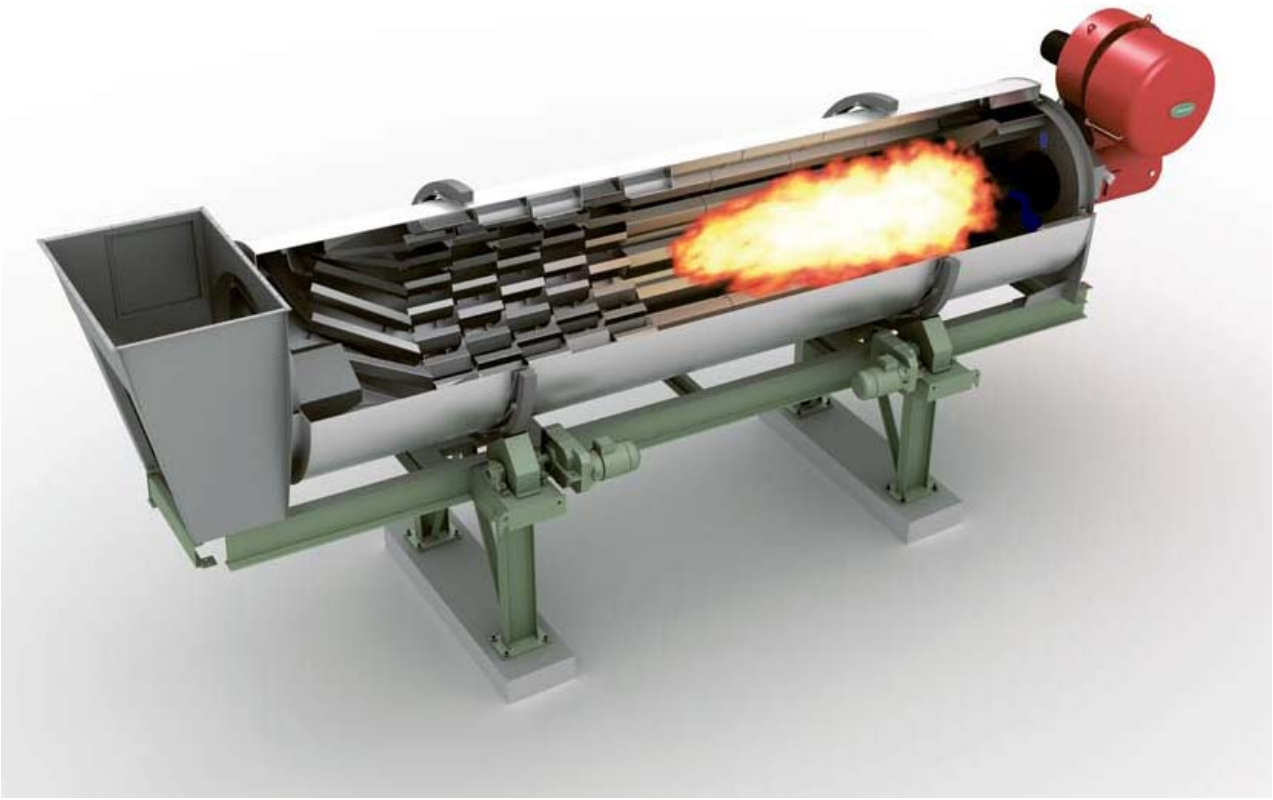
AMMANN

Instruction Manual
Dryer for fresh aggregate



Translation of the original instructions

GB

0201NMTR_201112_Gb

Font: Arial, WingDings

Author: GBS Documentation Langenthal

Created on: 09.12.2011

Introduction

As an owner or operator of the machine dryer for fresh aggregat, please refer to the following notes before setting up the machine and use them as a guide to safeguard your duty of supervision to prevent damages and subsequent costs .

During initial assembly, the plant operative must become familiar with the machine. This carried out in close cooperation with the Ammann installation supervisor.

After carrying out the approval procedure required for installation and operation, plant personnel are instructed on the initial setup. During this phase, Ammann offers advice and support.

The procedure covers the installation and assembly of units and devices, the laying of supply lines and electrical and control cables (including fuse protection, earthing, etc.). Protective equipment and hazards must also be addressed.

Check that the entire plant is safely accessible, for example handles, rails, barriers with safety circuits, etc.

Inspect the access and function of the emergency and fault cutoff devices.

Check that all necessary notices and prohibiting signs are displayed.

Discuss maintenance points and high-maintenance components with the installation supervisor or another represenative of Ammann.

After purchasing the plant or a machine, the plant operative /customer must fully control the process flow and must be familiar with the safety equipment and switches.

In addition to the requirements described in these operating instructions, be sure to observe the requirements of the operating licence, environmental protection regulations (TA Luft [German Technical Instructions on Air Quality Control], WHG [Water Resources Management Act]) and general accident prevention rules.

Be sure to read and observe the operating instructions of the supplier, which can be found in chapter 12 of the spare parts lists to ensure safe operation.

The operator is responsible for suitable access to temporay work areas, e.g. fixed platform ladders, scaffolding or lifting platforms. The operator is also responsible for providing safety gear for work that involves a risk of falling.

The declaration of conformity is enclosed.

Introduction and explanation of symbols

1 Introduction to the Operating Instructions

In the following the dryer for fresh aggregat is referred to simply as a machine

These operating instructions contain instructions and behavioural regulations that will ensure that the machine is used safely. The operating instructions must therefore be made available to all persons who are assigned work relating to the machine.

NOTE

The operator must read these operating instructions before beginning work on the machine!

These operating instructions describe the mechanical part of the machine. For the electrical wiring, you will receive specific diagrams. You will also receive separate documentation for the control system.

Instruct the corresponding personnel using these operating instructions before any work is performed on the machine.

These operating instructions should help you and the personnel get to know the machine and its intended use.

The operating instructions also contain important information on how to operate the machine safety, properly and economically. Observing these instructions will help to avoid danger, minimise repair costs and down times and increase the reliability and service lifetime of the machine.

NOTE

The mandatory on-site accident prevention regulations also apply!

Supplement these operating instructions with information on local regulations regarding accident prevention and environmental protection.

These operating instructions must always be available wherever the machine is in operation and be read and observed by all persons who are assigned work relating to the machine.

The spare parts, pneumatic diagrams and supplier documentation can be found in the folder "Spare part lists".

The images and drawings used may not always correspond with the exact state of the supplied machine. The configuration may differ from the illustrations.

NOTE

As operating company, you must perform a risk assessment for the machine. (§3 Betriebssicherheitsverordnung - BetrSichV, German Safety Ordinance)

A risk assessment is not part of the scope of deliver of the machine. You can separately order documents from Ammann for preparation of a risk assessment.

"Operation" means the following activities:

- Operating the machine
- Transport
- Installation
- Set up
- Troubleshooting during operation
- Disposing of production waste
- Disposing of operating materials
- Inspection
- Maintenance
- Repairs
- Disassembly

2 Explanation of symbols

2.1 Symbols used in these operating instructions

	Note	Important information!
	Attention!	General comments on dangers and dangerous behaviour.
	CAUTION!	Important for safety, must be strictly observed! Injury hazard if not observed.
	Caution! Electrical hazard!	At these points there is a danger of electric shock and from electric sparks.
	Safety first!	Follow the safety instructions exactly to ensure the safety of the personnel at all times.
	First Aid	Information on performing first aid measures
	PROHIBITED	These actions can lead to serious damage and injuries.

2.2 Signs

 Attention!	General comments on dangers and dangerous behaviour.
 Caution! RISK OF BEING CRUSHED!	At these points there is a danger of parts of the body being crushed.
 Caution! Danger of being pulled in! Danger due to being pulled in by mechanical parts!	Here there is a risk of being pulled in by machine parts or other mechanical hazards.
 Caution! DANGER OF FALLING!	There is a danger of falling at these points.
 Caution! DANGER OF BURNS!	The heat is so great at these points that burns may occur.
 Caution! Electrical hazard!	At these points there is a danger of electric shock and from electric sparks.
 Caution! Risk of fire!	Material can ignite at these points.
 Caution! Explosion hazard!	There is a risk of explosion at these points.
 ATTENTION! SUSPENDED LOAD!	Standing beneath suspended loads is forbidden.

	No access	No one is allowed at these points during operation.
	No passenger transport	These plant parts are not suitable for the transport of persons.
	SMOKING, NAKED LIGHT AND FIRE PROHIBITED!	Fire, naked light and smoking are forbidden at these points.
	Do not extinguish with water	Water must not be used for extinguishing here.
	Extinguishing equipment	Note on the use of extinguishing equipment.

	Hearing protection required!
	Wear a safety helmet!
	Wear face protection!
	Wear protection footwear!
	Wear protective gloves!
	Wear protective clothing!

2.3 Personal protection equipment PPE

Personal protection equipment includes at least a safety helmet, protective clothing, protective gloves and protection footwear.

3 Explanation of terms

Term	Explanation
Operating staff	Persons whose task it is to operate the asphalt mixing plant on a daily basis. These persons are employed by the operating company.
Qualified staff	Specially trained staff employed by Ammann or ancillary companies. Qualified staff may only operate in consultation with Ammann.
Check	A brief inspection, e.g. using sight, hearing or touch. E.g. for missing, loose or detached parts.
Test	An inspection with measuring instruments or tools. E.g. the power supply or temperature of parts of the plant.
Maintenance staff	Specially trained person whose task it is to perform maintenance work. These staff are generally deployed by Ammann or authorised by it in exceptional cases.

4 Liability

4.1 Changes

NOT PERMITTED

Changes, additions and conversions which impair the safety of the machine are not permitted!

For all other changes, additions and conversion that were performed and not agreed upon by Ammann, neither Ammann nor any supplier shall be liable.

This also applies for the installation and adjustment of safety equipment as well as welding of structural parts.

Modifications to the electrical control system that affect the safety of the machine are also prohibited.

If any changes which affect safety are undertaken without consulting the supplier, this will lead to the lapse of the manufacturer's declaration in connection with the machinery directive.
Ammann does not accept liability for consequential damage and accidents.

The computer is used exclusively to control the plant and perform statistical analysis and other programs that have been installed by Ammann.

Changes to the programs (software), programmable control systems or the system configuration of the computer are prohibited.

Any necessary modifications may only be performed by Ammann specialists or properly trained personnel.

Ammann accepts no liability for damages and accidents resulting from changes to the control system.

NOTE

The conformity of the machine applies solely to its state as delivered. Subsequent modifications that were not performed by Ammann are not covered by this conformity.

4.2 Use of other components

Ammann is not liable for the use of components not belonging to the machine and malfunctions resulting from their use.

For the interface to other components, Ammann is only liable when these have been designed and constructed by Ammann.

If the use of the machine is modified by the use of components not belonging to the machine, Ammann is not liable for any resulting defects or damage.

5 Guarantee

The guarantee conditions are specified in the purchase contract.

If no guarantee conditions have been specified, the corresponding legal statues on guarantees apply.

6 Declaration of conformity

EC declaration of conformity

CE

according to 2006/42/EC, Annex II, No. 1A

Ammann Schweiz AG
Eisenbahnstrasse 25
4901 Langenthal
Switzerland

We hereby declare that

Machine type:	Dryer for fresh aggregat
Machine designation:	T2280B3
Commission number:	AZ-66666

conforms with all relevant provisions of the EC Machinery Directive 2006/42/EC.

