INSTALLATION GUIDE – WOOD CHIP

MONTAGE

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1.. Notes to installation

1.1. Safety


ATTENTION

Only trained professional staff may carry out the assembly and installation of the equipment (heating systems assemblers, installers, authorised electricians...)


WARNING

CAUTION
The non professional installation may cause damages or injuries!

Please to observe the chapters: Putting into operation and User's guide.

1.2. Standard references

In addition to the local installation and fire regulations, the boiler installation and its putting into operation shall be performed in accordance with the following standards:

ÖNORM M 7550	Central heating boilers for up to 100°C Terms, assembly, tests, prescribed marking
ÖNORM M 7510	Directive relating to testing of the central heating systems
ÖNORM B 8130	Safety equipment, opened water heating systems
ÖNORM B 8130	Closed water heating system, safety and technical requirements
DIN 4751 Teil 1-4	Safety and technical equipment of heating facilities

1.3. To the attention of installers and heating systems builders

- The handing over protocol shall be unconditionally filled out and signed by the customer.
- Please to send one copy of the filled out and by the customer singed handing over protocol to the Gilles company.

GILLES Energie- und Umwelttechnik GmbH & Co KG
Koaserbauer Str. 16
A-4810 Gmunden
Tel. +43 - 7612 - 737600
Fax +43 - 7612 - 73760-17
www.gilles.at
office@gilles.at

Danke!

1.4. Transport

Please to follow the transport instructions on the packaging!

For the transportation of the boiler into the stokehold:
Use cable reel or similar hoist.

In case a crane should be necessary for the transportation of the boiler into the stokehold – boiler room, the cover on the boiler top may be removed, under which an extension part is welded on the boiler's body. This may be screwed on the crane noose.

Transportation into the boiler room:
Use lift truck or crab.

How to avoid damaging:
Transport the boiler without noticeable shakings.
Transport the container content carefully.

1.5. Temporary storage

In case of the postponed installation:

- Store the boiler, insulation and controlling parts on a dry place protected against dust.

Humidity worsens the insulation properties and may damage the electronic parts!

1.6. In case of need

When despite obeying the above mentioned installation instruction a problem of any kind arises, please do not hesitate to contact us immediately in order to prevent possible installation mistakes that could result in functional shortcomings later.

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A-4810 Gmunden
Tel. +43 - 7612 - 737600
Fax +43 - 7612 - 73760-17
www.gilles.at
office@gilles.at

2. Boiler installation

2.1. Boiler transportation

Bring the boiler into the stokehold.
Use the rollers.

Remove the boiler packaging.

2.2. Placement of boiler

Check up the opening from the store room, whether it is in a suitable position.

Check up also the possible flue openings of the chamber (position, cleaning door...).

Place the boiler on its position.

Follow the dimensions in the delivered installation scheme.

ATTENTION!
The minimal distances must be met!

Take off the transportation rollers.

Use some lifting tool, e.g. some heaver put on the boiler flange in order to take off the rollers.

Check up again the levelling of boiler.

Check up the levelling of the boiler and adjust it if necessary.

Level the boiler using a water-level.

Adjust the boiler position by means of plate pieces.

Check up again the levelling of boiler.

3. Delivered parts

3.1. Open additional packages and control their content

Elbow arm transport system delivered in 3 parts

- cover plate,
- palette with auger channel and
- elbow arm tighten together,
- auger.

Palette with the auger channel and elbow arm tighten together.

Chamotte fire bricks on palette
(10 rectangular parts and 3 bow forming chamotte parts.

Put the packed parts in heating room:

- 2 runner for chamotte fire bricks
- panelling parts
- Guide for installation

1 Container for palette

List of content:

Cleaning off means.

Cable channels

Support stands for auger

Support stands for stoker unit

Various cables

Complete coverage for stoker

Ash bin

Heating circuit regulator (2 Packages)

Insulation wool for the burner insulation

Cable tubing

Support stands for gear box - elbow auger

Connecting flange on the feeding point of burner

Gearing on the front plate – transport auger

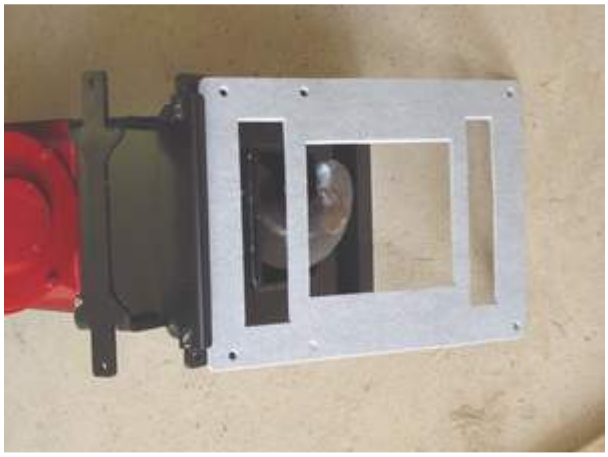
Transport system motor with gear supports and screws in packets (attached to supports)

Burner

Underfeed unit with stoker and already mounted cell wheel

Screws for cell wheel
(bag attached in the cell wheel)

Sealing between the underfeed stocker and burner connection flange



Control panel

Package 4 – (Packages are marked)

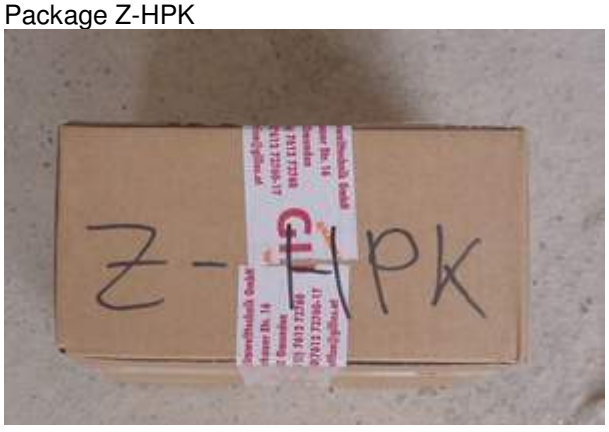
Fastening materials, channel for primary air blower

Package 7 alarm, temperature safety device (valves…)

Package 83 W

Primary and secondary air blowers

Package Z-HPK



Ignition (black or silver)

Package KNB

Fastening material for auger, cover end switch,

Edge rubber protection for burner coverage

Sleeve for transition part between transport system and cell wheel

Sleeve for support stand of the transport system

Angle gear for transport systems

Installation plate

Maintanance plan

4. Boiler and Burner

4.1. Boiler lining

Put the rectangular fire bricks through burner connection opening to the combustion room.

