

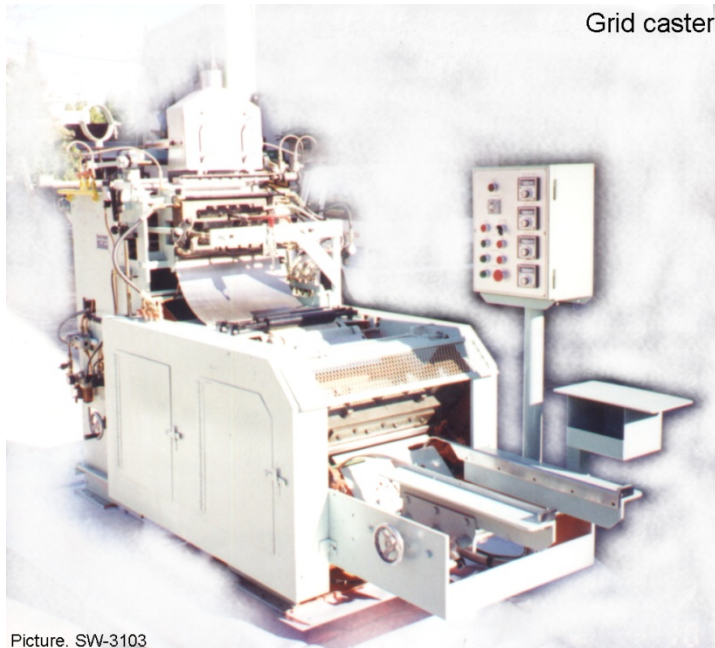
UNIKOR BATTERY TECHNOLOGY

Lead-Acid Battery Manufacturing Equipment

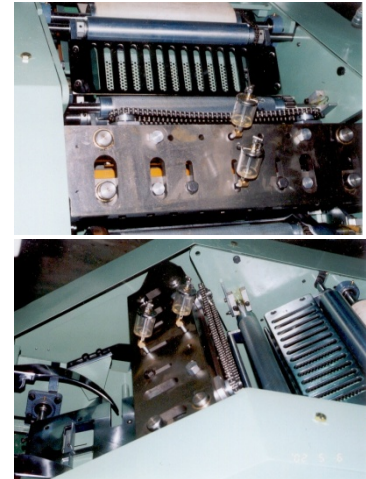
UKB(Unikor Battery) CO., LTD. KOREA
<http://www.ukbkorea.com>

GRID CASTER ...

GRID CASTER (UNGS)



Picture. SW-3103



Adjustable Trimming Die

Technical data

Production capacity

10 to 16 double grid panels(usually 15 panels)per minute are available depending on alloy, grid & thickness.

Standard electrical : 220/380 Volt, 3phase, 60Hz or as required.

Electric consumption : total 7.55kw

Working motor : 0.75kw

Mold heater : 0.9kwx2pcs.

Ladle heater : 3kw

Feed line heater : 0.9kw(H)

Feed line heater : 1.1kw(V)

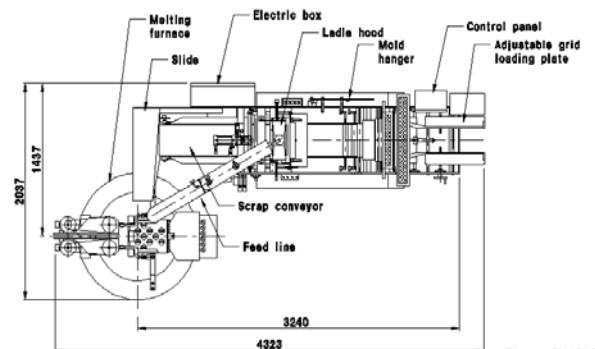
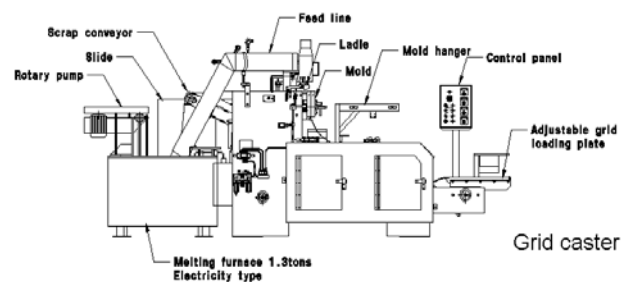
Necessary air pressure : 5 ~ 7kg/cm²

Water consumption : 500liter/hour

Operating personnel : One can operate two or three machine

Size : 4,343Lx2,037Wx1,850Hmm
(Including melting furnace)

Weight : 1,370kg
(Excluding melting furnace)



Picture. SW-3102

Grid caster

Melting furnace
for grid caster

Cooling unit for
grid caster

UNIKOR INDUSTRY

Industrial flat grid caster

- automatic -

Spine grid extruder & Trimming cutter

Industrial flat grid caster
- automatic -

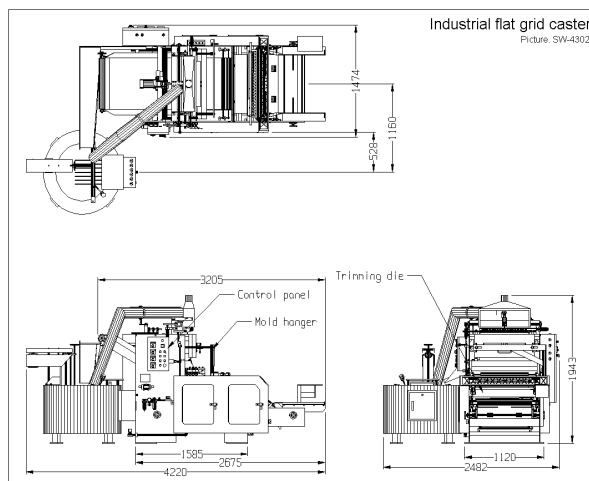
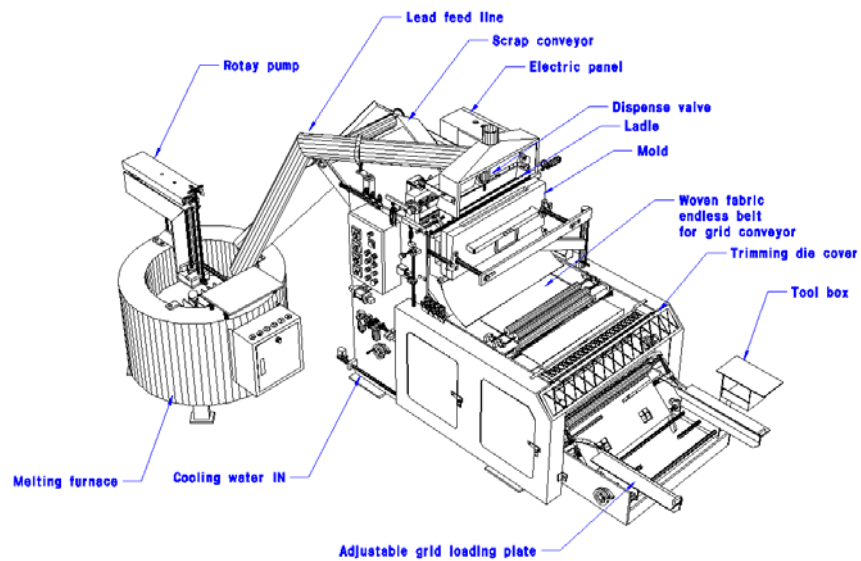
Industrial flat grid caster
- semi-automatic -

Industrial spine grid caster
- manual -

INDUSTRIAL CASTER ...