The machine is also compliant with all relevant provisions of the following EC Directives:
2004/108/EG:2004; 87/404/EWG:1987; 97/23/EG:1997; 90/396/EWG:1990; 94/9/EG:1994; 92/58/EWG:1992

The following harmonised standards (or parts of these standards) were used:
DIN EN ISO 12100-1:2003; DIN EN ISO 12100-2:2003; DIN EN ISO 13857:2008; DIN EN 349:1993+A1:2008
DIN EN 60204-1:2006+A1:2009; DIN EN 953:1997+A1:2009

In addition, the following standards and technical specifications were used:
DIN EN 746-1:1997+A1:2009; DIN EN ISO 13849-1:2008; DIN EN ISO 13849-2:2008
DIN EN ISO 14121-1:2007; DIN EN ISO 14122-1:2001; DIN EN 50281-2-1:1998+Corrigendum 1999

The following persons are authorised to compile the technical file:
Productmanager drying

Ammann Schweiz AG
Alex Lamers
Eisenbahnstrasse 25
4901-Langenthal
Schweiz
+41 (0)62 916 67 74
alex-lamers@ammann-group.com

Ammann Schweiz AG
4901 Langenthal, 2. Dezember 2011

Herr Pascal Rüegg Technical director GBB

Use and product description

1 Use for correct purpose

The machine is constructed according to the accepted technological standards and safety rules. However, improper use of the equipment may still be dangerous to life and limb.

NOTE

Only operate the machine when it is good condition.
Immediately rectify any problems that could affect safety!
Do not use the machine when a defect exists!

Use for the intended purpose also includes following the Operating Instructions and conforming to the inspection and maintenance conditions.

NOTE

Only use the machine for the corresponding intended use.
The use of the machine for any task other than the intended use is considered improper use.

The fresh-aggregate dryer is used exclusively for drying and heating of round and broken sand, gravel and crushed stone for the production of standardised asphalt mixtures. Any other usage is considered to be inappropriate. The manufacturer/supplier shall not be liable for any losses or damage arising herefrom. The risk shall be borne solely by the user. The fresh-aggregate dryer may only be operated in conjunction with an asphalt mixing plant!

After consulting Ammann Schweiz AG, the plant may be used for a different application in exceptional situations. Any necessary design changes must be performed by the operator, who bears sole responsibility for them.

2 Abusive use

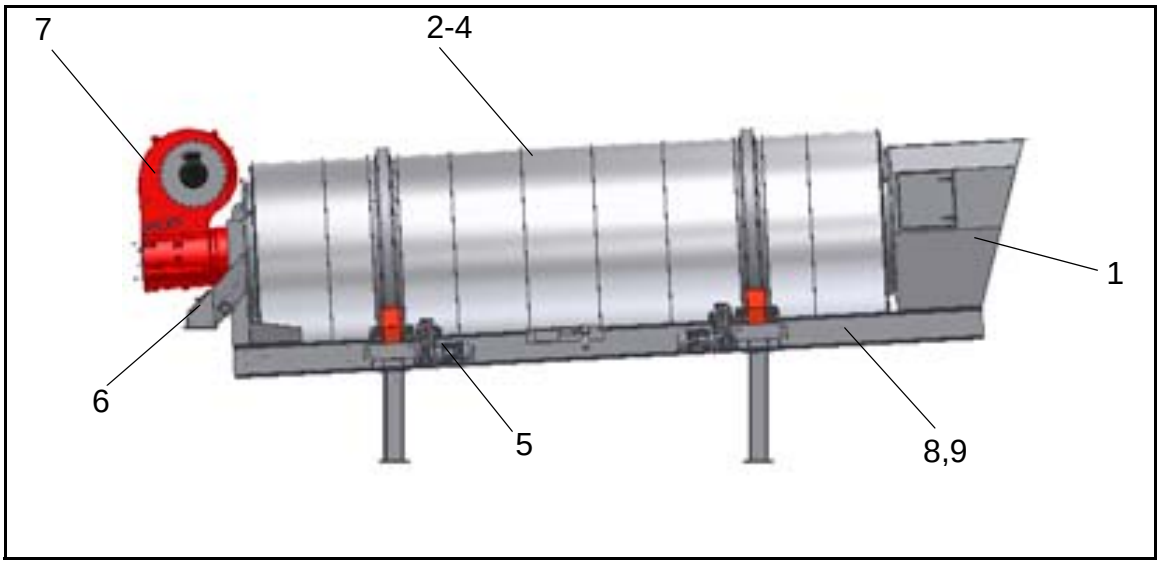
NOTE

Any use of the equipment beyond its intended purpose is considered to be inappropriate and is therefore prohibited!
Do not modify the machine in any way!

Improper use can endanger the personnel and cause damage to the machine.

Ammann is not liable for damage and injury resulting from improper use.

3 Description of the fresh-aggregate dryer



Description of the main components

1 Intake

2 Dryer drum

3 Fixtures

4 Insulation

5 Friction drive

6 Outlet with low-pressure sensor and thermoelement/temperature or infrared sensor

7 Burner (separate operating instructions)

8 Support frame

9 Chassis

Safety at work

1 General comments

The dryer for fresh aggregat machine is equipped with the necessary safety equipment according to the machine directory and EN 536.

Nonetheless, incorrect operation can lead to health hazards or machine damage.

Observe the following information for transport, assembly, operation, maintenance or general work on the machine.

The operating company is responsible for suitable access options to non-permanent workstations, such as platform ladders, scaffolding or lifting platforms. In addition, the operating company is responsible for safety equipment for work where falls present a hazard.

Check the screw connections according to the inspection intervals (chapter 3 „Inspection and maintenance intervals“, page 111).

The prescribed torques for tightening the fastening screws can be found in chapter 11 „Tightening torques“, page 50.

2 Prescribed protection and safety equipment

Symbol	Type of protection or safety equipment	Area of use
	**Protective helmet**	A protective helmet is to be worn by all persons in the plant.
	**Protective clothing**	Protective clothing, i.e. sturdy workwear without folds or extras, is to be worn by all persons who work on the plant or machines.
	**Protective shoes**	Protective shoes are to be worn by all persons on the plant.
	**Protective gloves**	Protective gloves are to be worn by all persons who work on the plant or machines.
	**Protective goggles**	Protective goggles are required when working with aggregate. They prevent dust and small rocks from getting into the eyes. Protective goggles are often worn together with light breathing protection. The mineral dust can affect the respiratory system.

Symbol	Type of protection or safety equipment	Area of use
	**Hearing protection**	Hearing protection must be worn at sound levels starting at 85 dBA.
	**Light breathing protection**	Light breathing protection is required for areas and work at which mineral dust can occur. The mineral dust can affect the respiratory system. Severe effects, including suffocation, can result.
	**Heavy-duty breathing protection**	Heavy-duty protective respiratory is required at areas and work at which vapours can occur in concentrated form. Heavy-duty breathing protection includes respiratory masks with screw filters. Breathing protection is independent of ventilation.
	**Safety harness**	A safety harness must be worn at work at significant height (0.5 m) and secured with appropriate material.

3 Coordination and supervision

According to the EC Construction Directive 92/57 EEC, for major projects, before the start of work a safety and health plan must be developed, compliance with which is monitored by the safety and health coordinator, both in the planning and implementation, and which is adapted to the situation at the construction site. Construction work must be performed by experienced and suitably trained persons.

The operating company is responsible ensuring that pending work is conducted by experienced and competent persons and must designate a responsible person, a coordinator, for the coordination of the work.

NOTE

Possible pending work includes maintenance work as well as assembly and disassembly work and transportation. Repair work, necessitated by malfunctions during operation, is also included in this area.

The coordinator can be the operator or a person appointed by the operator.

The coordinator is responsible for proper execution of work and for the safety on the construction site.

The coordinator must have sufficient experience and expertise with the pending work and monitor safe execution of the work and the specified measures.

The operator and the coordinator are responsible for ensuring that the pending work is only performed by competent persons under supervision of competent persons.

The operator or coordinator is responsible for the creation and maintenance of a safety and health plan.

The operating company is responsible for suitable access options to non-permanent or temporary workstations, such as platform ladders, scaffolding or lifting platforms. In addition, the operating company is responsible for the provision and use of safety equipment for work where falls present a hazard.

4 Coordination of work

Safe working practices of individuals or a work group does not necessarily prevent hazard to nearby persons not belonging to the same work group.

Only timely coordination of all persons working on the plant can prevent mutual endangerment.

Independent of observation of all official rules and obligations, the following must therefore also apply:

- Maintain contact
- Make agreements
- Be considerate
- Keep agreements.

The coordinator or operator is responsible for this coordination.

5 Work instructions

For all work on the plant, a corresponding written work instructions must exist at the plant that describes all necessary safety specifications.
This includes both maintenance and repair instructions as well as assembly or disassembly instructions.

The written form is not necessary if the corresponding work does not require any special safety specifications.

Safety specifications, depending on the degree of difficulty of the work, can include the following specifications:

- The weights of the parts to be machined or processed
- Storage of the parts
- Lifting points of the parts
- Attachment of the components to hoisting units
- The type of transport of the parts
- The position to be maintained during transport
- Installation of necessary auxiliary components for processing (e.g. installation or disassembly)
- The order of the work and dismantling or assembling the components
- The required load capacity of lifting equipment

- Measures to ensure the load capacity and stability of structures and components, also during individual work steps
- Measures for safe equipping and preparation of permanent and non-permanent or temporary workstations and access to them
- Overview drawings or sketches with information on workstations and access points
- Measures against possible falling or slipping of personnel when performing work
- Measures to prevent objects from falling
- Information on first aid and fire protection

6 Suitability of personnel

Work on an Ammann plant and individual components may only be performed by specialist approved by Ammann.

Work on or in the plant also includes work at significant height. This is defined as work where there is a danger of falling, i.e. work at a height above 0.5 m.

A requirement for working at a significant height is the physical suitability of the personnel. A selective medical examination is recommended for persons who will perform work at a significant height.

DANGER! RISK OF FALLING!

For assembly work above the head at a significant height (> 0.5 m)!

⇨ Work with a risk of falling may only be carried out by employees who do not suffer from fainting spells, dizziness or similar infirmities.

In most cases, these types of problems are not apparent. Appeal to all employees to inform their supervisors that they suffer or have suffered from dizziness, fainting spells or similar infirmities, even if they have been temporary.

Work at elevated workstations or at a significant height may only be performed when safe access, solid footing and effective fall protection, i.e. safety equipment (tackle/safety harness) are made available and are used.

Selection of Personnel

Welding work on load-carrying components may only be performed by trained, certified welders.

Selection of Personnel

Work on electrical equipment of the plant may only be performed by an electrician, or instructed persons under supervision of an electrician, according to the regulations and rules concerning electrical systems.

Selection of Personnel

Work on gas equipment (gas use equipment) may only be performed by personnel who are trained for this work!

Selection of Personnel

Work on hydraulic equipment may only be performed by personnel with special knowledge and experience with hydraulic systems!

7 The 5 safety rules

When working with electrical systems or devices observe (⇨ *chapter „Work on the electrical system“, page 44)* the 5 safety rules (DIN VDE 0105-100:2005-06, Chapter 6):

➔ Disconnect (⇨Page 40)

➔ Make sure equipment cannot be switched back on (⇨Page 41)

➔ Make sure no voltage is present (⇨Page 42)

➔ Ground and short circuit (⇨Page 42)

➔ Cover or close off any neighbouring live parts (those carrying voltage) (⇨Page 43)

The following descriptions, written in *italics*, on the individual safety rules, are in part quoted from DIN VDE 0105-100:2005-06, Chapter 6. These quotes are used solely for the purpose of more detailed explanation of the corresponding safety rule.

Disconnect

The part of the installation that will be worked on must be disconnected from all supply feeds. This must be performed by using isolation gaps in the air or equivalent isolation so that it is ensured that no flashover can occur.

Inform the plant operator the areas in which you will be working and which plant parts must be de-energised.

Make sure equipment cannot be switched back on

All switches with which the work area was shut off must be secured against being switched back on, preferably by locking the actuator mechanism.
If no locking devices are available, then measures that have proven themselves equivalent in practice must be used to secure the switches from being switched back on.
If auxiliary power is required for actuation of the switches, the auxiliary power must also be rendered ineffective.