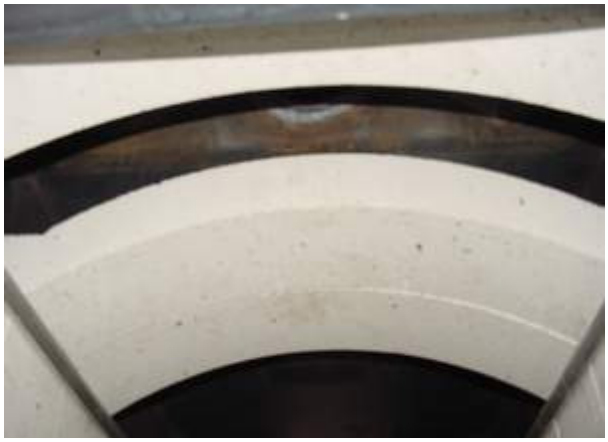
Put 5 bricks along the left side and 5 bricks along the right side from behind.

Mount both the steel rail profiles on the bricks.

The steel rail profiles must match at the back.

Put the fire bricks on the profiles: the first brick shall joint the front side.

Install the other two bricks within the distance of about one brick – e.g. ca. 12 mm one from other.



4.2. Burner installation

Take off nuts, spring collars and washer from the screws on burner flange.

Complete the burner.

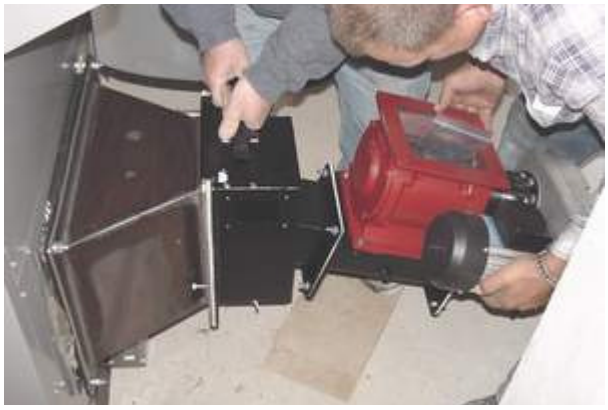
Apply the burner flange sealing.

Mount the burner casing and screw it on firmly, using 4 pc. of M10 nuts, spring collars and washers.

Apply the high temperature silicone, e.g. RECA S300 for sticking the sealing on the burner flange (not delivered).

Prepare 2 of 6 hexagonal screws M8x35 provisionally in order to centre the mounted piece.

Hang up the stoker and screw it on.



Screw on the burner using 6 hexagonal screws and washers; tighten the upper screw first, only then the lower ones.

Prepare the support for stoker and apply silicone on the rubber plate.

Install the stands

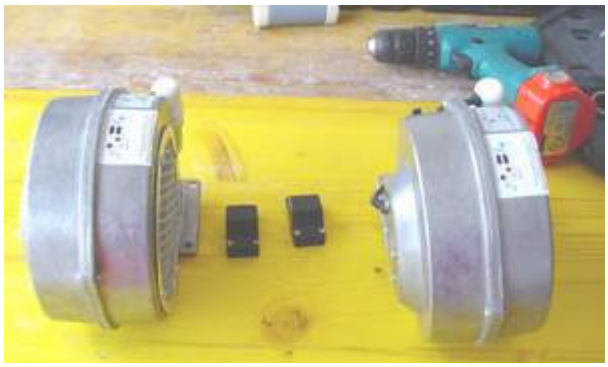
4.3. Burner assembly

It is recommended to prepare a working place, e.g. a bench.

4.3.1. Fans (blowers) installation

Prepare the blowers.

Take off the connectors and put them aside for later usage.



Put the adhesive sealing on the air blower flange of primary air fan.

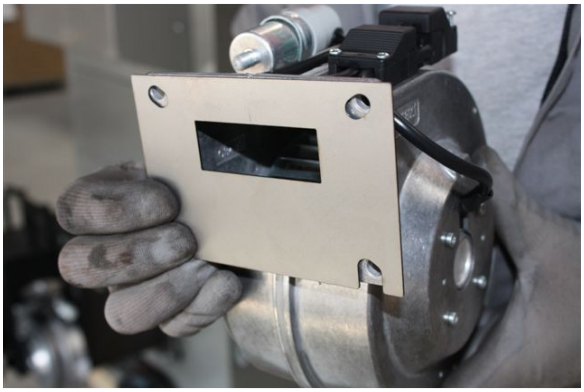
Put the adhesive sealing on the air blower flange of secondary air fan

4.3.2. Installation of air-compensation-plate

Only for Wood chip heating HPK-RA 30 - 49

Add air-compensation-plate at primary air fan.
Only for Wood chip heating HPK-RA 30 - 49

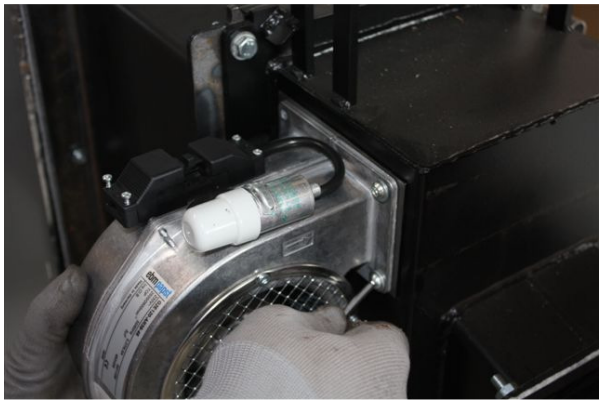
Add air-compensation-plate at secondary air fan.
Only for Wood chip heating HPK-RA 30 - 49



Prepare 8 pieces of the mushroom head screws of inner hexagonal profile M6x15 and washers there to.