Industrial flat grid caster
Picture: SW-4301

IND. GRID CASTER (UNGS-IND)



Grid caster - Technical data

Production capacity : 3 ~ 4 grids per minute

Operating personnel : One can operate two or three machines.

Producible plate size

W : up to 620mm

H : up to 150mm

T : up to 6.5mm

Standard electrical : 220/380 Volt, 3phase, 60Hz or as required.

Electricity consumption : Total 15.7kw

Motor : 1.5kw

Mold heater : 1.8kw x 4pcs.

Ladle heater : 5kw

Feed line (horizontal) heater : 0.9kw

Feed line (vertical) : 1.1kw

Necessary air pressure : 5 ~ 7kg/cm²

Water consumption : 500 liter/hour

Size : 3,205Lx1,474Wx1,943Hmm

Weight : 1,800kg

Electric melting furnace - Technical data

Production capacity : 1.3 ton

Standard electrical : 220/380 Volt, 3phase, 60Hz or as required.

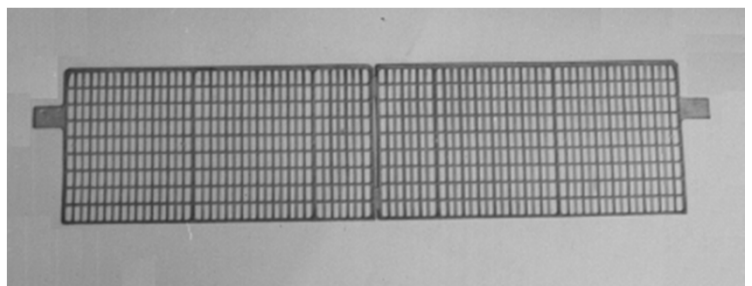
Electricity consumption :

Melting furnace heater : 5kw x 6pcs.

Rotary pump motor : 0.75kw

Size : 1,100Lx1,576Wx1,340Hmm

Weight : 410kg



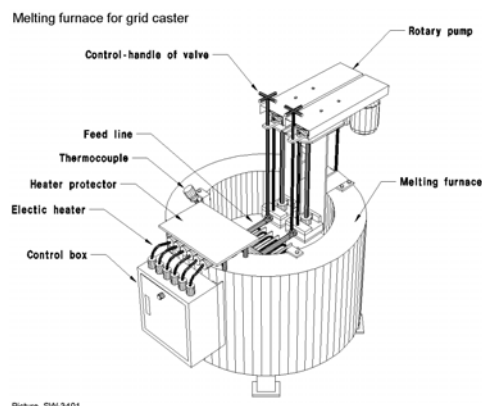
560Wx142Hx4.2T Grid

UNIKOR INDUSTRY

Melting furnace for grid caster

GRID CASTER ...

Electric melting furnace (UNGS-13E)



*Dimensions in parenthesis of () are for 2.0 ton capacity.

Technical data

Production capacity : 1.3 ton (2.0ton)

Standard electrical : 220/380 Volt, 3phase, 60Hz or as required.

Electricity consumption : Total 31.5kw

Melting furnace heater : 5kw x 6 = 30kw

Rotary pump motor : 0.75kw x 2pcs.

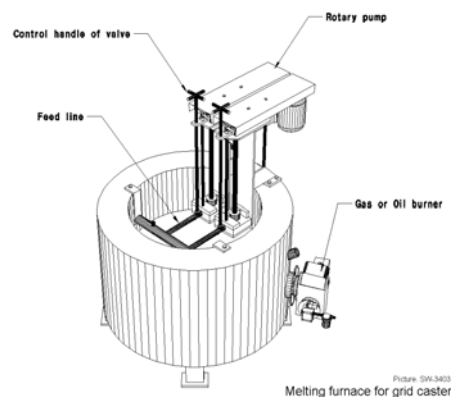
Necessary melting time : 2 hours

Suggesting temperature of melting furnace : 400 °C

Size : 1,100Wx1,576Lx1,340Hmm
(1,300Wx1,776Lx1,340Hmm)

Weight : 470kg (540kg)

Gas & Oil melting furnace (UNGS-13G / UNGS-13-O)



Technical data

Production capacity : 1.3 ton // 2ton

Standard electrical : 220/380 Volt, 3phase, 60Hz or as required.

Electricity consumption :

Rotary pump motor : 0.75kw x 2pcs.

Necessary melting time : 2 hours

Suggesting temperature of melting furnace : 400 °C

Size (1.3ton) : 1,354Wx1,345Lx1,340Hmm

Size (2ton) : 1,554Wx1,545Lx1,340Hmm

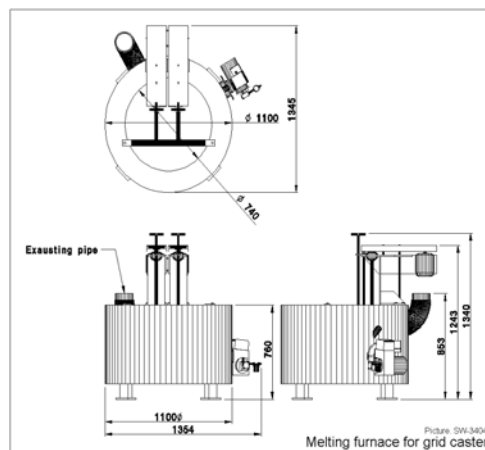
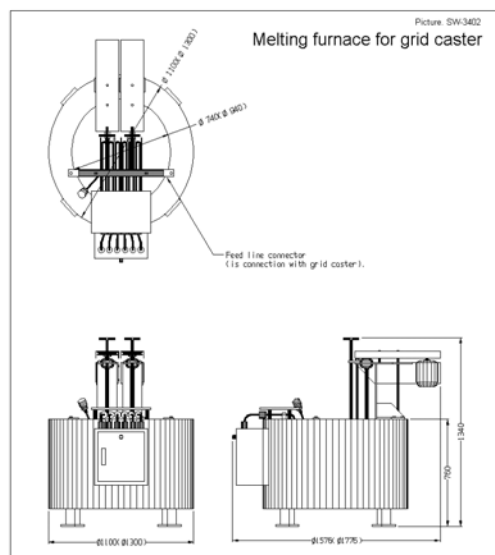
Weight (1.3ton) : Oil burner type - 870kg
Gas burner type - 980kg

Weight (2ton) : Oil burner type - 940kg
Gas burner type - 1,050kg

Grid caster

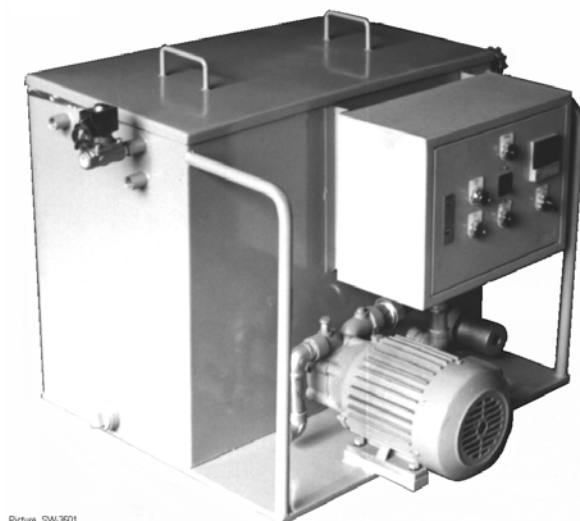
Melting furnace for grid caster

Cooling unit for grid caster



CCS TANK (UNGS-CU)

Cooling unit for grid caster



Picture: SW3501

Technical data

Pump

Quantity of flow : 20 liters per minute(60Hz)

Quantity of flow : 13 liters per minute(50Hz)

Head : 27M(60Hz), 16M(50Hz)

Standard electrical : 220/380 Volt, 3phase, 60Hz or as required.