Signs must be put up to make it clear that unauthorised intervention is prohibited.

NOTE

Put up a sign on the deactivated main switch, providing the following information:

- ⇨ Work is being performed on the electrical system.
- ⇨ Who is performing this work?
- ⇨ Where is the work being performed?

Attach the sign so that it can be seen easily and cannot be removed easily. If you cannot attach the sign directly to the switch, secure a clearly associated sign in close proximity.

If remote control is used to prevent re-activation, actuation of the switches locally must also be prevented. All transmission and interlock systems that are used for this purpose must be completely reliable.

Parts of the plant that can continue to have voltage after deactivation, such as capacitors and cables, must be discharged with suitable equipment.

Make sure no voltage is present

The fact that all voltages have in fact dissipated must be confirmed as close as possible to the work area for all poles . This condition must be determined for voltage-free parts of the plant according to the operational regulations. This includes, for instances, the use of fixed and/or portable voltage testers. The voltage testers must be inspected directly before and if possible also directly after use.

Ground and short circuit

In high-voltage systems and low-voltage systems, all parts on which work will be performed must be grounded and short circuited at the work area.
The grounding and short-circuit equipment must first be connected with the ground system and then to all parts to be grounded. The grounding and short-circuit equipment should be visible from the work area whenever possible. Otherwise, it should be placed as close to the work area as possible.

If cable lines need to be interrupted or connected during work and there is a risk of differences in potential, then suitable measures must be taken at the work area, such as bridging or grounding.

In any case, it must be ensured that the grounding and short-circuit equipment, cables and connectors are suitable and dimensioned for the short-circuit loads at the place where they will be installed.

It must be ensured that the grounding and short-circuit measures remain effective during the entire duration of the work. When the grounding and short-circuiting must be removed for the duration of measurements or inspections, additional or other suitable safety measures must be performed.

If remote-controlled grounding switches are used to ground and short-circuit, the switch position of the ground switch must be transmitted reliably by the remote-control system.

Cover or close off any neighbouring live parts (those carrying voltage).

If plant parts near the work area cannot be deactivated, additional safety measures must be taken before the start of work, as described in "Working near electrically live parts".

Working near electrically live parts:

Work may only be performed near electrically live parts when suitable measures ensure that contact with the live parts is impossible and that the hazard zone cannot be reached.

Electrical hazard near live parts can be prevented using protective equipment, covers, encapsulation or insulating sheathing.

NOTE

If you have additional questions on the 5 safety rules or if special circumstances exist, read and observe DIN VDE 0105-100:2005-06 or the equivalent local regulations.

8 Work on the electrical system

NOTE

In case of a malfunction, immediately shut off the plant's energy supply!

The operating company must ensure that the electrical equipment of the plant is regularly inspected and tested.

Selection of Personnel

The operating company must ensure that work on the electrical system or work materials is only performed by a trained electrician or instructed personnel under guidance and supervision of an electrician and that this work corresponds with electrical regulations!

Before all activities involving the electrical system, inform the plant operator about the performance of the work and its nature.

Make arrangements with other persons working on the plant regarding maintenance work and the associated switching on and off of the plant parts.

When replacing fuses, only use original fuses with the specified amp rating.

Defects, such as loose connections or damaged cables must be corrected immediately by the electrician.

If the cables show signs of heat damage, check the entire associated circuit.

- ✓ Correct the cause of the defect.
  - ⇨ Also replace any other parts that could have caused the defect.
    - ⇨ This will reduce the likelihood of a repeat defect.
- ✓ Rectify the defect.
- ✓ Always replace plugs and sockets with the same parts. Pay attention to codings.

9 Welding, burning and grinding

Welding, burning and grinding work may only be performed when it has been approved in writing by the operations manager.

NOTE

During welding, burning and grinding work, post a fire guard!

Before welding, burning or grinding work, remove dust and other flammable materials from the corresponding machine and its environment.

Ensure sufficient ventilation when welding, burning or grinding.
Observe any national regulations on work in tight areas!

Clean the corresponding machine by thoroughly wetting or spraying out the work area.
No water may come into contact with electrical components.

Before welding, remove the electronic inserts from the fill-level sensors.
The current of the welding device will damage the electronics of the fill-level sensors.

Connect the antipole of the welding device to the frame of the corresponding component or directly to the part to be welded.

Bring the antipole as close as possible to the welding spot.

NOTE

After completing the repair work, cool the affected working area to the ambient temperature and look for any ignition sources or smouldering areas!

ATTENTION!

Be careful of material cracks

During welding or burning work on the dryer drum, cooling may only be performed with air. It is best to allow the drum to cool down slowly.

10 Work in silos, drum, tanks etc.

The following applies for entering:

- The dryer drum
- The filter
- The screen
- The hot aggregate silo
- The aggregate scale
- The mixer
- Any connected silos and tanks.

Wear the PPE (see chapter „Personal protection equipment PPE“, page 18).

Use personal protective equipment (tackle/safety harness) when working at significant heights (> 0.5 m).

For your own safety, you must always be observed by a person outside of the component.

Stay in constant contact with this person.

If visual contact is not possible, maintain audible contact with this person.

Leave the component immediately if you lose visual contact with the monitoring person.

This person must immediately check up and initiate emergency measures if necessary when contact is lost with the person within the component.

Safety first!

Never perform work within the component without these safety measures!

NOTE

When working in tight areas, also observe any applicable local regulations!

11 Tightening torques

11.1 DIN 18 800 Part 7

If no other specifications are made in the following chapters, the required tightening torques, preload forces and angles for 8.8 screws are based on DIN 18 800 Part 7 and can be found in the following table.

	1	2	3	4	5
	Weight	Required preload force	Preload the screw according to the:		
			a) Torque method		b) Angular momentum method
			Tightening torque to be applied M_A to achieve control preload force F_V		Preload force to be set $F_{V,DI}$ to achieve the control preload force F_V
			Surface condition		
			Galvanised and lubricated[a]	As manufactured and lightly oiled	As in column 3 or 4[b]
		kN	Nm	Nm	kN
1	M 12	35	70	Procedure test required	40
2	M 16	70	170		80
3	M 20	110	300		120
4	M 22	130	450		145
5	M 24	150	600		165
6	M 27	200	900		220
7	M 30	245	1200		270
8	M 36	355	2100		390

[a] Treat nuts with molybdenum sulphide or equivalent lubricant

[b] Independent of the lubrication of the threads and the contact surface of nut and screw

Required tightening torques, preload forces and angles for 8.8 screws according to DIN 18800 Part 7

If no other specifications are made in the following chapters, the required tightening torques, preload forces and angles for 10.9 screws are based on DIN 18 800 Part 7 and can be found in the following table.

	1	2	3	4	5	6	7	8
	Weight	Control preload force Fv	Preload the screw according to the:					
			Torque method		Angular moment method	Angle method	Combination method	
			Tightening torque to be applied M_A to achieve the control preload force Fv		Preload force to be set $F_{V,DI}$[b] to achieve the control preload force F_v	Preload torque $M_{VA,DW}$[b]	Preload torque $M_{VA,KV}$	
			Surface condition					
			Galvanised and lubri-cated[a]	As manufac-tured and lightly oiled	As in column 3 or 4[b]		As in column	
							3[a]	4
		kN	Nm		kN	Nm		
1	M 12	50	100	120	60	10	75	90
2	M 16	100	250	350	110	50	190	250
3	M 20	160	450	600	175		340	450
4	M 22	190	650	900	210	100	490	680
5	M 24	220	800	1100	240		600	825
6	M 27	290	1250	1650	320	200	940	1240
7	M 30	350	1650	2200	390		1240	1650
8	M 36	510	2800	3800	560		2100	2850

[a] Treat nuts with molybdenum sulphide or equivalent lubricant

[b] Independent of the lubrication of the threads and the contact surface of nut and screw

Required tightening torques, preload forces and angles for 10.9 screws according to DIN 18800 Part 7

Technical data

1 General comments

Specifications on the electrical connections can be found in the electrical documentation.

The electrical documentation is provided separately from these operating instructions.

Technical data on the individual components and supplier parts can be found in the operating instructions of the corresponding manufacturer.

The operating instructions of the respective manufacturers can be found in the component and supplier documentation in chapter 12 of the spare parts lists.

The following data merely provide an overview of the plant specifications.

2 Emissions

2.1 Noise

The sound output of the fresh-aggregate dryer is very high

WEAR EAR PROTECTION!

Wear hearing protection when working with the fresh-aggregate dryer!

2.2 Vibrations

The vibrations of the fresh-aggregate dryer are not life-threatening.

They do not represent a health hazard for the personnel or a hazard for the stability of the components.

3 Dimensions and weights - dryer for fresh aggregat

Model	Length [mm] (with burner)	Length [mm] (without burner)	Width [mm]	Heigth [mm] (without burner)	Weight [kg]	Volume [m^3]	Mechanical output* [t/h]	Friction drive [kW]	Speed [min^{-1}]
T1760B3	8‘500	8‘050	2‘300	2‘800	12‘300	13.6	76	4x5.5	9.3
T1760B3 JB	8‘500	8‘050	2‘300	2‘800	12‘000	13.6	76	4x5.5	9.3
T2070B3	10‘000	9‘350	2‘650	3‘000	15‘000	22.0	113	4x9.5	8.2
T2070B3 JB	10‘000	9‘350	2‘650	3‘000	14‘500	22.0	113	4x9.5	8.2
T2280B3	11‘000	10‘600	2‘900	3‘100	19‘500	30.3	161	4x11	7.9
T2280B3 JB	11‘000	10‘600	2‘900	3‘100	19‘000	30.3	161	4x11	7.9
T2290B3	12‘300	11‘600	2‘900	3‘450	21‘900	34.2	174	4x15	7.9
T2590B3	12‘800	12‘150	3‘000	3‘600	23‘500	44.1	226	4x15	7
T25100B3	13‘800	13‘200	3‘000	3‘600	26‘200	49.0	232	4x18.5	7
T27100B3	14‘000	13‘150	3‘100	3‘650	32‘000	57.2	275	4x18.5	6.5
T27110B3	14‘800	14‘150	3‘100	3‘650	35‘000	62.8	275	4x22	6.5
T29110B3	14‘900	14‘310	3‘300	3‘650	37‘000	72.5	349	4x22	6.1
T2580B3 UG3	12‘650	11‘180	2‘980	3‘560	20‘500	39.2	226	4x15	7
T2590B3 UG3	11‘680	12‘150	2‘980	3‘560	21‘500	44.1	232	4x15	7

* The output is an approximate value. The actual output depends on the burner type, mineral moisture content and flow volumes of the plant.

All specifications are without a support frame!

Transport

1 Hazards during transport

1.1 Fresh aggregate dryer

The dangers arising during transport are listed in the following table.

	Danger source	Hazard	Measure
	Loading and unloading the HGV	**Caution!** **Danger of injuries!** due to falling loads	Train staff. Only use tested lifting tackle in perfect condition. Observe notification sticker on sling points. Wear the PPE (see chapter „Personal protection equipment PPE“, page 18).

	Danger source	Hazard	Measure
	Securing the dryer	**Caution!** **Danger of injuries!**	Train staff. Note loading instructions.
	Assembly of parts	**Caution!** **DANGER OF BEING CRUSHED!** Crushing of parts of the body between components that are being assembled.	Do not stand between fixed components and components that are being moved. Use extreme caution during transport work!

2 General comments

NOTE

Ammann is not liable for damage resulting from improper transport. This does not apply for transports performed by Ammann.