Installation of primary air blower:

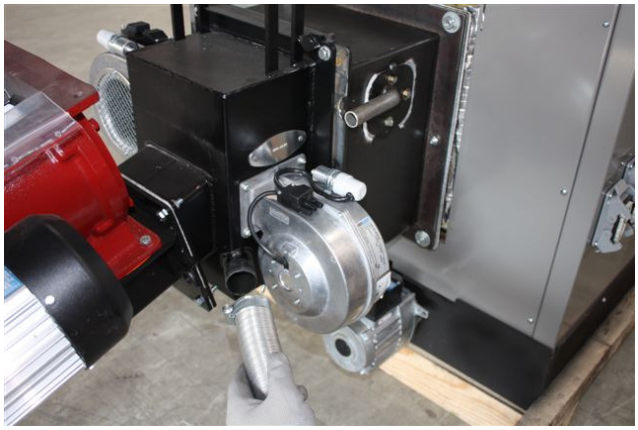
Screw on the primary air blower on the right side – 4 screws.



Projection from behind:
Screw on the secondary air blower on the left side – 4 screws.

4.3.3. Ignition installation

Put the connection tube on the air channel.



Put on the ignition device and connection tube. Attention! The ignition device must not touch the primary blower. Distance – ca. 1 cm.

Tighten the connection tube and ignition device fast together.

Tighten the connection tube

Carefully check if the ignition device is sure not too close to primary blower!

More than 1cm in between

Aluminium hose
- protrude
- adjust
- cut

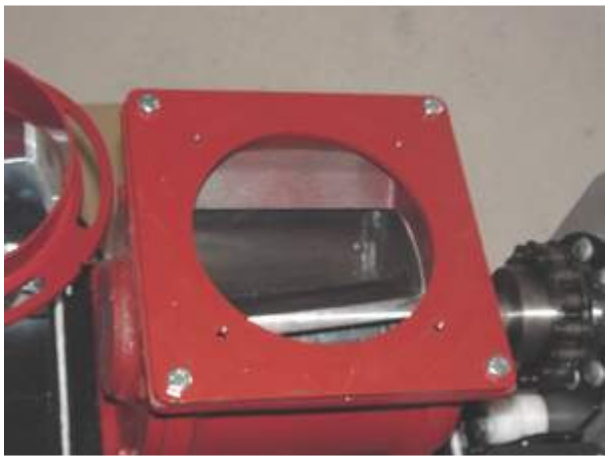
Install the aluminium hose.

Fix it using two hose fasteners.

Take off the holding plate sealing rubber on the stoker channel - for cable installation

4.3.4. Installation to the cell wheel

Apply the foam rubber sealing on the cell wheel flange.

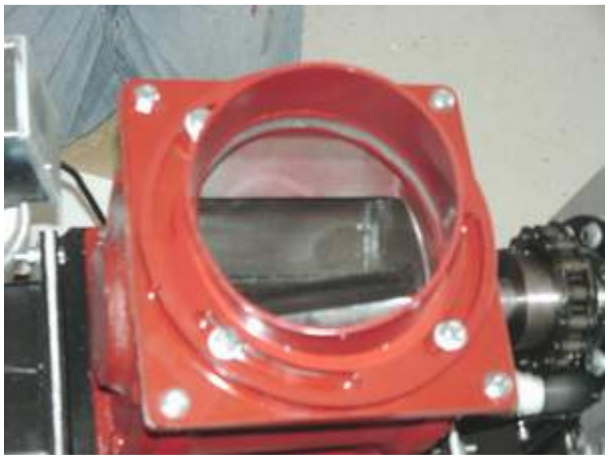


Screw on the transition flange by 4 pieces of hexagonal screws M8x40 fast.

Apply the foam rubber sealing on the transition flange.

Adjust the connecting piece of between Transport system

and cell wheel using 4
pieces of hexagonal screws M8x40 and safety washers – screw on firmly.



4.3.5. Transitional part to the cell wheel installation

Insulate the burner casing by insulation pad.

e.g. – use wire or two cable clamps, etc.

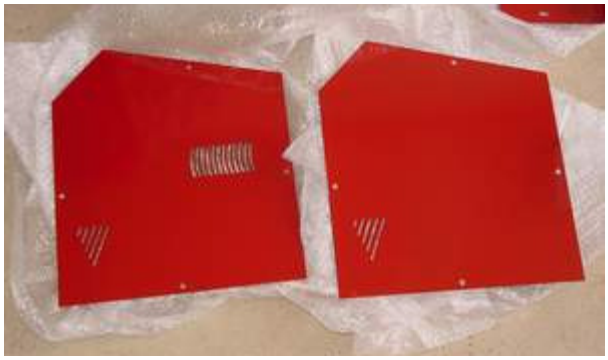
4.4. Preparation of burner casing

4.4.1. Pre-assembly of burner casing

Unwrap the coverage, stoker chain protection.

Kettenschutz Unterschubeinheit

Side parts of burner casing.



Burner casing

Remove the adhesive tape from the suction shutter.

Remove the adhesive tape from the air suction shutter.

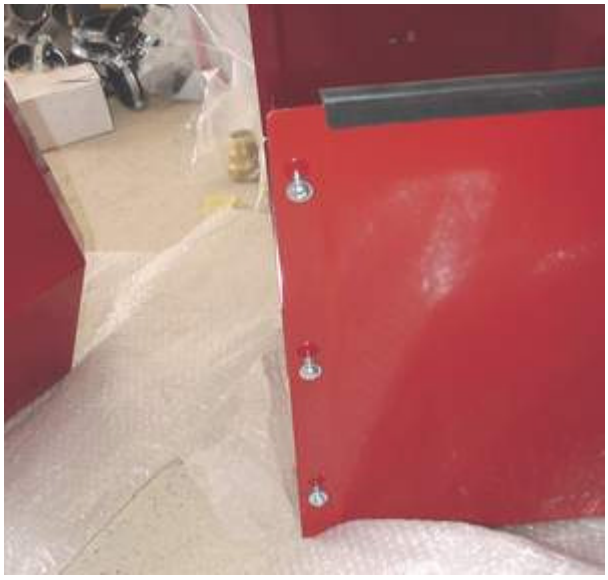
Apply the edge protection stripe on the front edge of burner casing and fix it using a plastic hammer.

