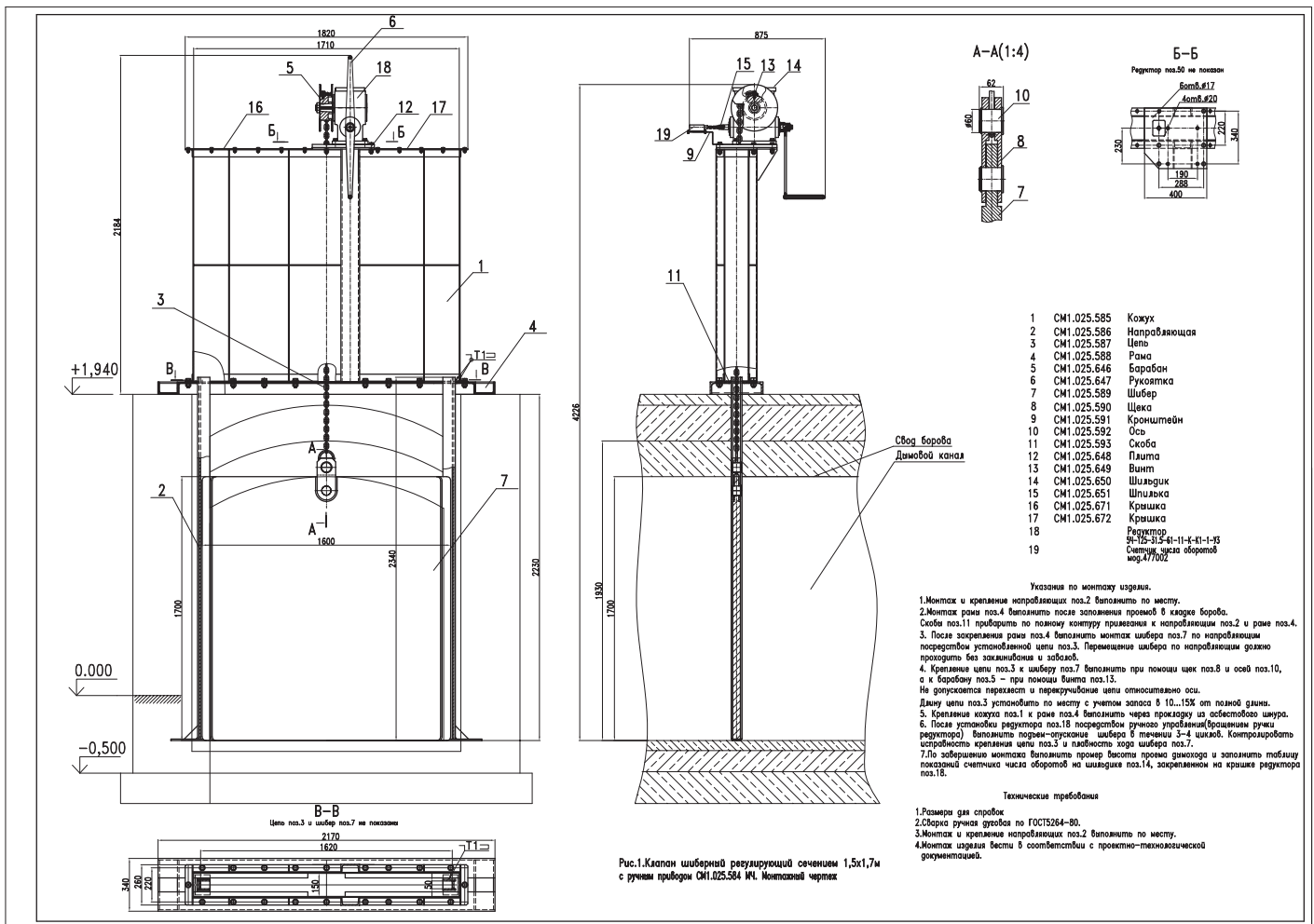
MANUAL SHUT-OFF AIR-SMOKE DAMPER

APPLICATION

Manual shut-off is used for shut-off and manual control of chimney flue clear opening from regenerator section.

BASIC TECHNICAL SPECIFICATIONS

Parameter name	Value
Waste-gas flue dimensions, mm	1500x1700
Thread of damper, mm	1700
Control	Manual
Gear-motor drive type	54-125-31,5-61-11-K-K1-1
Damper position checking	Visual/ count of a rate speed counter
Mass, kg	1040
Exhaust gas temperature, °C	+600
Ambient temperature, °C	20±10



SHIFTING AIR-SMOKE DAMPER

APPLICATION

The shifting air-smoke damper is used for periodic shut-off waste-gas flue and air end in the process of flame direction changing in tank furnaces.