Please observe the following before transport:

- Transportation of the components may only be performed by trained specialists or instructed persons under the supervision of specialists.
- Use the supplied transport securing devices for transport.
- Only use the specified and labelled transportation routes.
- Observe barricades and hazardous areas.
- Keep transport routes free.
  - When depositing loads next to tracks, keep a distance of at least 0.5 m between the load and the furthest protruding parts of cranes or vehicles.
  - Deposit the loads to that they cannot slip, roll away, fall over or fall down.
  - Check the load capacity of the ground and if necessary use planks or squares as a base.
- Carefully plan out the transport beforehand.
  - Use suitable aids, such as heavy-duty rollers, hand trucks or special lifting devices. Do not overload these aids.
  - Only use lifting equipment with which unintentional, self-actuating release of the load can be prevented.

- Do not operate motor vehicles, electric carts, forklifts, cranes, lifts, conveyors and lifting platforms without the corresponding qualification and training.
  Only specially appointed and trained specialists may operate these machines.
- Ensure that no persons can go under suspended loads.
- Make sure that industrial trucks are never used to transport people!
- Check the load-carrying equipment (ropes, chains, cable eyes, shackles, etc.) for damage and only use intact, tested and approved parts.
- Secure the load on the transport vehicle properly and use suitable anchor points for this purpose.

3 Cranes

NOTE

As long as no other provisions are made with respect to the cranes in the order, specifications or other written documents, observe the following information.

For transport and assembly of components, the use of a crane with the following technical specifications is recommended:

- Maximum load 70 t
- Jib length up to 40 m

4 Suspension eyes and lifting tackle

Suitable lifting tackle may only be secured at suitable suspension eyes and lifting points. These suspension eyes and lifting points are marked or labelled yellow-black or with green-white stickers (crane hook symbol).

If no suspension eyes or lifting points exist, secure the lifting tackle to fixed parts of the machine. Ensure that this does not cause damage to the machine.

For attaching loads, use approved and tested chains, cables or lifting straps or slings.

Competent instruction (such as information on correct use of hoisting equipment) of the personnel assigned the task of transporting the components using a crane is essential and mandatory.

The operating company, assigned coordinator or safety officer is responsible for this instruction.

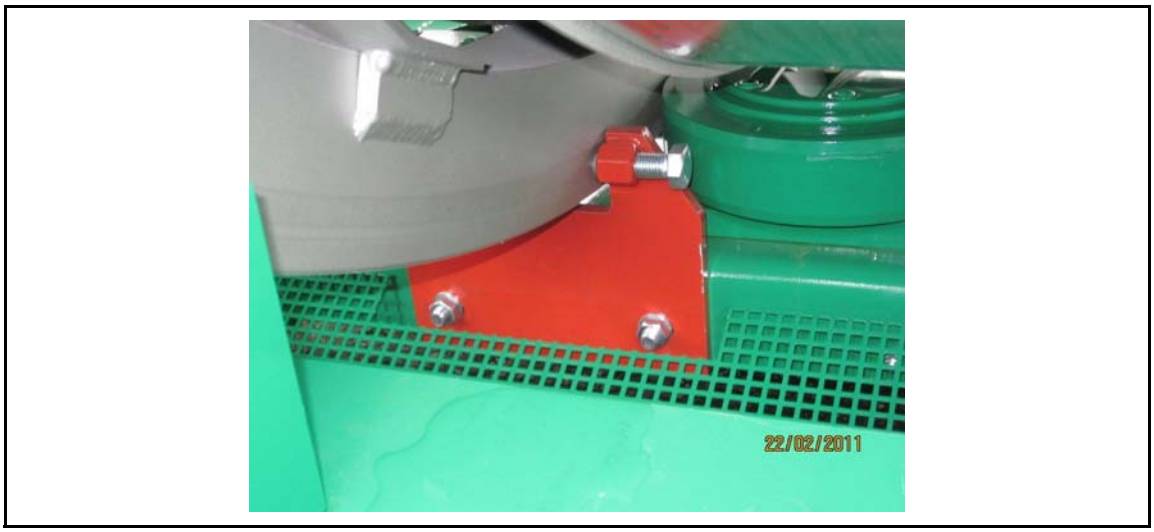
4.1 Lifting the dryer

Before lifting the dryer, the cable guides and clamp plates must be mounted.

NOTE

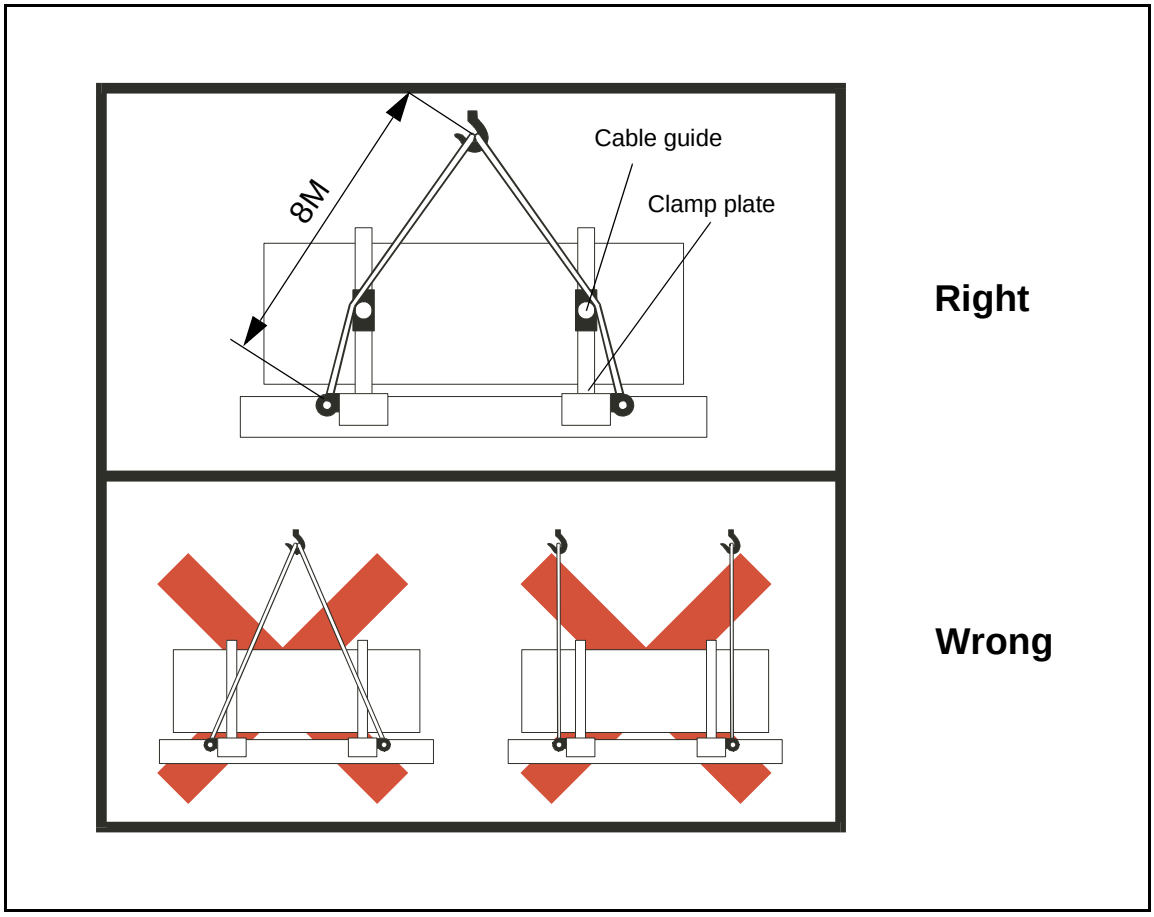
If the burner is pre-assembled, it must be protected from impacts and vibration during transport.

Cable guide



Clamp plate

To be able to lift the dryer, the hoisting equipment must be secured and arranged as shown in the figure.



Arrangement and securing of hoisting equipment for lifting the dryer

4.2 Dimensions and weights - dryer for fresh aggregat

The dimensions and weights can be found in the table in chapter „Dimensions and weights - dryer for fresh aggregat“, page 56

Assembly and commissioning

1 Hazards during assembly

1.1 Dryer for fresh aggregat

	Danger source	Hazard	Measure
	Transport of components by crane	**Attention!** **SUSPENDED LOAD!**	Do not stand under suspended loads! Wear the PPE (see chapter „Personal protection equipment PPE“, page 18)
	Positioning the supporting frame Bolt machine to support frame Aligning the machine	**Caution!** **DANGER OF BEING CRUSHED!** Crushing of parts of the body between components that are being assembled.	During installation do not take hold of the points at which the components are being assembled, unless this is essential for installation. Do not stand between fixed components and components that are being moved. Use extreme caution during installation!

	Danger source	Hazard	Measure
  	Plant parts are significant height (> 0.5m) Burner installation Bolt machine to support frame Installing the raw gas duct	**Caution!** **Tripping hazard!** **Caution!** **Danger of falling!**	When working on plant parts that are not provided with fixed access ways, use secure steps and safety equipment (tackle/safety harness). We recommend using installation lifts or work platforms. When working in the lower area, platform ladders with a fixed work surface can also be used. Permanent means of access must be provided with railings or support rails and baseboards. Always protect yourself from falling! Particular caution must be used when working at great height and exposed to the wind!

	Danger source	Hazard	Measure
	Electrical devices and connections	**Caution! ELECTRICAL HAZARD!** (electric shocks and burns)	Do not take hold of electrical connections. Regularly check electrical components, such as cables, overload protection, earthing and insulation. Ensure that electrical connections have been installed according to regulations and as intended. Only carry out work on parts of the plant which have been de-energized in accordance with the 5 safety regulations (chapter „The 5 safety rules“, page 40)!

2 Preparations for installation

2.1 Inspections before installation

When the delivery arrives at the plant, check to see that it is complete.
The exact scope of delivery can be found in the order confirmation.
Check the components for transport damage.
Check that the correct version has been delivered.

Remove foreign material and packaging.

2.2 Foundations

The load capacity of the ground or surface must fulfil the requirements of the application!

Check the layout and construction of the foundations according to the load plan. Check the size of the foundations, the distances of the foundations to one another, the foundation height and the position of the anchor points. Observe the height tolerances. Compare the permissible surface pressure of the foundations with the specifications in the load plan.

The tolerances of the foundation height must be strictly adhered to!

Mobile foundations must be aligned to a height difference of ± 1 mm using a level and filling plates. If mobile foundations are used, the ground must be prepared beforehand accordingly.

2.3 Energy and operating media supply

Before starting installation work, the necessary supply connections must be available. Required connections include.:

- Electrical connection
- Pneumatic connection
- Oil supply connection
- Gas supply connection
- Water supply connection

Only used intended plugs or couplings.

Make sure that the connections fit properly.

3 Installation

3.1 General comments

A significant proportion of the components are delivered pre-assembled. Exceptions are described below.

The components are for the most part pre-assembled on the ground and the parts are installed according to the assembly documentation.
I*nstall and mount all parts only according to the corresponding assembly documentation.*

If no other instructions are provided, only remove the assembly safeguards after complete installation of the corresponding component.

Access paths (stairs, platforms, ladders) are installed together with the corresponding components.
Install all access options for a component, including railings and other safety equipment, before you install the next component.

For the separation points of the components, only use screws of the size and quality specified in the screw lists or assembly drawings. This applies in particular for re-assembly after maintenance or moving the plant.

When making the screw connections, use the tightening torques according to DIN 18800 Part 7 (chapter „Tightening torques“, page 50).

Energy and resource supply connections (electrical energy, compressed air, fuels, water) may only be connected to the corresponding lines when the plant is ready to be commissioned.

The supply lines are partially pre-assembled; during assembly the lines of the various components must be connected with one another according to the assembly documents or the individual components must be connected.

ATTENTION!

Danger of spraying and leakage!