Electric consumption : total 3.75kw

Pump motor : 0.75kw

Heater : 3kw

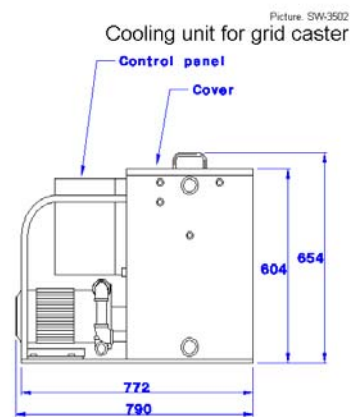
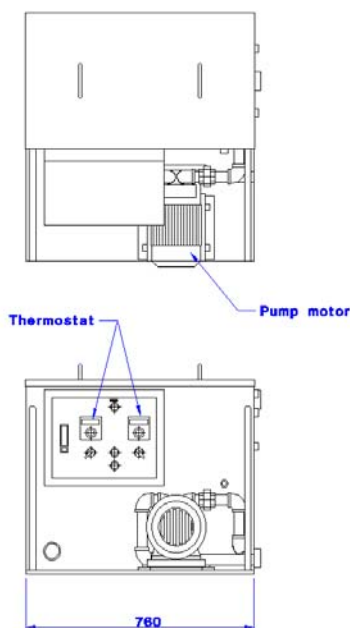
Size : 800Wx1,000Lx700Hmm

Weight : 140kg

Grid caster

Melting furnace
for grid caster

Cooling unit for
grid caster

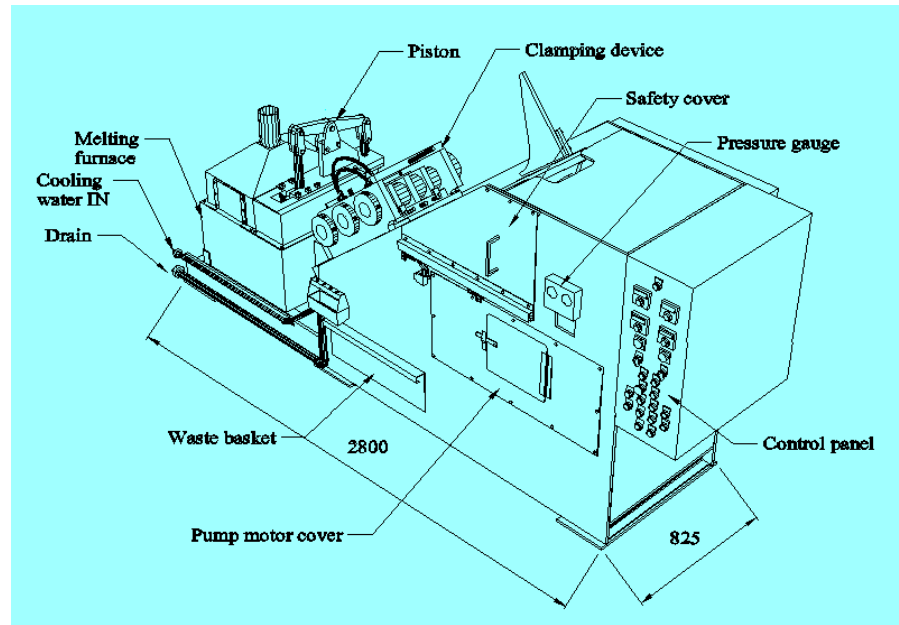


Picture: SW3502

INDUSTRIAL CASTER ...

SPINE CASTER(UNSP-POS-19)

- For 14-19 spines -



Spine grid extruder - Technical data

Production capacity : 2~4 grids per minute If well experienced operator, we expect more than 3 grids per minute.

Grid size castable : Spine grid extruder can produce grids of 14 and 19 spines up to 450mm of length.

Necessary number of operator : One operator can one extruder and one trimming cutter.

Standard electrical : 220/380V, 3phase, 60Hz or as required.

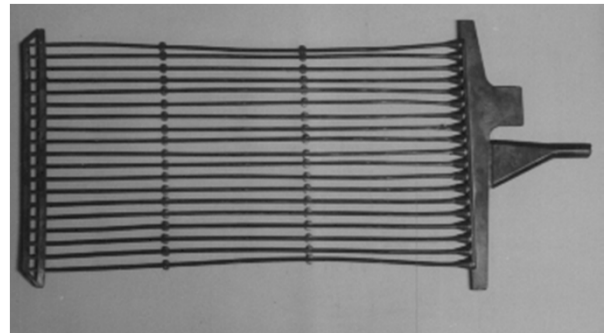
Electricity consumption : Total 23.2kw
 Pump motor : 3.7kw
 Mold heater : 0.8kw x 3pcs .
 Melting furnace heater : 5kw x 3pcs .
 Nozzle heater : 0.35kw x 6pcs.

Lead melting furnace capacity : 750kg

Water consumption : 360 liter per hour

Size : 3,175Lx1,000Wx1,670Hmm

Weight : 2,550kg



19 spines

Spine grid extruder & Trimming cutter

Industrial flat grid caster
- automatic -

Industrial flat grid caster
- semi-automatic -

Industrial spine grid caster
- manual -

Trimming cutter - Technical data

Production capacity : 2 grids per minute

Grid size castable : Trimming cutter can produce grids of 14 and 19 spines up to 450mm of length.

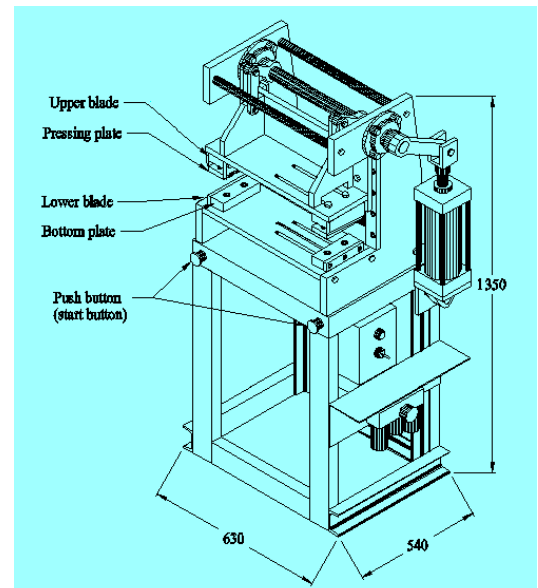
Necessary number of operator : One operator can one extruder and one trimming cutter.