Cut off the overlapping stripe.

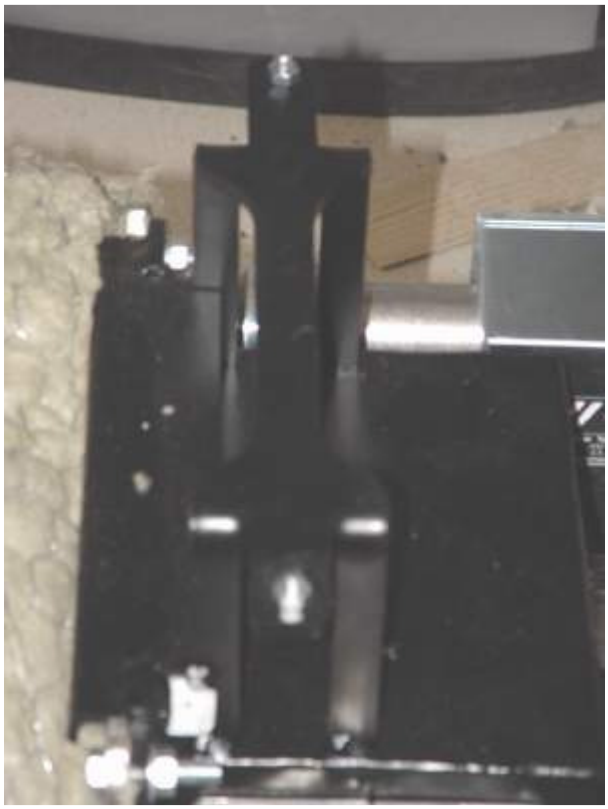
Repeat the same process on the other half part of casing.

Screw on 3 inner hexagonal screws of mushroom head on the casing bottom.

(pre-assembly)

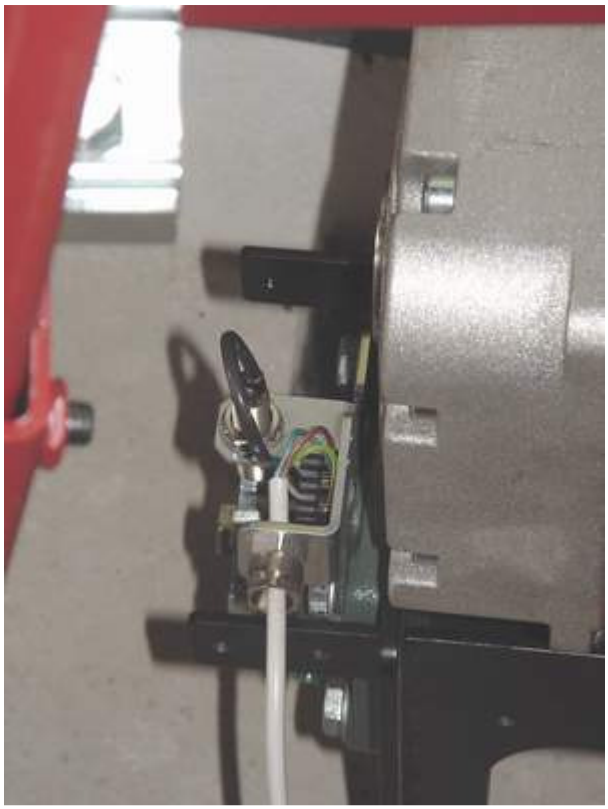


Screw together the burner and its holder using 2 inner hexagonal cheese head screws M6x16 with nuts M6 and tighten them firmly.

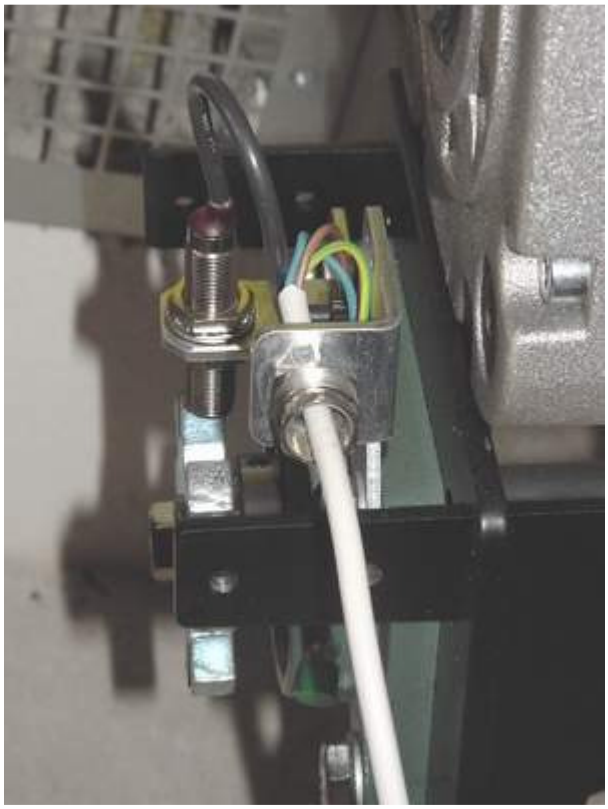


4.4.2. Installation of revolutions controller

Connecting, wring and installation of the volume approaching system switch for the revolution controller on stoker auger.



The distance on the rotating disk adjust between 3 mm and 5 mm.