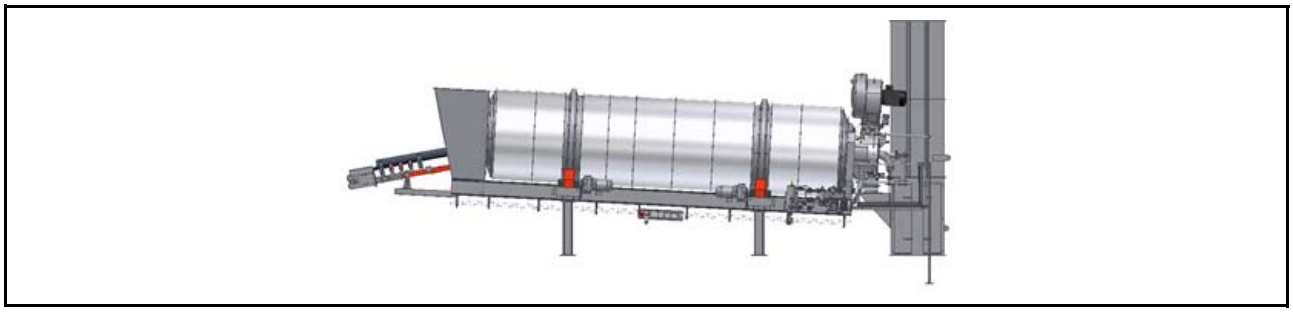
Insulation work on lines and fittings that handle liquids may only be performed after you have determined that there are no leaks in the system (leak inspection).

3.2 Electrical connection

Ground all plant parts.

Route the individual wires via the shortest route from the cable guide to the terminal board. This reduces the risk of damage to the wires caused by vibration.

Make the electrical connections according to the labelling and schematics. The schematics are found in the electrical documentation.



3.3 Mounting the dryer

Create the following conditions:

✓ Measure the foundation. Observe chapter 2.2 „Foundations“, page 71

1 Remove the transport safety devices from the dryer.

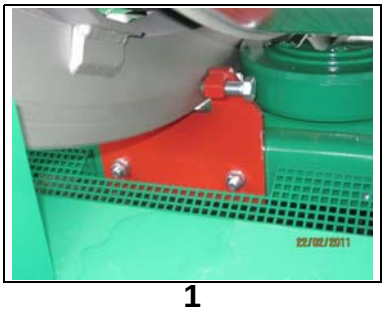
2 Set the dryer on a suitable surface.

3 Mount the burner (if dryer and burner were supplied separately). Observe the separate operating instructions for the burner.

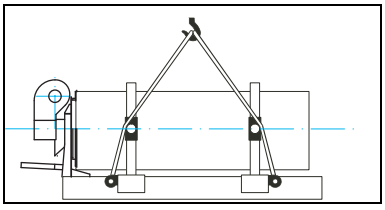
4 Distribute the supports to the correct positions (see foundation plan). Lift the dryer with the crane and onto the support frame.

⇨ Ensure that the hoisting equipment is properly secured and guided.

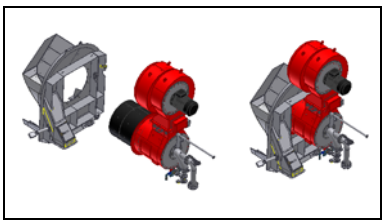
5 Position the chassis onto the supports and screw the supports to the chassis and to the foundation. Mount the burner supports



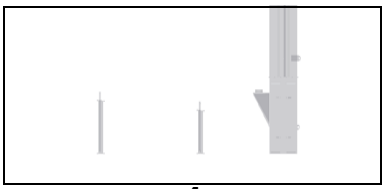
1



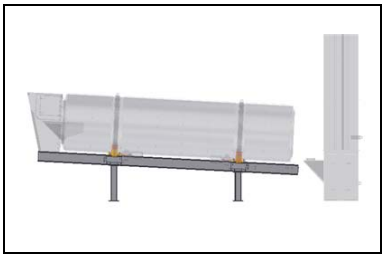
2

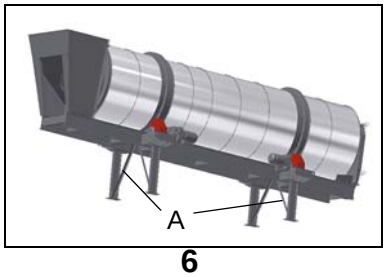


3

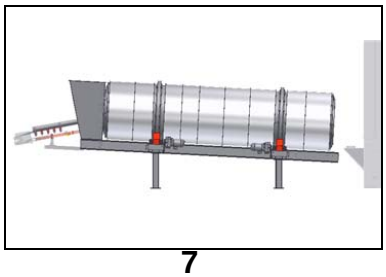


4

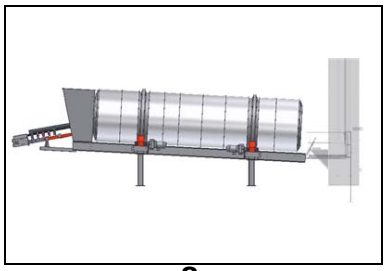




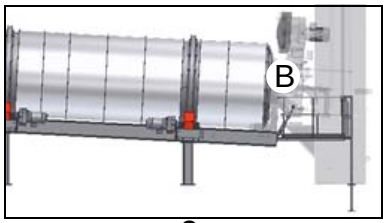
6



7



8



9

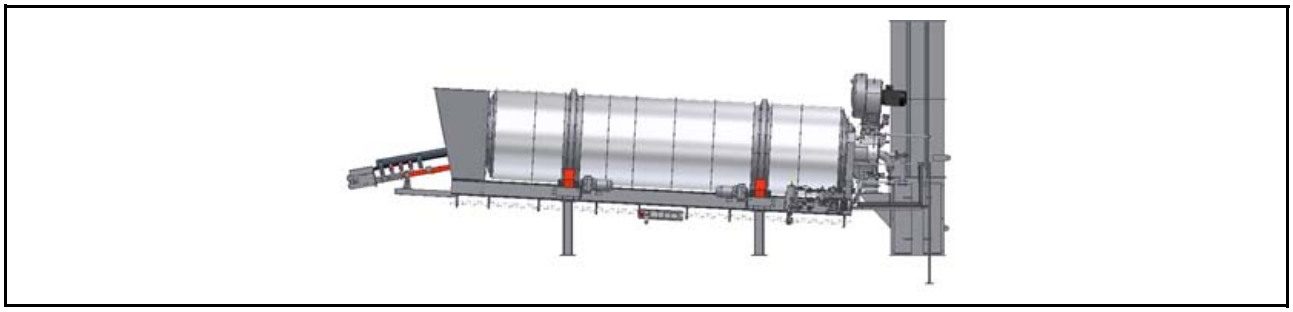
Mounting the dryer (continued)

6 Mount and screw on the wind bracing **(A)** between supports and dryer chassis

7 Mount the support onto the feed belt.

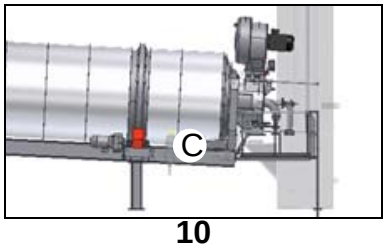
8 Mount the burner platform, including ladder.

9 Mount the outlet **(B)** with the burner (if this component was not delivered already pre-assembled).



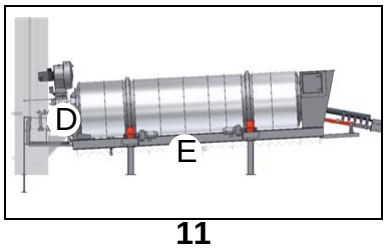
Mounting the dryer (continued)

10 Mount the burner pump group **(C)**.



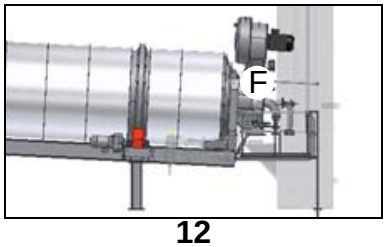
10

11 Mount the temperature sensor **(D)**, cable conduits **(E)** and the additional electrical and pneumatic components.



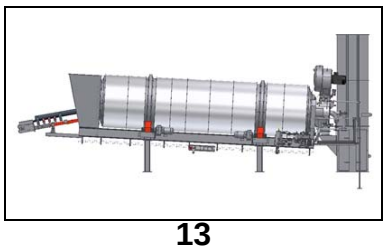
11

12 Mount the low-pressure sensor **(F)** and connect it to the pneumatic system.

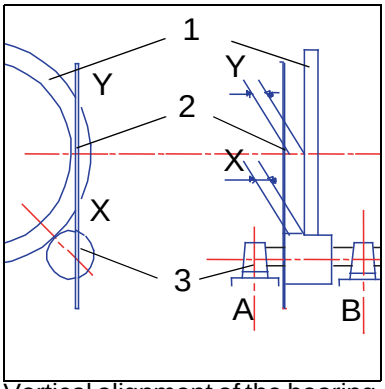


12

☑ **13 The dryer has been mounted**

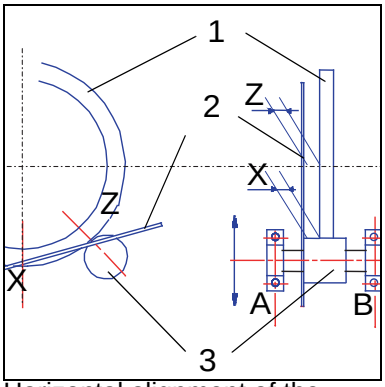


13



Vertical alignment of the bearing rings and rollers

Key
1 = Bearing ring
2 = Ruler
3 = Drive roller



Horizontal alignment of the bearing rings and rollers

3.3.1 Aligning bearing rings and rollers at a standstill

Create the following conditions:

✓ Under no circumstances may the dryer be started during the alignment procedure The dryer must be de-energised according to the 5 safety rules before the alignment procedure

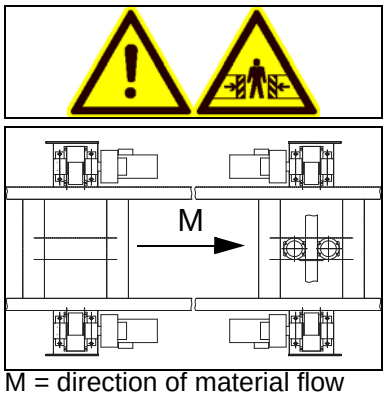
1 Vertical alignment
x = y with a tolerance of ± 1.0 mm, otherwise prop up bearing A or B until the dimension is within the tolerance.

2 Horizontal alignment:
x = y with a tolerance of ± 1.0 mm, otherwise move bearing A or B until the dimension is within the tolerance.

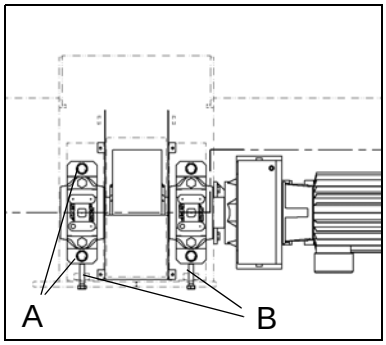
3.3.2 Alignment of the drum barrel

Create the following conditions:

- ✓ Under no circumstances may the dryer be started during the alignment procedure The dryer must be de-energised according to the 5 safety rules before the alignment procedure
- ✓ The protective covers of the rolls must be removed for aligning the drum movement. Align drum



M = direction of material flow



Align drum

Loosen the bearing screws **(A)** on the side opposite the gears

Loosen or tighten the pressure screws **(B)** 1/8 of a turn

Tighten the bearing screws

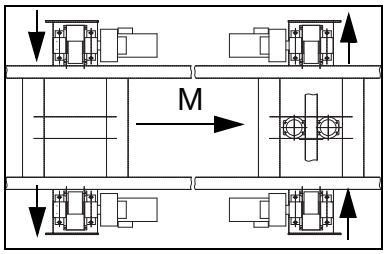
- ✓ Check the direction of rotation. If necessary, exchange the two poles at the motor connections.