BASIC TECHNICAL SPECIFICATIONS

Parameter name	Value
Waste-gas flue dimensions, mm	1500x1700
Thread of damper, mm	1800
Damper traverse speed, m/s	0,3
Control	remote/manual
Gear-motor drive type	WR110 U 40 P100 BN100LB4 230/400-50 IP54 CLF W FA40 PS
Power network voltage, V	380
Drive rating, kW	3,0
Gear rotational moment, Nm	618
Gear-motor drive shaft speed, 1/min	35
Mass, kg	825
Exhaust gas temperature, °C	+600
Ambient temperature, °C	-30...+40

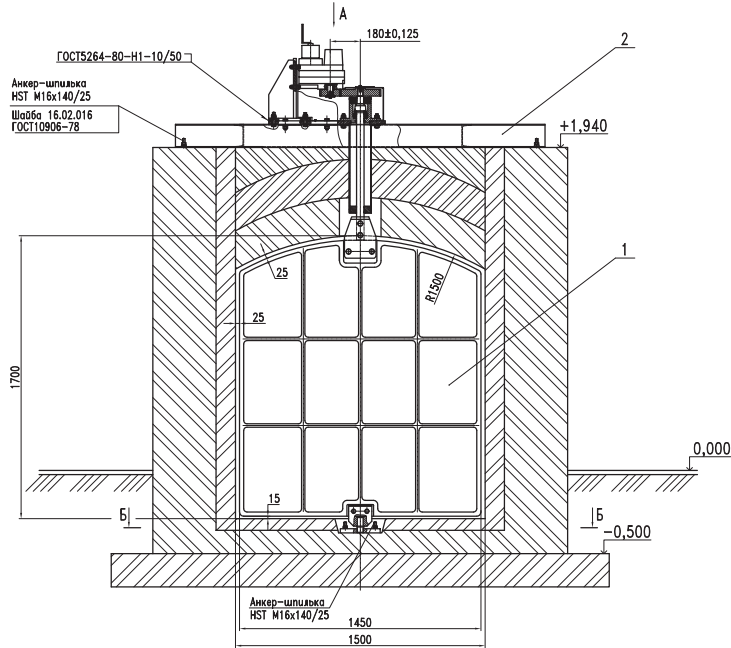
SWINGING DAMPER

APPLICATION

The swinging damper is used for automatic control of constant pressure in furnace atmosphere.

BASIC TECHNICAL SPECIFICATIONS

Parameter name	Value
Waste-gas flue dimensions, mm	1500x1700
Damper swing angle, mm	90°
Damper swing speed, deg/s	0,57
Control	Remote/manual
Gear-motor drive type	MЭO-250/63-0,63-P-Y3-240B
Power network voltage, V	220
Drive rating, kW	ref. gear-motor drive data sheet
Gear rotational moment, Nm	250
Gear-motor drive shaft speed, 1/min	ref. gear-motor drive data sheet
Mass, kg	497
Exhaust gas temperature, °C	+600
Ambient temperature, °C	-30...+40



№	Обозначение	Наименование	Примеч.
1	ШР4-00.00.000	Шибер регулирующий рамный	1
2	ШР4-06.00.000	Рама	1
4		Болт М16х80.66.018	6
5		Гайка М16-6Н.5.019	6
6		Шайба 16.65Г.029	6
7		ГОСТ 6402-70	6
8		Шайба 16.02.016	6
		ГОСТ10906-78	6
		Шайба 16.01.09	6
		ГОСТ11371-78	

Указания по монтажу изделия.

1. Перед установкой шибера срезать технологические цапфы.
2. После установки шибера выставить раму, обеспечить свободное его вращение.
3. Обеспечить допуск параллельности оси шестерни и оси колеса зубчатого $\pm 0,05$ мм.
4. Ось стрелки В должна быть параллельна плоскости шибера и указывать по шкале угол открытия шибера точностью в 1°.

Технические требования

1. Размеры для справок
2. Сварка ручная дуговая по ГОСТ5264-80.
3. Монтаж изделия вести в соответствии с проектно-технологической документацией.

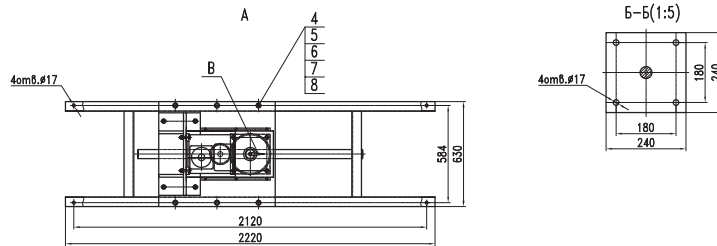


Рис.1. Клапан шиберный поворотный, сечением 1,5х1,7м ШР4-00.00.000МЧ. Монтажный чертёж