Standard electrical : 220 Volt, 2phase, 60Hz or as required.

Necessary air pressure : 5 ~ 7kg/cm²

Size : 720Lx600Wx1,352Hmm

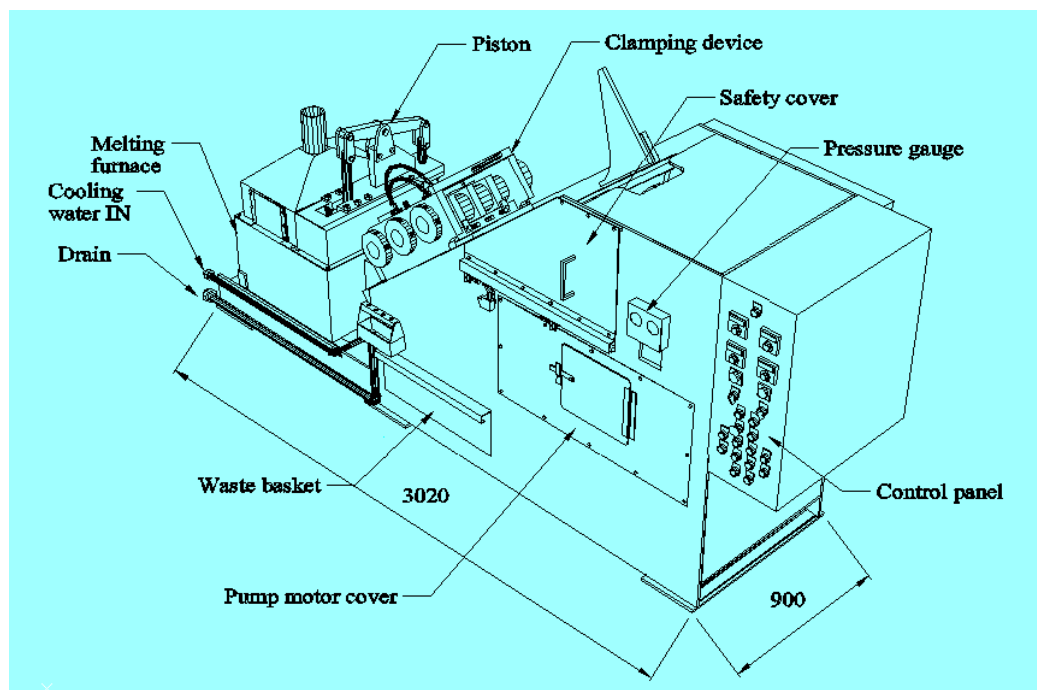
Weight : 220kg



INDUSTRIAL CASTER ...

SPINE CASTER (UNSP-POS-25)

- For 25 spines -



Spine grid extruder - Technical data

Production capacity : 2~4 grids per minute If well experienced operator, we expect more than 3 grids per minute.

Grid size castable : Spine grid extruder can produce grids of 25 spines up to 450mm of length.

Necessary number of operator : One operator can one extruder and one trimming cutter.

Standard electrical : 220/380V, 3phase, 60Hz or as required.

Electricity consumption : Total 29.4kw

Pump motor : 7.5kw / Mold heater : 0.8kw x 6pcs .

Melting furnace heater : 5kw x 3pcs .

Nozzle heater : 0.35kw x 6pcs.

Lead melting furnace capacity : 1ton

Water consumption : 360 liter per hour

Size : 3,400Lx1,050Wx1,670Hmm

Weight : 2,850kg

Spine grid
extruder
& Trimming cutter

Industrial flat grid
caster
- automatic -

Industrial flat grid
caster
- semi-automatic -

Industrial spine
grid caster
- manual -

Trimming cutter - Technical data

Production capacity : 2 grids per minute

Grid size castable : Trimming cutter can produce grids of 25 spines up to 450mm of length.

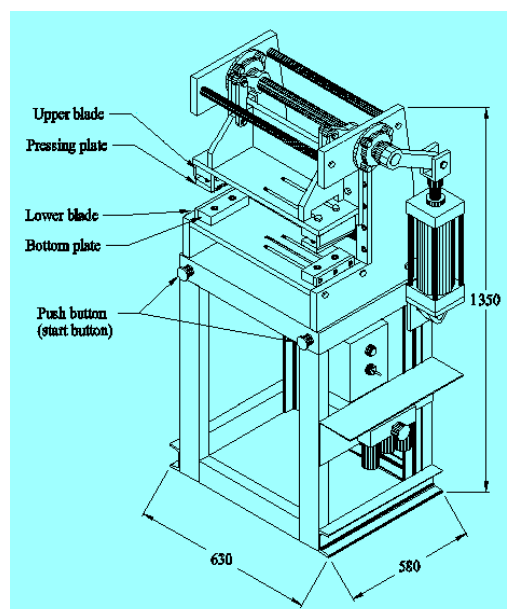
Necessary number of operator : One operator can one extruder and one trimming cutter.

Standard electrical : 220 Volt, 2phase, 60Hz or as required.

Necessary air pressure : 5 ~ 7kg/cm²

Size : 720Lx640Wx1,352Hmm

Weight : 250kg



Spine grid extruder & Trimming cutter

Industrial flat grid caster - automatic -

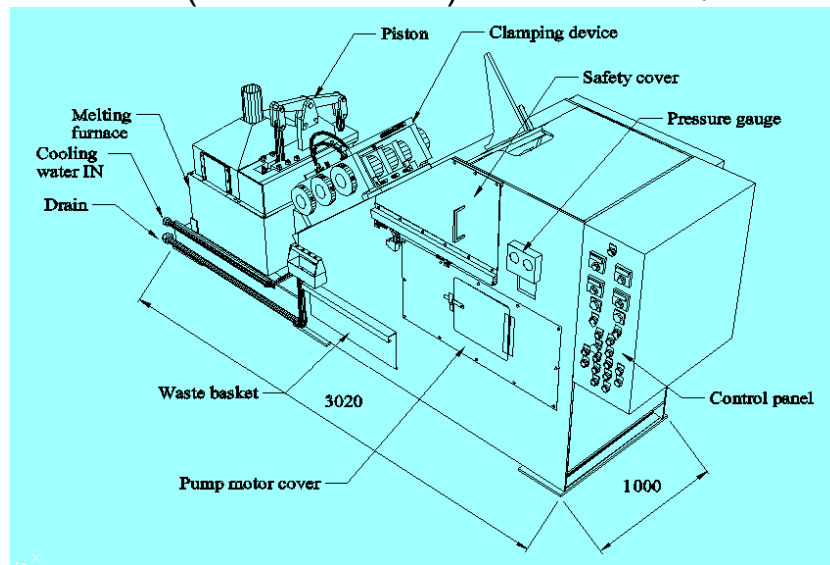
Industrial flat grid caster - semi-automatic -

Industrial spine grid caster - manual -

INDUSTRIAL CASTER ...

SPINE CASTER (UNSP-POS-34)

- For 34 spines -



Spine grid extruder - Technical data

Production capacity : 2~4 grids per minute If well experienced operator, we expect more than 3 grids per minute.

Grid size castable : Spine grid extruder can produce grids of 34 spines up to 450mm of length.