Observe the drum for one hour and check whether the guide rolls and the bearing ring only touch partially under full load.

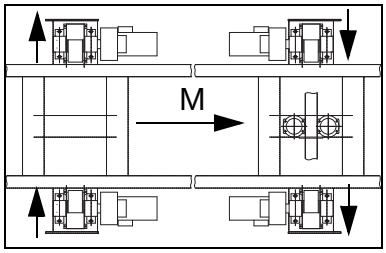
NOTE

Before the dryer can be definitively reconnected to the power source, the protective covering must be put back on properly.

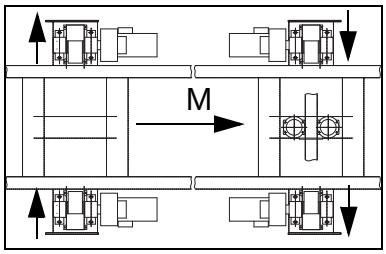
1



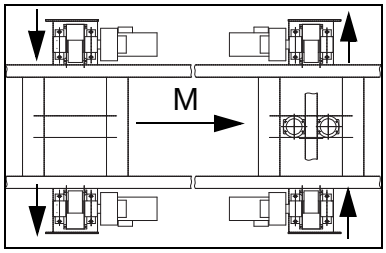
2



3



4



Aligning the drum movement (continued)

1 Drum rotates to the right

✓ Correction if the drum runs towards the outlet

2 Drum rotates to the right

✓ Correction if the drum runs towards the inlet

3 Drum rotates to the left

✓ Correction if the drum runs towards the outlet

4 Drum rotates to the left

✓ Correction if the drum runs towards the inlet

4 Commissioning

4.1 General comments

The following inspections are to be performed for first-time commissioning of an Ammann dryer in the following order:

- Check whether there is any foreign material in the dryer and remove any material you find.
- Check that all transport safety equipment has been removed!
- Ensure that outlet openings and the downstream material transport equipment (hot elevator) provide a uniform material flow.
- Check whether the mains voltage corresponds to the specifications on the component nameplates.
- Check whether the dryer is displayed correctly on the controller monitor.

After successfully performing these inspections, the dryer can be operated.

ATTENTION!

Risk of accidents!

Only persons assigned tasks associated with initial operation may be in or around the plant.

⇨ Before beginning commissioning, ensure that no unauthorised persons are in or on the plant!

Safety first!

Commissioning may only take place if the plant is installed completely, including energy connections, the controller and all safety equipment.

Before commissioning ensure that there is visual contact between the control cabin and all persons on the plant. If visual contact is not possible, wireless voice communication must be made.

The plant operator is responsible for ensuring that all persons working on the plant have been properly informed about the startup procedure and potential hazards before the machine and units are switched on.

The technicians who have installed the plant's electrical plant are responsible ensuring that only plant parts and units can be provided with electrical energy and that the installation of the electrical components was performed properly and the components are ready for operation.

5 Trial operation

Trial operation corresponds to daily plant operation.

DANGER! RISK OF BURNS!

Work in and on the drum!
During operation, parts of the drum, inlet and outlet can become hot.
⇨ Do not touch the dryer during operation!

⇨ Allow the dryer to cool down before work or setting operations!

⇨ Wear PPE for work on and in the drum (chapter 1 „Personal protection equipment PPE“, page 18)

NOTE

Before all work in the drum, the drum must be ventilated for at least 15 minutes. At least three times the volume of the drum must be extracted during this period. Allow the drum to cool down to a reasonable temperature before entering it. The drum must also be de-energised (see chapter 1 „The 5 safety rules“, page 40 et seqq.).

DANGER!

Be careful of rotating parts!

NOTE

When performing setup procedures or making modifications in the drum, the fuel supply must be shot off and the electric supply must be de-energised according to the five safety rules. A supervisory person must observe the procedure from outside the dryer.

The following activities are required to shut off the energy supply.

- For natural gas and liquid gas: Shut off feed (ball valve).
- For oil supply: Switch off pumps. Close ball valve

NOTE

Observe the burner operating instructions!

During trial operation, the heat transfer for various load ranges and dosing recipes must be inspected with the following target field for the operating temperatures:

Mineral	
· Depends on country, mixture quality and silage period	160 - 250°C
· Maximal permissible temperature for mastic (poured) asphalt	350 °C
Raw gases	
· Minimal permissible temperature to avoid water condensation in the fabric filter	95 °C
Permissible temperature(before filter) to avoid damage to the filter fabric	
· For Amatex S, without sulphur load	95 - 110°C
· For Amatex S, with sulphur load	110 - 130°C

In rare cases, the selection of the material can lead to temperature fluctuations. Material-related temperature fluctuations require an adjustment of the drum blades. Changes to the drum blades may only be performed after consulting Ammann.

Operation

1 Hazards during operation

1.1 Hazards during operation of the fresh aggregate dryer

Hazards specific to the fresh aggregate dryer are listed in the following table.

	Danger source	Hazard	Measure
	Hot surface	**Caution!** **DANGER OF BURNS!** During operation, parts of the drum, inlet and outlet can become hot (> 60°C).	Do not touch the drum of the fresh aggregate dryer during operation Always allow the drum of the fresh aggregate dryer to cool down before work or setting

	Danger source	Hazard	Measure
	Hot mineral	**Caution!** **DANGER OF BURNS!** Any escaping aggregate or non-insulated parts of the fresh-aggregate dryer will reach temperatures above 60°C. When making melted asphalt, the temperature of the aggregate can go up to 350°C.	Avoid all skin contact

	Danger source	Hazard	Measure
 	Moving system parts	**Caution!** **Danger of being crushed or pulled in!** **Caution!** **Danger of injuries!** Moving system parts.	Never remove safety equipment. Only operate the system with the associated safety equipment, such as protective grating in inspection flaps and covers! Never reach in between moving parts! See chapter 5 „Troubleshooting“, page 121 in chapter 1 „Inspection, maintenance, repairs and trouble-shooting“, page 101 et seqq. for troubleshooting

2 Notes for the operating company

Only operate the machine when it is good condition.

Due to the low number of employees for the system, each workstation is considered an individual workstation.

Ensure the following points are complied with:

- Only trained, instructed persons may operate the machines of the system.
- Signs must be installed that prohibit unauthorised persons from entering the area of the plant.
  It is recommended that the system premises are cordoned off.
- A wireless voice communication system must be made available to the operating personnel, as eye contact between employees cannot always be ensured.
  This voice communication system must be in good condition and suitable for use on an asphalt mixing plant.
  Installation must be performed by a qualified technician.
- If the system will be operated at night or in conditions with poor visibility, sufficient illumination must be ensured.
  Ammann supplies the system without lighting.
  Lighting can be ordered separately.
- The registration procedures for suppliers and customers must be specified in writing.
- Secure areas in which driver and passengers of vehicles may go must be defined.
  These persons must also be instructed regarding possible hazards in the plant.
  Define regulations for loading and unloading vehicles.

- All persons working in the area must be instructed on the location and function of emergency and safety equipment.
- The operating company is responsible for suitable access to temporary work areas, such as fixed platform ladders, scaffolds or lifts. In addition, the operating company is responsible for providing safety equipment for work where falls present a hazard.

3 Notes for operating personnel

- Wear and use the necessary protective and safety equipment.
  Read and observe the instructions in the Chapter "Safe working practices".
- Instruct the drivers of suppliers, customer and factory vehicles on the traffic rules on the premises.
- Only transport suspended loads when there is no one below them. Inform the personnel and, if necessary, any other persons, beforehand about the transport.
- Ensure that no unauthorised persons are on the premises.
- Ensure that visitors register with the operations manager, site manager or plant operator.
- Also ensure that visitors comply with all plant safety and health regulations.
- The plant operator must ensure that the visitors are informed of operational hazards.
- The plant operator must ensure that the plant's noise protection equipment is in the active position during plant operation.

ATTENTION!

Danger of injuries!

In case of danger, shut the plant down immediately!

⇨ In case of danger or emergency,
the plant operator must immediately shut down the entire plant using the "emergency-stop"!

⇨ This applies even if no emergency or disturbance is indicated on the control panel!

In case of an emergency, the plant operator must immediately go to the location reporting the emergency to perform or initiate appropriate first-aid measures.

4 Emergency command and safety equipment

4.1 General comments

Safety first!

In hazard situations, press the "emergency-stop" button!

NOTE

The operating company must ensure that the safety equipment of the entire plant has been inspected by specially trained technicians before commissioning.

The safety equipment of the of the supplied components or supplier parts comply with EN536.

The operating company must ensure that the safety equipment of the supplied components or supplier parts are made known to all persons working in the plant.

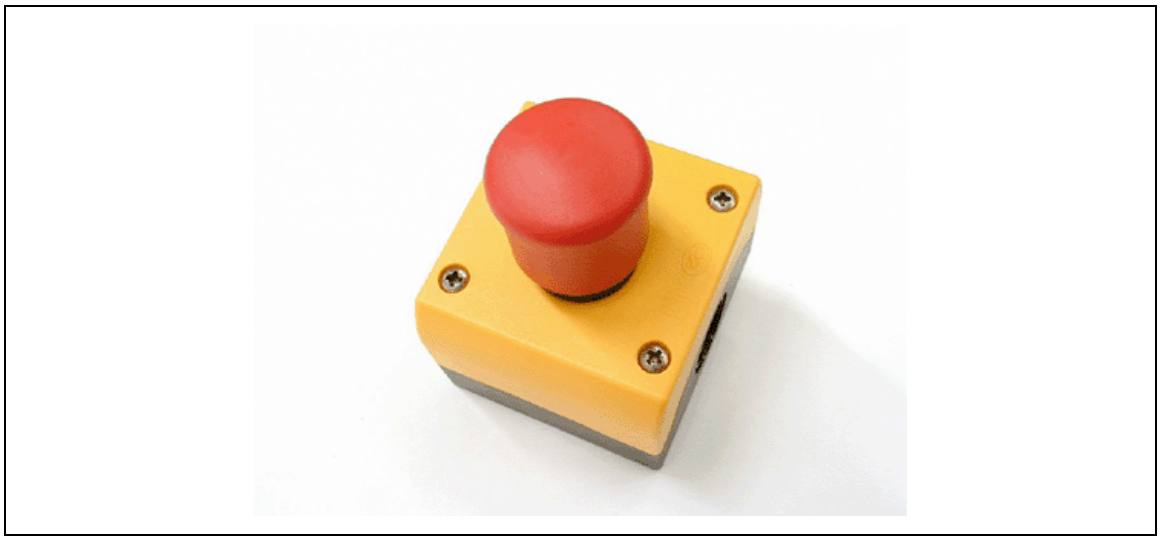
In particular, point out the following rules of conduct:

- In case of operating malfunction, the nearest "emergency-top" button or nearest safety cord must be actuated.
- Pay attention to your own safety at all times
- Perform suitable first aid measures
- Perform suitable countermeasures.
- Inform the supervisor.

4.2 Location of the safety equipment

The location and number of safety equipment devices varies depends on the configuration of the plant.

4.3 "Emergency-stop" button



"Emergency-stop" button

Actuating an emergency-stop button shuts down the entire plant, including all units, and separates it from the power supply. This also applies for plant parts that are secured by safety cords.

NOTE

The "emergency-stop" is superordinate to all other functions and actions!

ATTENTION!

Safety equipment!

Before putting the shut-down units back into operation, all actuated rope emergency-stop switches and "emergency-stop" buttons must be reset.

5 Process description

Safety first!

Actuate the nearest "emergency-stop" button or the nearest safety cord when a malfunction occurs during operation.

6 Starting operation each day

6.1 General comments

Safety first!

The operating personnel must inspect all safety equipment before starting work each day.