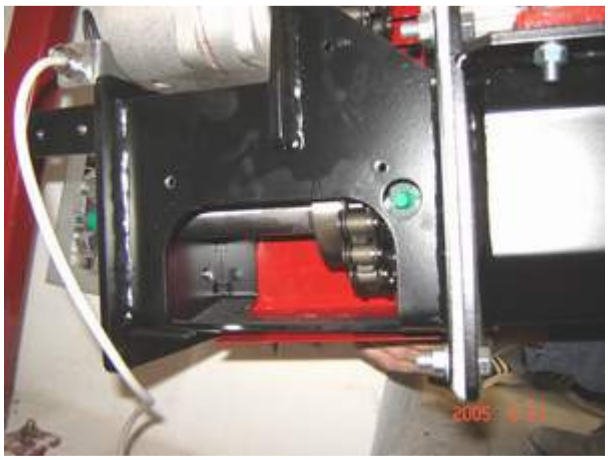
4.4.3. Pre-assembly of the chain protection cover

Prepare 3 parts of the chain protection cover for the stoker unit.

Adjust the left chain protection cover (rear view) :

Split the protection, adjust it approximately (see figure).

Screw on the left lower part by 2 pieces of inner hexagonal cheese head screws M6x16 .



Screw on the right part by 2 pieces of inner hexagonal cheese head screws M6x16 .

Set up the left upper part.

Screw together the both parts on the upper part using 2 pieces of inner hexagonal cheese head screws M6x16 and washers.

Screw on the cover of revolution controller using 2 pieces of inner hexagonal cheese head screws M6x16 and washers.

4.5. Installation of the cable tube arm

Follow the supplied installation guide
1. Screw the shackle on the stocker channel (nut M12) and secure it by two nuts.
2. Insert the cable tube with two welded tubes from underside into the shackle and clamp it by a hexagonal screw. This tube must be elongated up to the control panel support or up to wall.
3. The cable tube with one welded tube shall be elongated up to the boiler and mounted.
4. In case, the cable tube must be led up to the wall, the threaded bar must be deviated once by 90 °.

ATTENTION: Do not forget the edge protective jacket upon cutting it off.

Mount the holding tube for cable pipe together with support stand on the stoker.

Insert the first cable tube arm and position it vertically.

Screw on the screw and nut on the holding tube and fasten the arm.

Adjust the length of the other cable tube, cut off the edge protection on and apply it on the tube ending.

Insert the second cable tube arm from below in the holding tube and secure its position by hexagonal screws M12x20.

5. Transport system installation

5.1. Prepare transport system

Bring the auger into the fuel store

Take off the channel part out of the palette.

Do not open the cover with the elbow arm.

5.2. Installation of the transport system in bunker

Bring the gear box in the fuel store

Screw the auger channel on the gear box.

Fix on the stands (plates).

Estimate the height – e.g. slot 3 or 4.

Specify the position in advance.

Insert the auger into the trough – channel.

Grease the coupling.

Insert the auger into the coupling.

Take off the key (attached on the auger by an adhesive tape.

Mount the closed auger channel.

Prepare 6 hexagonal screws M10x30 with nuts and safety washers.

One side of two central screws heads is sanded dawn.

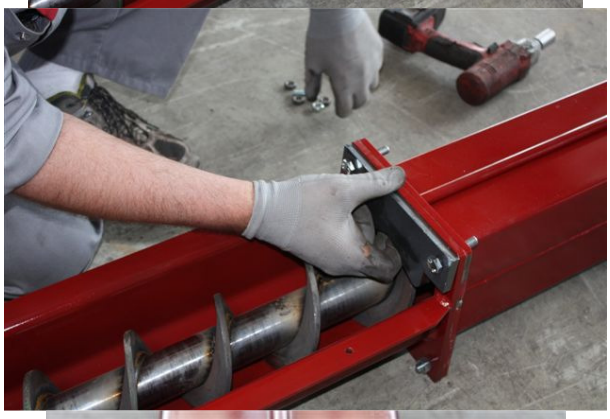
Put the auger through the wall opening and adjust it over the connecting junction.

IMPORTANT!
The connecting flange between the open and closed parts of the auger channels must be strictly positioned in the store room – not in the wall opening, in order to prevent the arms touching the wall.

Unscrew the sheet cover of the open auger channel.

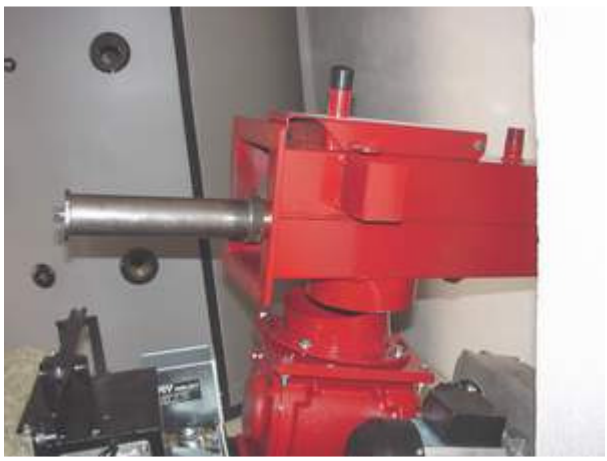
Insert the retainer into the open channel.

Screw the retainer together with open and closed channels by 2 SK-screws M10 x 40.



Screw the sheet cover on the open channel.

Adjusting the auger over cell wheel.



Prepare the installation of the hinged arm sweep collector system
in the store room according to the delivered installation scheme.

Measure and check up the distances.
Observe the instruction on the minimum distances from the walls.

Put the hinged arms on the gear box.

2 persons must hold the arms on their outer parts and then cut the holding belts.

Unfold the arms slowly.

ATTENTION!
Danger of injury.

Extend the arms in lengthwise.

The back parts of the arm ends must be at least 5
- 7 cm over the floor.

Adjust the gear stand plates if necessary and fix them again.

Stretch the arms again and check up, whether it does not touch walls.

Screw the overfilling cover plate on the open part of the auger channel.

Use **x** pieces of lens head screws M8x16.

Number **x** depends on the diameter of active part of facility.

5.3. Assembly the support stands in heating room

Prepare the supports stands

Check up whether the cross arm may be mounted over the stands profiles.

2 drive screws with inner hexagonal shape M8x 20 screw on the cross arm of the support stand.

Fit the upper part of the holding clamp on the auger and fix it.

Mount the support stands.

Thrust the stand profile.
The holding stiffening plates are outwards.

Adjust the lower part of holding clamp.

Screw on the holding clamp using 4 hexagonal screws M10x60, washers and nuts.

Adjust the height between transition and fall – gravity tube.