Necessary number of operator : One operator can one extruder and one trimming cutter.

Standard electrical : 220/380V, 3phase, 60Hz or as required.

Electricity consumption : Total 29.4kw
Pump motor : 7.5kw / Mold heater : 0.8kw x 6pcs .
Melting furnace heater : 5kw x 3pcs .
Nozzle heater : 0.35kw x 6pcs.

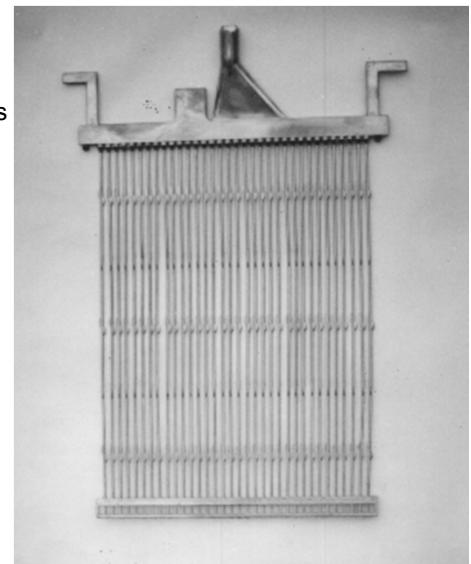
Lead melting furnace capacity : 1ton

Water consumption : 360 liter per hour

Necessary air pressure : 5 ~ 7kg/cm²

Size : 3,400Lx1,150Wx1,670Hmm

Weight : 3,000kg



Trimming cutter - Technical data

Production capacity : 2 grids per minute

Grid size castable : Trimming cutter can produce grids of 34 spines up to 450mm of length.

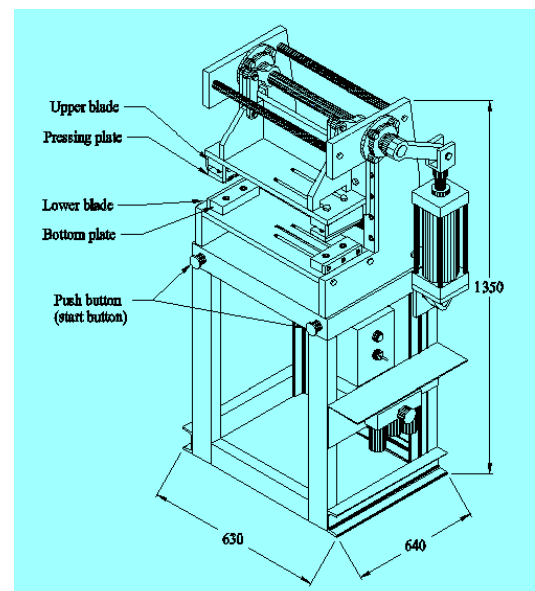
Necessary number of operator : One operator can one extruder and one trimming cutter.

Standard electrical : 220 Volt, 2phase, 60Hz or as required.

Necessary air pressure : 5 ~ 7kg/cm²

Size : 720Lx700Wx1,352Hmm

Weight : 280kg



UNIKOR Lead oxide machine

OXIDE PROCESSING ARRANGEMENT ...

LEAD OXIDE MAKING MACHINE (UNOXM-ULS-8)



Lead ball caster

Lead ball caster
& silo system

Lead oxide mill
& dust collector

Lead oxide silo &
conveyor system

Steel support and
platform for oxide
mixer

Weighing hopper
of mixer

Acid tank & water
tank of mixer

Auto Paste Mixer
-1000kg-

Paste hopper
of mixer

Manual Mixer
- 100/200kg -

Pasting machine

Flash drying oven

Lead Oxide Filling
Machine

Technical data

Production capacity : 8tons of oxide per 24hours.

Automatic Ingot Feeder to feed ingot to melting pot.

-. Length: 2m and 0.75m

-. Power: 0.55kw. 0.5kw

Melting Pot

-. Electric heating type

-. Volume: 2600kg

-. Electric heater: 45kw

-. Power under standby preheating system: 15kw

-. Accessories: Temp sensor, Suction hood, Fume exhaust outlet, Level control unit.

3. Lead Supply Pump(Power: 0.55kw)

4. Recirculated cooling water jacket

5. Lead ball Casting Machine

-. Output: 1ton/hr

-. Size of lead ball: Die.18 x 18mm

-. Power: 0.75kw

6. Lead Ball Elevator

-. Power: 2.2kw

_. Capacity: 2ton/hr

7. Lead Ball Silo

-. Capacity: 30ton

-. Power of discharge unit ; 0.25kw with vibrating discharging and load cell

-. Lead ball conveyor: 0.25kw

8. Ball Mill(Power load control)

-. Power; 37kw

_. Accessories: three points temperature detection & control unit, lubricating oil pump, enclosure.

-. Power of moisture suction hood

-. Blower: 1.1kw

-. Power of oxide return screw: 0.25kw

-. Power of air pipe vibrator: 0.15kw

LEAD OXIDE MAKING MACHINE (UNOXM-ULS-8)

Technical data

9. Pulse Baghouse

- Nos. Of bags: 81 pcs.(filter area: 76CBM
- The discharging screw is fitted with airlock valve 1.5kw
- 9 nos. pulse valves and one pulse controller

10. Exhaust blower

- Power 11kw, 4500 m³/hr

11. Control panel

- PLC control
- Touch screen monitoring

12. Option

- Oxide Silo(30ton)

Accessories: level indicator 2pcs. and load cell control 2pcs.

- Screw Conveyor

1) From oxide mill to silo: 1 set

Included: (1) Horizontal conveyor: L6000mm, 2pcs.

(2) Bucket elevator: H10500, 1pc.

2) From silo to mixer: 1 set

Included: (1) Horizontal conveyor: L6000mm, D200, 3pcs.

(2) Bucket elevator: H9500mm, 1pc.

[Note] The maintenance platforms to be installed at site shall be fabricated by the user based on the drawing supplied by the seller.

*** TECHNICAL SPECIFICATION

- Apparent density: 1.2 ~ 1.4g/cm³
- Oxidation ratio: 70~80%
- Sieve residual(100 mesh): Less than 1%