Malfunctions must be rectified before daily startup and the associated error messages must be acknowledged, in particular when the plant was shut down previously due to an error message.

Before startup, the operating personnel must remove all hardened material from all parts of the plant.
This applies in particular in case of a longer period of inactivity or frost.

Use an explosion-proof vacuum for removing dust.

Also observe the information on daily startup in the operating instructions of the suppliers.

The operating instructions of the respective manufacturers can be found in the component and supplier documentation in chapter 12 of the spare parts lists.

Safety first!

Actuate the nearest "emergency-stop" button or the nearest safety cord when a malfunction occurs during startup.

The plant operator must ensure that the following conditions are fulfilled before startup and during operation of the plant:

- No unauthorised persons may be in the plant hazard areas.
- No unsafe working methods may be used.
- The plant must be in a safe and functional state.
- All safety equipment must be present, properly mounted and functional.
  This includes loose covers, protective hoods, "emergency-stop" equipment, noise damping equipment and exhaust systems.

The operating personnel must ensure that before start the following conditions are fulfilled to ensure smooth startup and avoid endangering people:

- All inspection and maintenance work must be completed.
- All locks at inspection and maintenance flaps must be locked.
- All main switches must be on.
- Shut-down plant parts must be activated.

7 Special operation

7.1 Behaviour in case of operating faults

NOTE

The operating company must ensure that the safety equipment of the supplied components or supplier parts are made known to all persons working in the plant before startup.
Instruct personnel on the proper code of conduct in case of a malfunction!

The following points must be observed in case of a malfunction:

- Actuate the nearest "emergency-stop" button or the nearest safety cord.
- Keep yourself safe at all times.
- If necessary, take suitable first-aid measures.
- Perform suitable countermeasures.
- Turn off all pumps.
- Close all supply and outlet lines.
- Turn off the heating.
- Inform your supervisor.

7.2 Behaviour in case of fires

As responsible operating company, instruct your personnel regarding the following action that must be taken in case of a fire:

- Alert the fire department and provide information on the type of material that is burning.
- Keep yourself safe at all times.
- If necessary, take suitable first-aid measures.
- Fight the source of the fire with suitable extinguishing equipment.
- Turn off all pumps.
- Shut down the fuel supply
- Close all supply and outlet lines.
- Turn off the heating.
- Inform your supervisor.
- Brief the fire department and provide information on the burning material.

Do NOT extinguish with WATER!

Explosion hazard!
NEVER extinguish oil fires with WATER!

Inspection, maintenance, repairs and troubleshooting

1 Hazards during maintenance work

	Danger source	Hazard	Measure
 	Working the dryer drum Inspection of the scrapers and bearings of the feed belt	**Caution!** **Danger to life and limb!** For all inspection and maintenance work in the drum	Disconnect the loading, the burner and the fresh-aggregate dryer from the power supply and secure them from being switched back on according to the five safety rules (see chapter 7 „The 5 safety rules“, page 40)! Cut off the fuel supply to the burner. Have all work performed by trained specialists. Place a warning sign in a prominent location during maintenance work ! Before entering it, spray the drum for at least fifteen minutes and allow it to cool down to a reasonable temperature. Wear a dusk mask. Wear protective clothing. No smoking or open flame. Access with a suitable ladder. Install lighting. Post a watch person outside the drum.

	Danger source	Hazard	Measure
 	Work in and on the dryer drum Measure wall thickness	**Caution!** **Danger to life and limb!** For all inspection and maintenance work in the drum	Disconnect the loading, the burner and the fresh-aggregate dryer from the power supply and secure them from being switched back on according to the five safety rules (see chapter 7 „The 5 safety rules“, page 40)! Cut off the fuel supply to the burner. Have all work performed by trained specialists. Place a warning sign in a prominent location during maintenance work ! Before entering it, spray the drum for at least five minutes and allow it to cool down to a reasonable temperature. Wear a dusk mask. Wear protective clothing. No smoking or open flame. Access with a suitable ladder. Install lighting. Post a watch person outside the drum.

	Danger source	Hazard	Measure
 	Drum pipe, work outside Check bearing rings and rolls Check temperature sensors	**Caution!** **Injury and burn hazard!** Work outside the drum!	Disconnect the loading, the burner and the fresh-aggregate dryer from the power supply and secure them from being switched back on according to the five safety rules (see chapter 7 „The 5 safety rules“, page 40)! Place a warning sign in a prominent location during maintenance work ! Allow the drum to cool down to a reasonable temperature. Only climb up to foreseen workstations using a suitable stepladder. When working on the drum pipe, secure yourself from falling! Always wear fall protection equipment! Post a watch person outside the drum.

	Danger source	Hazard	Measure
	Feed belt Friction drive	**Caution!** **Danger of being pulled in!** Work on the feed belt or friction drive.	Disconnect the loading, the burner and the fresh-aggregate dryer from the power supply and secure them from being switched back on according to the five safety rules (see chapter 7 „The 5 safety rules“, page 40)!
	Mineral dust	**Caution!** **Danger of injuries!** Due to escaping mineral dust	Always wear personal protective equipment! Wear a respiratory mask! Wear protective goggles!

2 Inspection and maintenance openings

2.1 Hazards

	Danger source	Hazard	Measure
	Inspection and maintenance openings	**Caution!** **Burn hazard and danger of being buried!** Due to escaping material when opening inspection and maintenance flaps	Empty the plant before performing maintenance work. Do not stand directly before or under maintenance openings! Wear the PPE (see chapter „Personal protection equipment PPE“, page 18)
	Protection equipment	**Caution!** **Danger of injuries!** Due to removal of protection equipment!	Never remove protection equipment! The protection equipment serves to keep you safe and reduce the risk of injury!

	Danger source	Hazard	Measure
 	Moving system parts	**Caution!** **Danger of being crushed or pulled in!** **Caution!** **Danger of injuries!** At rotating or moving plant parts, such as the friction drive.	Only remove protection equipment, such as protective grates in inspection flaps and covers when absolutely necessary. Ensure that before opening inspection and maintenance openings and other safety equipment, the corresponding plant part and the connected plant parts have been shut down completely. Once work has been completed, re-attach the protection equipment immediately! Only operate the system with the associated safety equipment, such as protective grating in inspection flaps and covers! Never reach in between moving parts!

	Danger source	Hazard	Measure
	When switching the plant back on	**Caution!** **Danger to life!**	Before switching the plant and plant parts back on, ensure that no one is in or on this part!

After maintenance work, close all maintenance openings again before switching the plant back on!

NOTE

Re-attach the removable covers after maintenance work and screw any removed grating back on!

The plant may not be put into operation when these grates have not been screwed back on!

2.2 Inspection openings

These openings are necessary to inspect the machine or plant part.

Inspection openings are covered by movable flaps. To prevent accidental reaching or climbing in, there is an additional protective grate behind the flap.

Only remove the protective grate when absolutely necessary.

Put all protective grates back on after the inspection has been completed!

ATTENTION!

The machine or plant part must not be put into operation when these protective grates are not screwed on!

2.3 Maintenance openings

These openings are needed to perform maintenance work.

Maintenance openings are movable flaps with closing systems or removable covers. To prevent accidental reaching or climbing in, the opening can also be protected by a fixed protective grate.

Only remove the protective grate when absolutely necessary.

Put all protective grates back on after the maintenance has been completed!

The plant operator is responsible for ensuring that before opening the maintenance openings, the corresponding machine or plant part and the connected machines or plant parts have been shut down.

ATTENTION!

Before closing the maintenance openings, make sure that all persons have left the hazard zone, doors have been closed and all foreign materials (tools, etc.) have been removed.

ATTENTION!

The machine or plant must not be put back into operation if all maintenance openings have not yet been closed.

3 Inspection and maintenance intervals

NOTE

Observe all prescribed setting, maintenance and inspection activities, intervals and dates!
Also observe the instructions on replacing parts or subassemblies, and perform all maintenance and inspection activities resulting from the maintenance intervals!

Plant component

This column contains the inspection location and type

Cycle

This column contains the interval at which the inspection or maintenance must be performed.

Interval	Definition
1 day	Daily before starting work or at the end of the working day
1 week	At the beginning of the week
1 month	On first working day of the month
3 months	Every 3 months on a fixed date
6 months	Every 6 months on a fixed date
1 year	On a fixed date during the year
As needed	If a controller error is indicated or suspected during production
Other	According to the specified interval

The time specifications refer to the time of installation or last inspection/maintenance.

Staff

This column specifies the person who must perform the inspection or maintenance.

Symbol	To be carried out by
	Operating staff
	Maintenance staff
	Experts or personnel authorised by Ammann

Please also read and observe chapter „Explanation of terms“, page 19, in chapter „Introduction and explanation of symbols“, page 11.

4 Inspection, maintenance and repairs

4.1 Dryer inspections

NOTE

Please refer to the burner operating instructions for information concerning burner inspection!

NOTE

For the inspection of the fuel supply, observe the operating instructions of the corresponding supply!

Plant component	Interval	Staff
· Inspect electrical connecting components	1 day	
· Inspect threaded connections	1 day	
· Check transfer points	1 day	
· Check the drum pipe	1 month	
· Check the low-pressure sensor	1 month	
· Check temperature sensors	1 month	
· Check bearing rings and rolls	6 months	
· Check the shovel equipment	6 months	
· Measures the wall thickness of the drum shell	1 year	
· Check motors	1 year	
· Check all bearings	1 year	
· Check plant controller and electrical components	1 year as needed	

Inspect electrical connecting components

- ✓ Check the electrical connections.
  - ⇨ Secure lines and connectors that have worked themselves loose.
  - ⇨ Always replace defective connectors with connectors with identical specifications.
  - ⇨ When replacing connectors, check any markings or codings.
- ✓ Look for damaged areas of insulation.
- ✓ Look for kinks in lines.
  - ⇨ Replace defective cables immediately with appropriate intact cables.

Inspect threaded connections

- ✓ Check for damaged screws.
  - ⇨ Replace defective screws immediately with appropriate intact screws.
- ✓ Re-tighten loose bolts.
  - ⇨ The tightening torques for the screws can be found in chapter 11 „Tightening torques“, page 50.

Check transfer points

- ✓ Check the transfer points for build-up and material jams.
  - ⇨ Remove any build-up.
  - ⇨ Remove fixed or jammed material.
- ✓ Check the wear parts of the transfer points for wear, corrosion and damage.
  - ⇨ Repair all damage.
  - ⇨ Replace wear parts, such as rubber mats and wear plates, that are irreparably damaged or too worn.

Check compressed-air supply and pneumatics

- ✓ Check the components (e.g. hoses, pipes, fittings) for damage and leaks.
  - ⇨ Check for escaping air (draft or whistle sound).
  - ⇨ Replace defective components (e.g. hoses, pipes, fittings) with respective intact components.
- ✓ Drain condensation from the maintenance units and the foreseen valves.
- ✓ Check whether the pressure corresponds with the specifications.

Check motors

- ✓ Check the function of all motors.
- ✓ Check whether the speed of the motors corresponds with the specifications.
- ✓ Check the position of electrical connections and components and check for damage and corrosion.
  - ⇨ Correct the position of connections and components as necessary.
  - ⇨ Repair damaged components.
  - ⇨ Replace damage connections with respective intact connections.
  - ⇨ Replace irreparable components with respective intact components.
  - ⇨ Replace the electrical connections and components that show signs of corrosion immediately with respective intact connections and components.
- ✓ Check for war on components.
- ✓ Check the housing for wear and damage.
  - ⇨ Replace defective parts with respective intact parts.
- ✓ Check the lubrication of motors and gears.
  - ⇨ Relubricate as needed.
- ✓ Compare the power consumption of the motors with the specified values (⇨ nameplate).