Adjust the position of the feeder, if necessary.

Adjust the distance at ca. 5 mm.

Tubes must not be in contact.

Tighten the drive screws on the stands.

Seal the gap with a textile adhesive tape.

Bandage about 4 – 5 layers.

Mount the tube connection fitting bearing in mind that so little of connection part is seen as only possible.

5.4. Finishing the transport system installation

Mount 2 impacts anchors D 10 on the gear box.
10 mm drilling

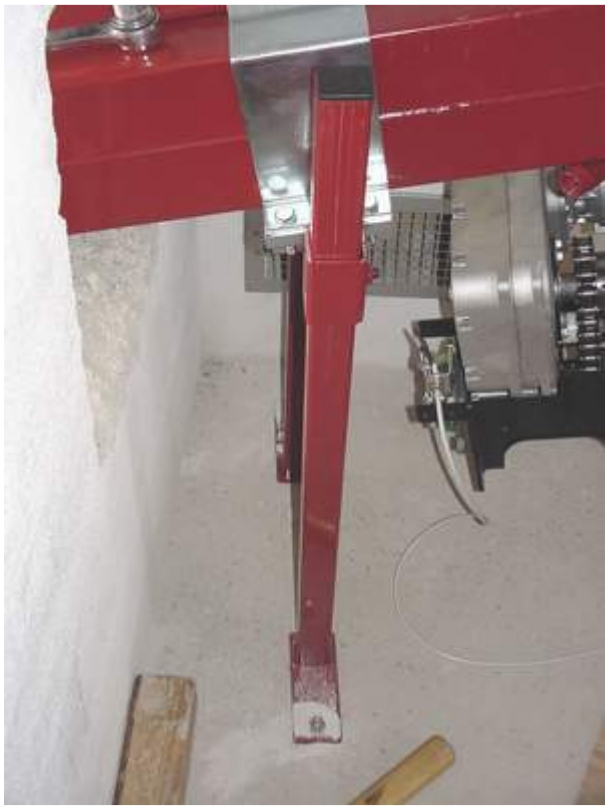
drilling depth - 90-100 mm

Adjust the anchors and screw the feet firmly.

2. Try on the feet.

Screw the feet on the gear box firmly.

Screw on the stand feet in the heating room firmly.
Put on 2 impact anchors D10.



Mount the pressure disc.

Screw the plate together with the hinged arms using 2 nuts M12 and washers.

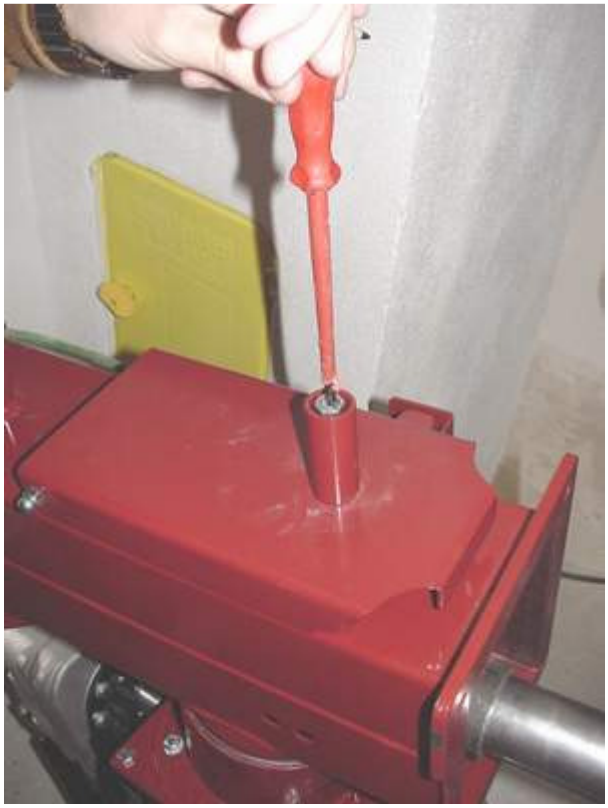
In centre screw the cover plate and arm together with the gear using one hexagonal screw M12x65 and washer.

5.5. Installation

Open the cover.

Pull out the plastic shutter.

Use screwdriver and turn the screw slot about 90°.



Now open the cover.

Thread 2 arbor openings - M10.

Put the arbor into the auger channel.
Install the outer holding plate.

Screw it on by 2 hexagonal screws and nuts M10x30 slightly. Use also the safety washers.

Adjust the arbor so that a free space of 2-3 mm between the arbor in the auger channel and ejection opening still remains.

INFO **Before installing of the gear motor it is recommended to mount the burner casing – see chapter *8.1. Burner casing installation***

5.6. Gear motor installation

Apply the foam rubber on the auger channel flange.

Mount the front plate firmly, using 4 hexagonal screws and nuts M10x30, as well as safety rings.

Mount the front plate firmly, using 4 hexagonal screws and nuts M10x30, as well as safety rings.

Pull out the shaft and secure it by two drive screws of the flange bearing.

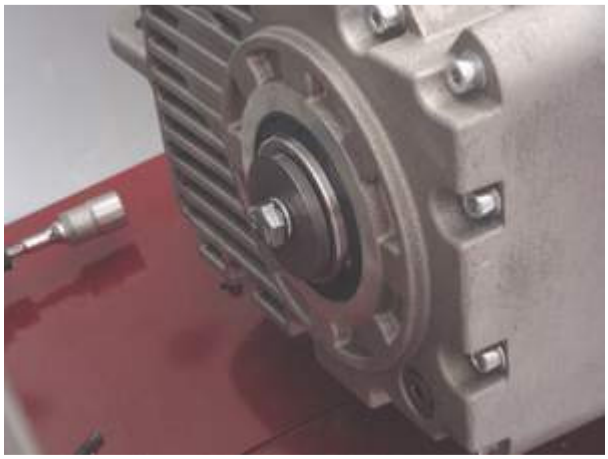
Apply 2 keys

Try to turn by hand
Adjust arbor
2 - 3 mm distance
Tighten screws

Coat the auger shaft by a greasing material, e.g. braze paste.

Put the gear motor on the shaft.