Lead ball caster

Lead ball caster
& silo system

Lead oxide mill
& dust collector

Lead oxide silo &
conveyor system

Steel support and
platform for oxide
mixer

Weighing hopper
of mixer

Acid tank & water
tank of mixer

Auto Paste Mixer
-1000kg-

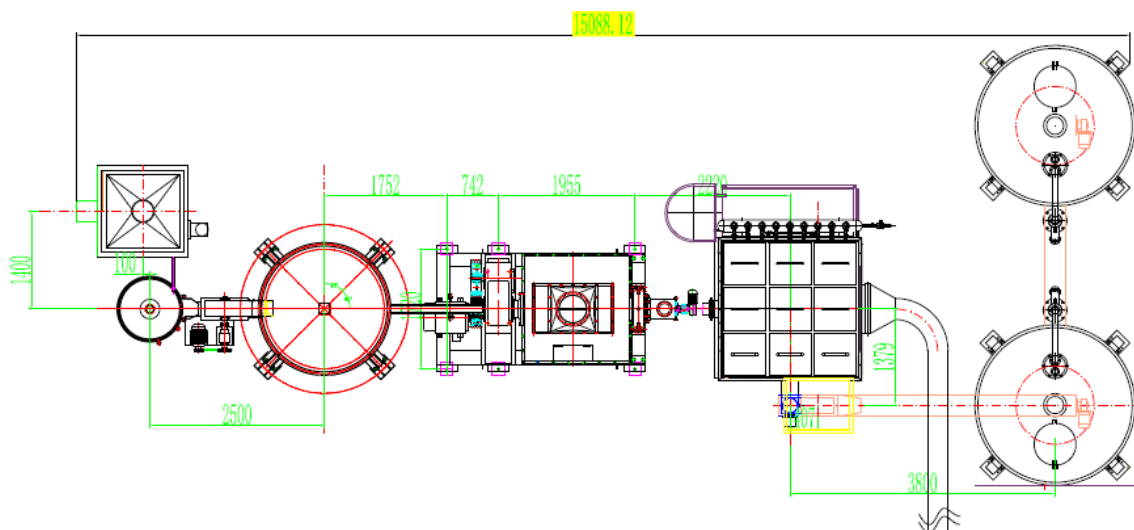
Paste hopper
of mixer

Manual Mixer
- 100/200kg -

Pasting machine

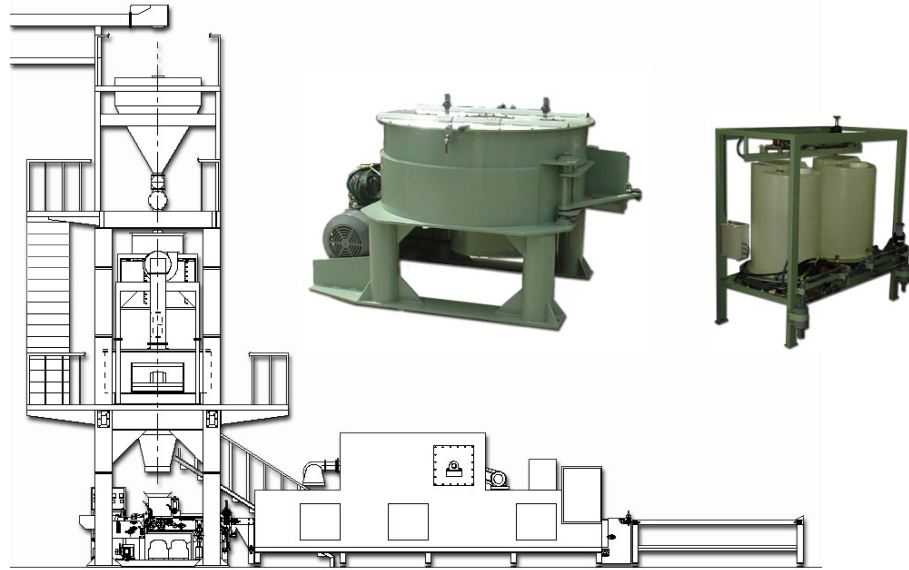
Flash drying oven

Lead Oxide Filling
Machine



UNIKOR Auto Paste Mixer

AUTO PASTE MIXER (UNMIX-1000)



Technical data

Lead oxide mill
& dust collector

Lead ball caster
& silo system

Lead oxide silo &
conveyor system

Steel support and
platform for oxide
mixer

Weighing hopper
of mixer

Acid tank & water
tank of mixer

Auto Paste Mixer
-1000kg-

Paste hopper
of mixer

Manual Mixer
- 100/200kg -

Flash drying oven

PRODUCTION CAPACITY: Lead Oxide 1000kg/batch/30min.

APPLICATION: This equipment can automatically complete the whole process of lead oxide feeding and weighing, acid & water weighing and feeding, lead-paste mixing and paste discharging.

FEATURES: PLC and touch-screen as controlling center, automatically controls the whole process of paste mixing.

FUNCTION:

1. Lead-oxide, water and acid are controlled separately and highly precise automatic feeding, weighing, discharging and required weight can be preset and digital displayed.
2. Multi-directional string system and even water feeding can eliminate density difference of lead paste at different places, making lead paste more uniform in density.
3. Multi-inlet cycling water-cooling system automatically controls paste temperature within the preset range.
4. Stainless-steel string drum and discharging system can effectively guarantee paste quality.
5. Trouble alarming function for malfunction of oxide, water, acid weighing and over temperature.

Optional Auxiliary Equipment

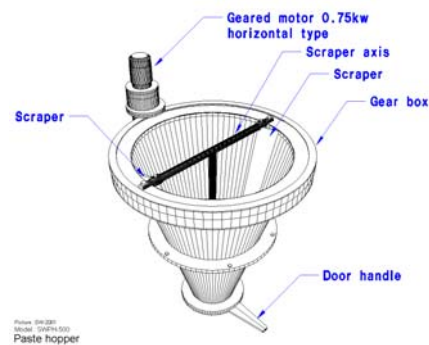
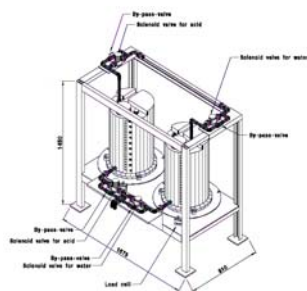
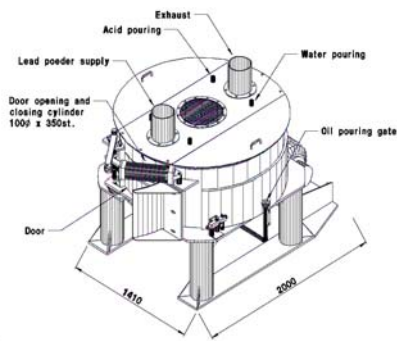
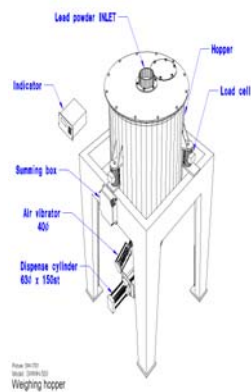
- . Wet Scrubber: 1) Exhaust fan: K=fan 5.5Kw, Q=4012m³/h~7419 m³/h
2) Water Pump: Power:1.5Kw

- . Air Chiller: 1) Cooling capacity:142,000BTU
2) Attached Device: air tube

UNIKOR Auto Past Mixer

PASTE PROCESSING ARRANGEMENT ...

AUTO PASTE MIXER (UNMIX-1000)



Lead ball caster

Lead ball caster
& silo system

Lead oxide mill
& dust collector

Lead oxide silo &
conveyor system

Steel support and
platform for oxide
mixer

Weighing hopper
of mixer

Acid tank & water
tank of mixer

Auto Paste Mixer
-1000kg-

Paste hopper
of mixer

Manual Mixer
- 100/200kg -

Flash drying oven

Technical data

-. Main specification:

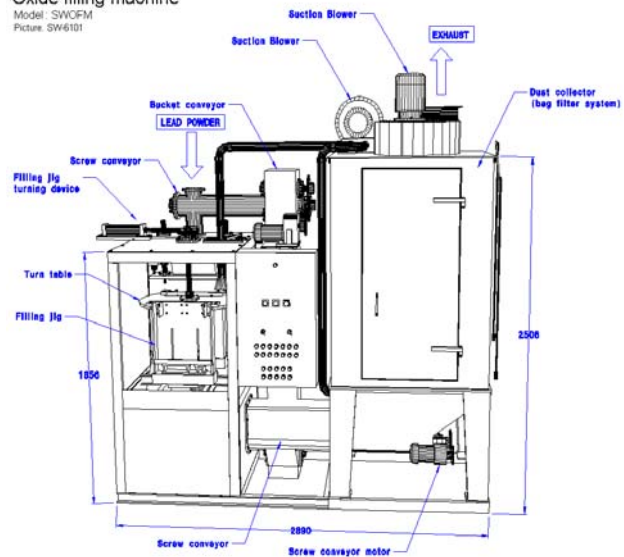
1) Lead-oxide weighing precision	less than 0.10%
2) Acid weighing precision	less than 0.15%
3) Water-weighing precision	less than 0.15%

- . Lead-oxide weighing precision
- . Water-weighing precision
- . Acid weighing precision: less than 0.15%
- . Water-weighing precision: less than 0.15%
- . Input power: 3 Φ , AC380V, 50, 12Kw
- . Air pressure: 0.55Mpa, 0.1 m³/min
- . Water:

FILLING MACHINE ...

LEAD OXIDE FILLER (UNOXF-P20)

Oxide filling machine
Model : SWOFM
Picture : SW6101



Technical data

Production capacity :

spine	plates per one cycle
14	20
15	20
19	20
25	15
34	10

Electrical requirements : 220/380V, 3phase, 60Hz or as required.

Electricity consumption : Total 7.15kw

Suction blower (horizontal) 3.75kw

Suction blower (vertical) 2.25kw

Screw conveyor motor 0.4kw

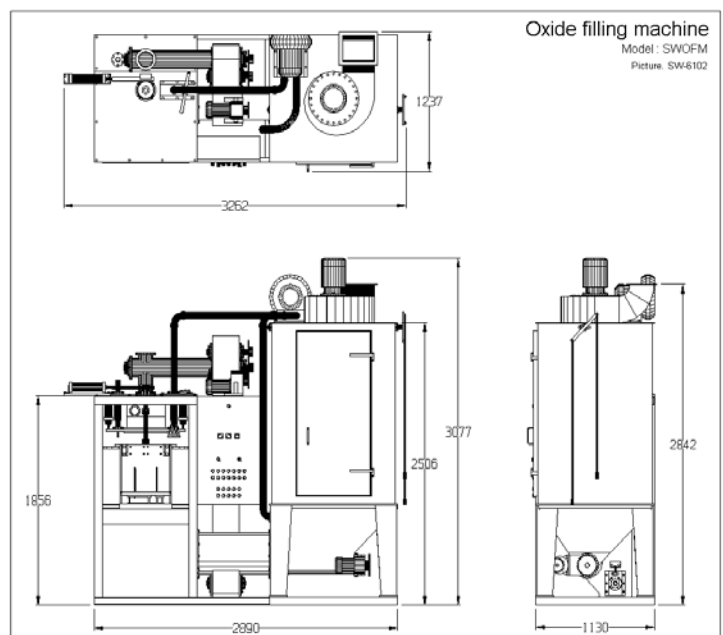
Bucket conveyor motor : 0.75kw

Hopper capacity : 25kg

Filling method : by cam

Size : 3,262Lx1,237Wx3,077Hmm

Oxide filling machine



Oxide filling machine
Model : SWOFM
Picture : SW6102

UNIKOR IND.

Mixer

- 100kg, 200kg -

Lead ball caster

Lead ball conveyor

Lead oxide mill

Lead oxide silo

Steel support and platform for oxide mixer

Weighing hopper

Acid tank & water tank

Mixer

Mixer
- 100kg, 200kg -

Paste hopper

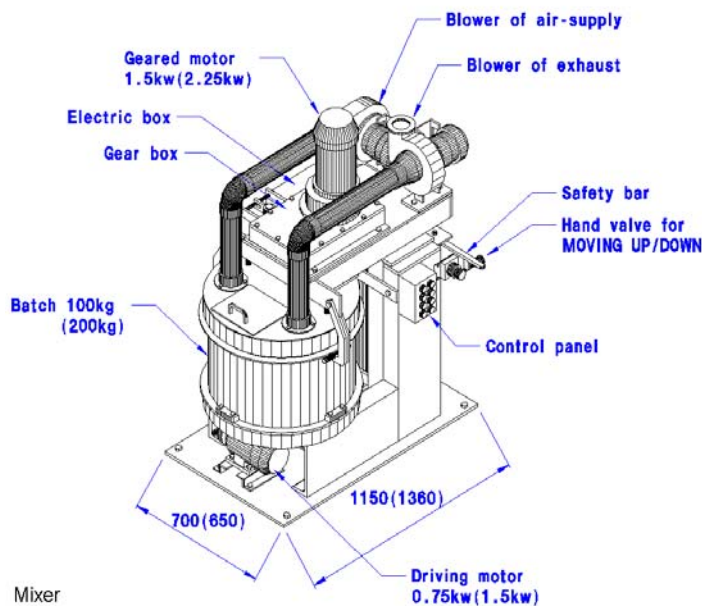
Pasting machine

Flash drying oven

Positive plates drying tunnel

OXIDE PROCESSING ARRANGEMENT ...

PASTE MIXER (UNMIX-M-100 or 200)



Mixer
Picture: SW-1903

Technical data

* Dimensions in parenthesis of () are for 200kg/batch capacity.

Production capacity : 100kg/batch (200kg/batch)

Standard electrical : 220/380V, 3phase, 60Hz or as required.

Electricity consumption : total 3.05kw (4.55kw)

Driving motor 0.75kw (1.5kw)

Blower motor 0.4kw x 2pcs

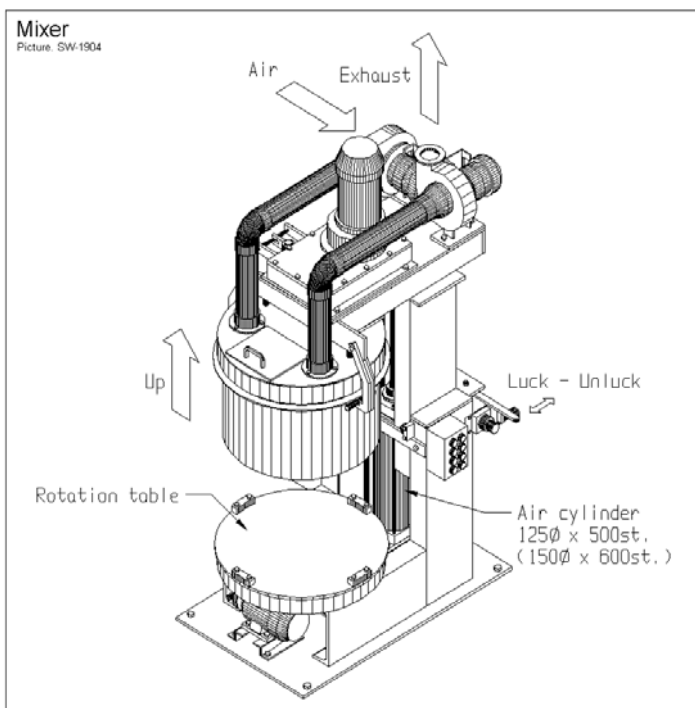
Geared motor 1.5kw (2.25kw)