Fix the gear motor by a hexagonal screw and washer.

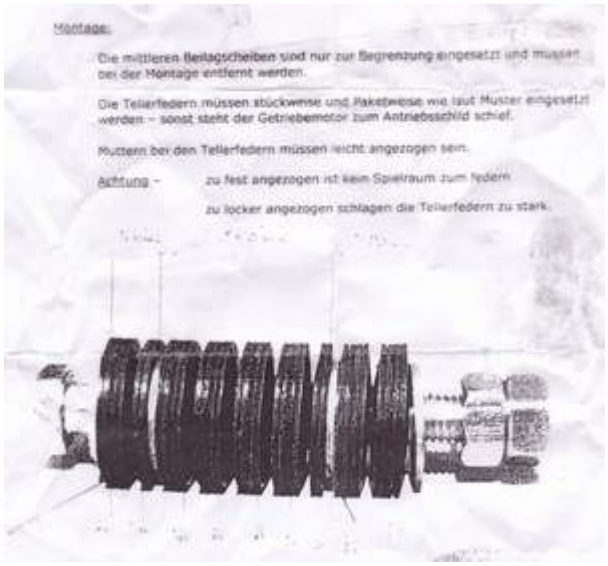


Install the torque support (spring plates package).

For installation, follow the description:
The spring package (plate springs) contains 32 pieces all in all, distributed in three separate packages.

Installation:
The intermediate washers are used only for separation and must be removed during installation.

When installing spring plates, the instructions on their number and way of installation must be observed, otherwise the gear motor would be positioned incorrectly against its cover.
The spring plates nuts may be tightened just slightly.



ATTENTION:
A too strong tightening provide no allowance for springs.
A too clear positioning results in an excessive springs vibration.

Screw the nut until a space for counter nuts remains.

Screw on the counter nuts.

6. Control panel installation

Unwrap the control panel.

Specify the control panel placement.

Mark the boreholes displacement:

1. borehole 140 cm over the floor
2. borehole + 36 cm = 176 cm
3.+ 4. boreholes on side - 56 cm

drill 4 holes into the wall
D 10 mm for dowels 10

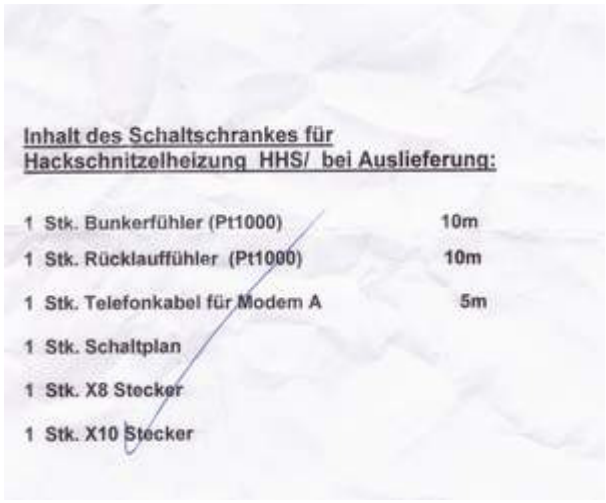
4 pieces of plastic dowels 10
4 pieces of 8x60 screws

Screw the control panel on the wall.

7. Wiring

Open the control panel and take off the delivered sensors and other parts.

Check up the package content comparing the delivered parts against the package label.
Content of the control panel for the HHS/ wood chips
heating system:
1 pc. bunker sensor (Pt1000) 10 m
1 pc. Return sensor (Pt1000) 10 m
1 pc. telephone calbe for modem A 5 m
1 pc. connection diagram
1 pc. cable connector X 8
1 pc. cable connector X 10



Measure the cable channels.

Install the cable channels.

Measure the cable length from the burner to the control panel.

The enclosed silicone cable 3 x 1,5 mm is used for blowers and ignition devices.

Connect the cable with standard connector (for ignition device).

Connect the cable with the primary blower connectors.

Connect the cable with the secondary blower connectors.

Interconnect the cover terminal switch and install it

Assembly it using fitting material, screws, nuts and washers.

Install the temperature sensor for fuel store monitoring in accordance with TRVB 118 regulations.

Install the cable.

Bind the calbe together and clamp them.

Connect all the plugs.

Wire the gear motors.

List of cables

Gear motor - feeder
Gear motor – discharging
Cover end switch - auger
Cable for pump bypass – reverse run breaking

Silicone cable – primary air blower
Silicone calbe – secondary air blower
Silicone cable – ignition device

Cable – rotation monitoring

Cable – temperature sensor PT 100 for reverse run breaking
Cable – temp. sensor for bunker monitoring

Cable with connector or boiler wiring 1
Cable with connector for boiler wiring 2 with additional blue cable

Wiring in control panel according to the wiring diagram.

Tighten the installation bearing screws.

Decide on placing of alarm and install it.

Put the boiler cables into one cable channel.

Use 2 self-tapping screws for mounting the cable channel to the cover sheet.

Assure the power supply to the control panel and connect the plug into the socket.

8. Casing

8.1. Burner casing mounting

INFO

Before mounting the burner casing, it is recommended to install the discharge conveyor.
See chapter *5. Transport system installation*

Only the gear motor is installed after the burner casing mounting.

Mount the left part of casing as the first.

Pay attention to the correct position of the air suction shutter and its correct performance.

Mount the right part of burner casing.

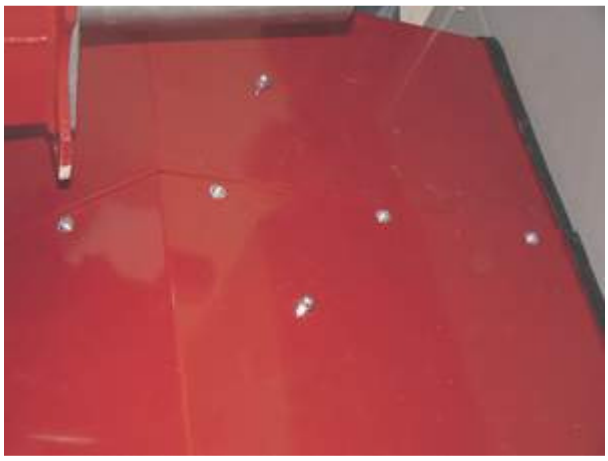
ATTENTION
Observe the cable arrangement.