Necessary air pressure : 5 ~ 7kg/cm²

Number of blades : 3 blades

Number of scraper : 1 scraper

Size : 1,190Lx1,000Wx1,450Hmm (1,390Lx1,060Wx1,610Hmm)

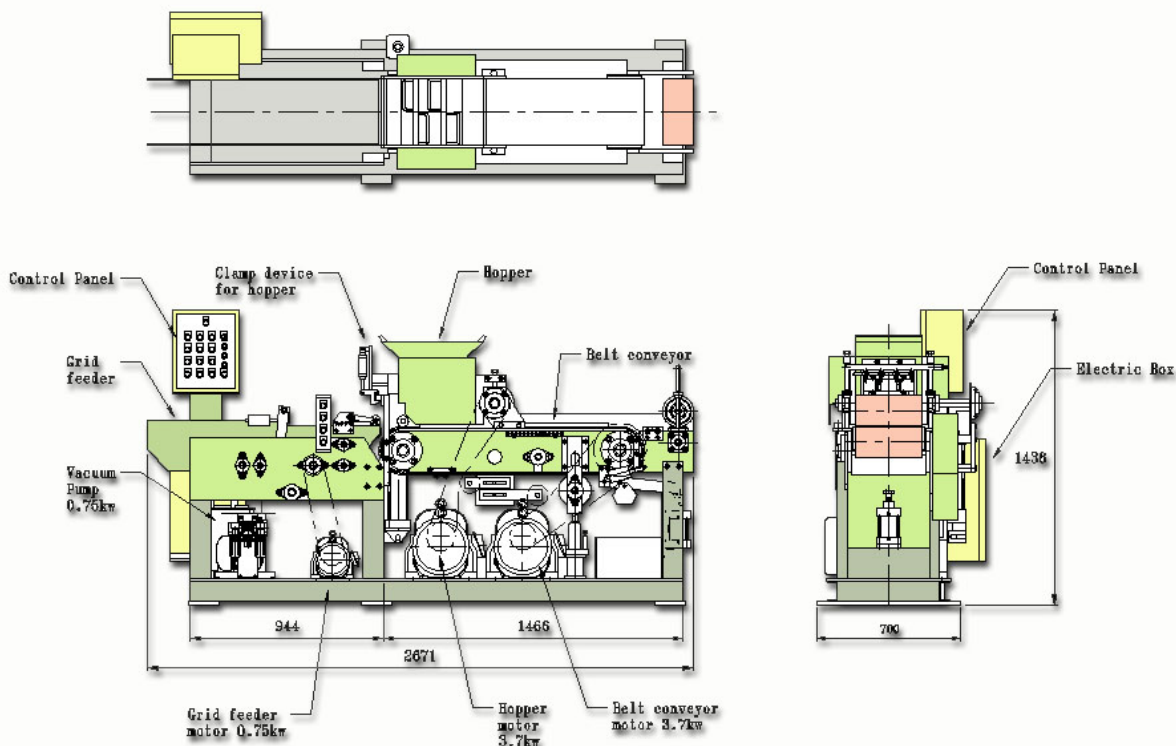


UNIKOR IND. Pasting machine

OXIDE PROCESSING ARRANGEMENT ...

PASTING MACHINE (UNPM-A)

-Automobile Battery use -



Lead ball caster

Lead ball conveyor

Ball mill

Lead oxide silo

Steel support and platform for oxide mixer

Weighing hopper

Mixer

Paste hopper

Pasting machine

Flash drying oven

Positive plates drying tunnel

Technical data

Production capacity : 100 to170 panel per per minute

Grid feeding : suction type

Standard electrical : 220/380V, 3phase, 50Hz or as required.

Electricity consumption : total 12.5kw

For hopper motor : 5.5kw

For belt conveyor motor : 5.5kw

For grid feeder motor : 0.75kw

For vacuum pump : 0.75kw

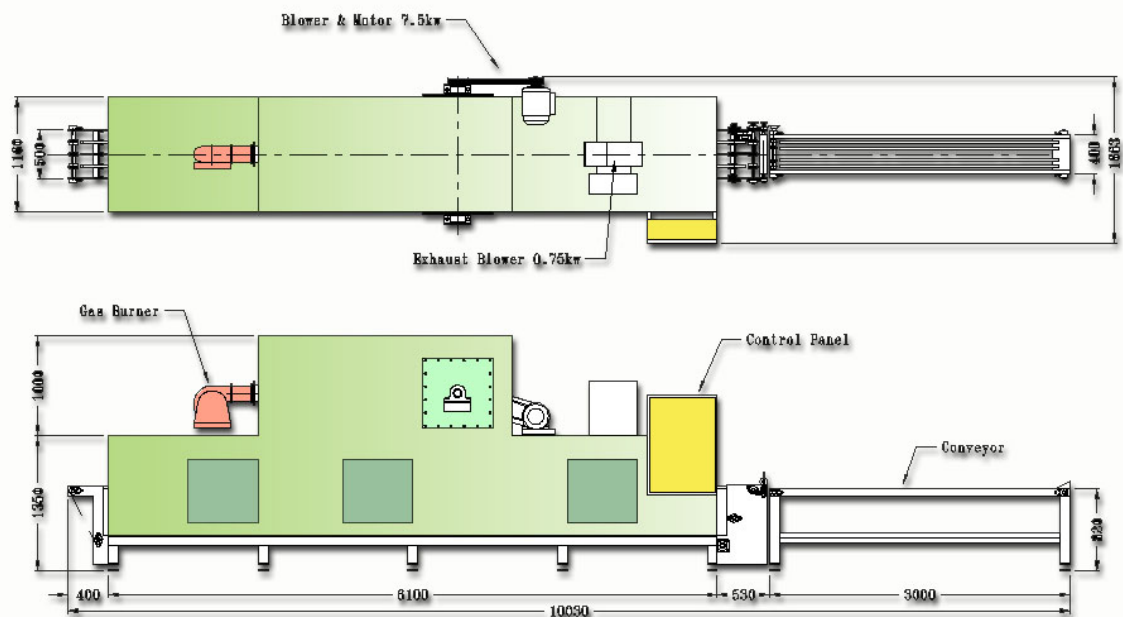
Pasting belt : 13"X111"X6ply

Dimension : 2, 671x822Wx1,438Hmm

UNIKOR IND. Flash drying oven

OXIDE PROCESSING ARRANGEMENT ...

FLASH DRYER (UNFDO-G)



Lead ball caster

Lead ball conveyor

Ball mill

Lead oxide silo

Steel support and platform for oxide mixer

Weighing hopper

Mixer

Paste hopper

Pasting machine

Flash drying oven

Positive plates drying tunnel

Negative plates drying tunnel

Technical data

Production capacity : 100~170 double panels per minute

Moving velocity adjustable

Fuel : LPG or LNG

Standard electrical : 220/380V, 3phase, 50Hz or as required.

Electricity consumption

For driving motor : 0.75kw

For blower motor : 7.5kw

For exhaust blower : 0.75kw

Operating temperature : 200 ~ 300°C

Dimension : 10,030Lx1,800Wx2,350Hmm