Tighten the pre-installed screws on the lower casing part .

Do not tighten screws too much, otherwise the pressure nuts may disengage in the casing.

Mount the upper NG four screws.

Screw both the protruded screws of the burner holder by two M6 cap collars.



Apply the side burner casing sheets – use one M6x16 screw.

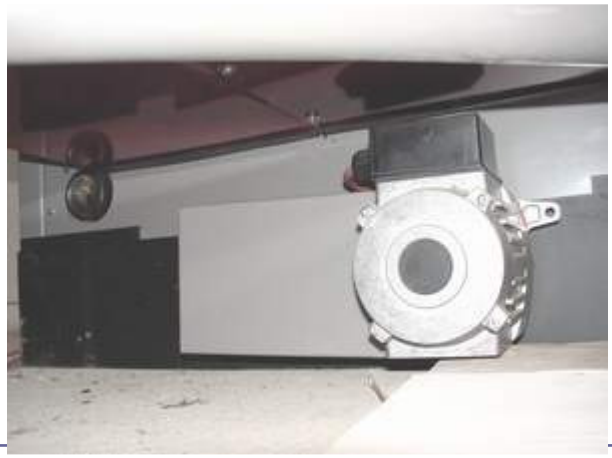
8.2. Mount the rest of covers

Close both the gaps on the boiler's upper part with delivered round closing discs.

(Hide the transportation hooks.)

Mount the cover for ash removing driver.

Use one a piece of self-tapping tinplate screw



9. Final works

9.0. Installation of blank flange

Take off the cover of the blank flange

Blankflange:
Screw thight 4 screws of blankflange on the right and left side of the boiler

9.1. Ash bin

Install the ash bin.

Fit the ash bin on the tube of the ash discharging auger.

9.2. Insulation pad across the wall opening

Wrap the auger channel by the insulation pad and fix it by an adhesive tape or a cord.

Mason: :
Cut, wall up, surface.

9.3. Initial bunker filling up

Fill up the bunker by fuel material.

During the bunker filling up let the spring arms drawn in.
On the control panel set up the manual operation mode.

B02	**Program selection 1 Manual o peration**	Nav ⇦⇨

In the **manual operation mode** it is possible to feed the material manually

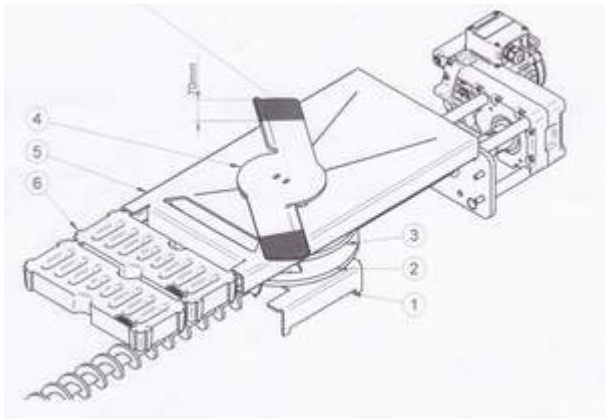
B06	**Manual operation F1 forw. F2 b ackw.**	**Press key F1 forw.** 2 sec. for every key pressing	Operation **F1**/**F2** Nav ⇦⇨

During filling up, press F1 key more times. The Transport system is switched on for every 2 seconds and the arms are tighten under the cover plate.

9.4. Ash removal adjustment

WARNING

When the burning case is places on the side, the ash stirrer must be shortened by 70 mm at the sign, in order to avoid crash against the burning case.



9.5. Final examination

- When installation is accomplished, it is necessary to check up, whether all the components are assembled properly.
- Connect the equipment to the current source.
- Check up the rotation direction of all the motors – observe the rotation marking.

Take notice of the warning label on the control panel!

9.6. Report on examination

All the works accomplished, the equipment is handed over to the customer.

It is unconditionally necessary to draw up a report on examination signed by the customer.

A copy of the completed survey report signed by customer shall be sent to the Gilles company.

9.7. Clear the place of installation

The assembly team accomplishing the installation of a new heating equipment is required to put the installation room into ordinary status,
that means:

- the packages put together and
- to bring them away from the installation place, if required by the customer,
- to remove any remains and cuttings fro the installation place, e.g. cable pieces, tubing, rests of hoses, etc.

10. Chimney

10.1. Chimney

The right chimney dimensions are an important presupposition for a problem less operation of the facility. The dimensions shall be calculated according to DIN 4705.

For the calculation the values of the flue gases specified in the Technical data should be taken. It is necessary to take into account that the flue ash gases temperatures within the lower measuring range (below 50 % of the rated heat output) raise up to 150 °C.

That is why the boiler must be connected to a type approved flue gas disposal system.

10.2. Use of a chimney lining

The following measures are used to determine the saturation level of a not dew point secured chimney and to prevent it:

Measure the output temperature on the upper chimney end during the facility operation.

- When the temperature range lies between 80 - 90 °C, there is no reason to be afraid of the saturation!

Examine the chimney in the cleaning gap after the first operational facility week.

- When the inside wall is dry, you need not be afraid of the saturation.

In case the output temperature on the upper chimney end is too low, or if the chimney inside wall is wet:

- adjust the minimum flue gases temperatures at 150 °C or higher,
- insulate the joint piece between boiler and chimney,
- insulate the chimney in the cold area (e.g. chimney in cold area, e.g. in attic).

If even after the repeated examination no improvement is seen, let examine the chimney by a chimney sweeper!

The installation of a draft or explosion damper is recommended!

When despite obeying the above mentioned installation instruction a problem of any kind arises, please do not hesitate to contact us immediately in order to prevent possible installation mistakes that could result in functional shortcomings later.

GILLES Energie- und Umwelttechnik GmbH & Co KG
Koaserbauer Str. 16
A-4810 Gmunden
Tel. +43 - 7612 - 737600
Fax +43 - 7612 - 73760-17
www.gilles.at
office@gilles.at