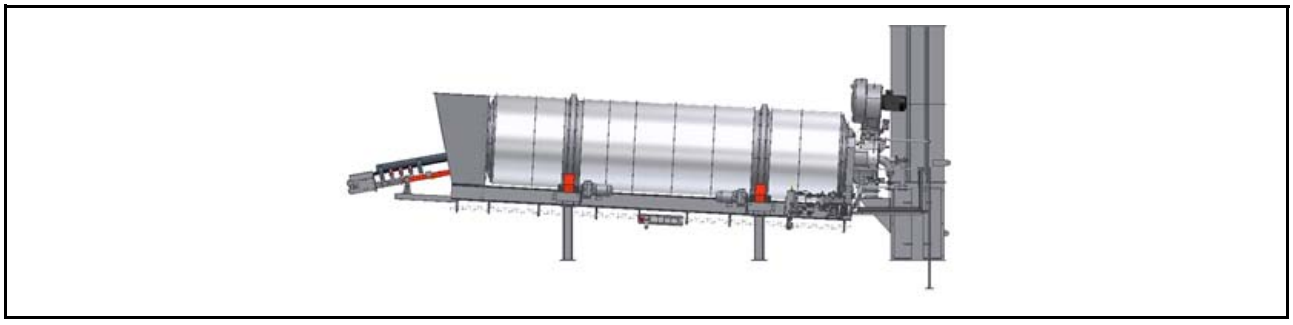
Check all bearings

- ✓ Check all bearings for wear and check the lubrication and function of the bearings.
  - ⇨ Pay attention to unusual noise during operation.
- ✓ Check the bearing temperatures and vibration of the bearings.
- ✓ Check the bearings for play.
- ✓ Check whether the bearings still rotate freely.
  - ⇨ Regrease bearings that do not move easily.
- ✓ Check the bearings for concentricity and balance.
  - ⇨ Repair bearing elements that could cause imbalance.
  - ⇨ If there is an imbalance or irreparable damage to bearing elements, replace them with respective intact bearing elements.
  - ⇨ Replace irreparable bearings completely with respective intact bearings.
- ✓ Remove the bearing and check it for damage and wear.
  - ⇨ Replace defective bearings immediately with appropriate intact bearings.

Check plant controller and electrical components

- ✓ Check the various settings of the controller, in particular the settings that are used infrequently.
- ✓ Check the electrical components of the plant.
  - ⇨ For electrical components with test function, this function is described in the corresponding operating instructions.
- ✓ For malfunctions of the plant controller or electrical components:
  - ⇨ Inform Ammann or another contractually stipulated company of malfunctions.
  - ⇨ Information on troubleshooting in the controls can be found in the instructions for the plant controls.

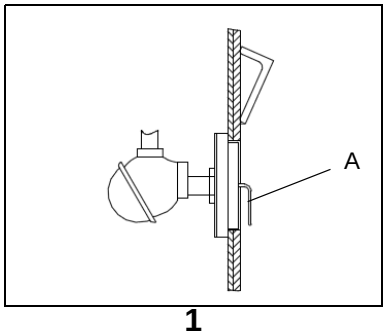
Only rectify the malfunctions when you are trained to do so or you have been instructed by a suitable specialist.



4.2 Checking measurement equipment

4.2.1 Check temperature sensors

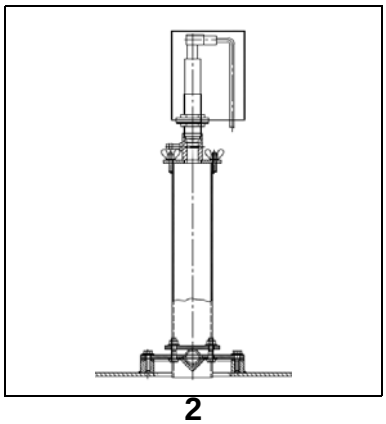
- Check whether the measurement wire **(A)** is present and not damaged.
- Remove any dirt from the area of the sensor.
- Check the connection cable for damage.



1

4.2.2 Check infrared sensors

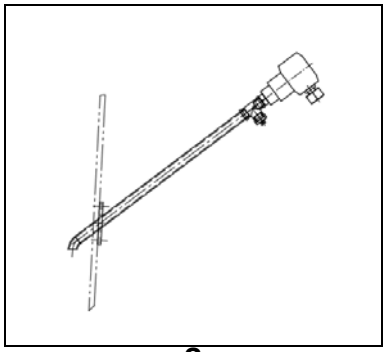
- Remove dirt from the area of the sensor and its holder.
- Check the connection cable for damage.



2

4.2.3 Check low-pressure sensors

- Remove dirt from the area of the sensor and its holder.
- Check the connection cable for damage.



3

4.3 Check bearing rings and rolls

To check the bearing rings and rolls, see chapter 3.3.1 „Aligning bearing rings and rollers at a standstill“, page 78.

4.3.1 Alignment of the drum movement

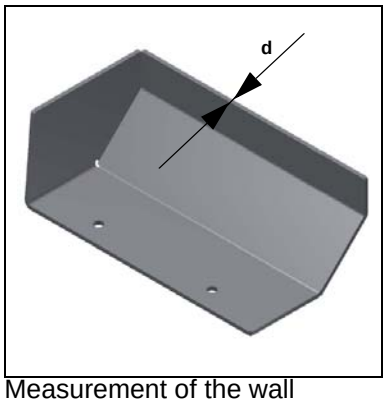
For alignment of the drum movement, see chapter 3.3.2 „Alignment of the drum barrel“, page 79.

4.4 Check shovel equipment

Check the shovel equipment when operation is stopped and at least every 6 months.

- Check the shovel equipment visually for wear and missing screws.
- Measure the wall thickness **(d)** of the shovels with a calliper and record the results, with the date of the measurement, in a table.

Shovel equipment



Measurement of the wall thickness

4.5 Check the wall thickness

Check the wall thickness of the drum when operation is stopped and at least once a year.

- Check the drum visually for wear, corrosion and missing screws.
- Measure the wall thickness of the drum pipe with an ultrasound device and record the results, with the date of the measurement, in a table.

5 Troubleshooting

5.1 General comments

NOTE

Also read and observe the operating instructions of the corresponding manufacturers of individual components and supplied parts regarding troubleshooting!

The operating instructions of the respective manufacturers can be found in the component and supplier documentation in chapter 12 of the spare parts lists.

NOTE

In particular, read and observe the instructions on reporting errors in the operating instructions of the controller!

6 Action to take during the winter months

6.1 Operating the dryer in winter

NOTE

Low temperatures, especially below freezing point, may impair the operation of the plant.

Before shutting down or longer periods of inactivity, the machine ***must*** be emptied to prevent damage and make it easier to start operations back up later.

To do so, run the machine without adding material until there is no more aggregate in the drum.

- Only use lubricant that is suitable for the corresponding temperatures.
- Shorten the lubrication intervals if necessary.

NOTE

In addition, read and observe the instructions on operation at low temperatures in the operating instructions of the respective manufacturers of the individual components and supplier parts!

The operating instructions of the respective manufacturers can be found in the component and supplier documentation in chapter 12 of the spare parts lists.

6.2 Recommissioning after shutting down in winter

If the plant has been out of operation for a short or longer period of time, in addition to the instructions provided in chapter 2 „Temporary decommissioning“, page 141, perform the following:

- Check all plant parts for damage and carry out any necessary repairs.
- Lubricate all plant parts in accordance with the lubrication instructions.

7 Ordering spare parts

The spare parts lists can be found in the respective folders

The operating instructions of the respective manufacturers can be found in the component and supplier documentation in the corresponding chapters of the documentation.

You can order spare parts with Ammann by phone, mail, fax or e-mail.

Also visit our website at www.ammann-group.com

7.1 Ordering addresses for spare parts

Switzerland

Ammann Asphalt AG
Eisenbahnstrasse 25
CH-4901 Langenthal

Phone:	+41 62 916 6161
Fax:	+41 62 916 6677
E-mail:	info@ammann-group.ch

Germany

Ammann Asphalt GmbH
Hannoversche Strasse 7-9
D-31061 Alfeld

Phone:	+49 5181 76 261
Fax:	+49 5181 76 242
E-mail:	ammann@ammann.de

Benelux

Ammann Benelux BV
P.O. Box 64
NL-6000 AB Weert
Phone: +31 495 453 111
Fax: +31 495 453 222
E-mail: ammann.abx@hetnet.nl

China

Ammann Construction Machinery Shanghai Co. Ltd.
No.1609, Hui Bin Road
Qingpu Industrial Zone
201700 Shanghai
Phone: +86 21 5986 8811
Fax: +86 21 5986 8800
E-mail: t.kopic@ammann.com.cn

France

Ammann France SA
Z.I. petites haies
31-33 Rue de Valenton
FR-94046 Créteil Cedex
Phone: +33 1 45 17 08 88
Fax: +33 1 45 17 08 90
E-mail: contact@ammann.fr

Italy

Ammann Italy S.p.A.
Via dell´Industria, 1
It-37012 Bussolengo (VR)

Phone:	+39 045 676 4911
Fax:	+39 045 670 1192
E-mail:	spareparts.AIT@ammann-group.com

Austria

Ammann Austria GmbH
Neuhaus 9
A-4114 Neuhaus

Phone:	+43 7232 29 9 44 0
Fax:	+43 7232 29 9 44 24
E-mail:	aea@ammann-group.com

Poland

Ammann Polska Sp.z.o.o.
ul. Jutrzenki 84
PL-02-230 Warszawa

Phone:	+48 22 33 77 900
Fax:	+48 22 33 77 929
E-mail:	ammann@ammann.com.pl

Russia

Ammann Russland o.o.o.
Ul. Urzhumskaja 4
RU-129343 Moskau

Phone:	+7 495 933 35 61
Fax:	+7 495 933 35 67
E-mail:	info@ammann-russia.ru

Sweden

Stig Machine AB
Tegelbruksvägen 1
SE-74630 Bälsta

Phone:	+46 171 544 00
Fax:	+46 171 541 50
E-mail:	info@stigmachine.se

Czech Republic

Ammann Asphalt GmbH
Príkop 6
CZ-60200 Brno

Phone:	+420 545175940
Fax:	+420 545175941
E-Mail	kucera@ammanncz.cz

Lubrication instructions

1 General comments

NOTE

Old lubricants and cleaning products must never be disposed of in the environment, mixed with other types of waste or incinerated in plants which are not approved for this purpose.

NOTE

Regarding the lubrication instructions of the drives and other components, also read the operating instructions of the respective manufacturer.

The operating instructions of the respective manufacturers can be found in the component and supplier documentation in the corresponding chapters of the documentation.

Observe lubrication intervals to ensure smooth machine function.

These lubrication instructions apply only for plant parts and machines supplied by Ammann.

Therefore, you must also read and observe the lubrication instructions of third-party components and parts.

For third-part machine parts, the corresponding manufacturer or supplier is responsible for providing lubrication instructions.

The lubrications instructions may not be copied. Changing the specifications is not permitted. If the lubrication instructions are modified by the operating company or third parties, Ammann assumes no liability for defects regarding lubrication!

Ammann is not liable for any damage resulting from non-compliance with the lubrication instructions.

2 Using these lubrication instructions

The lubrication instructions consists of individual lubrication sheets for the corresponding components and a lubricant quality overview.

Every lubrication point is marked with a combination of a number and a letter. This provides information regarding the lubricant and the interval.

Example:

Numbers 1 - 6: Lubrication interval
5 = 2000 hours

⇨Page 132

Letters A - X: lubricant to be used
B = ball bearing grease

⇨Page 133

In this example, the part must be lubricated every 2000 hours with ball-bearing grease.

3 Lubrication intervals

	Interval / operating hours
	Special instructions Read and observe the specifications on lubrication points with this marking in the operating instructions of the corresponding manufacturer.
	**8**
	**40**
	**200**
	**2000**
	**10000**

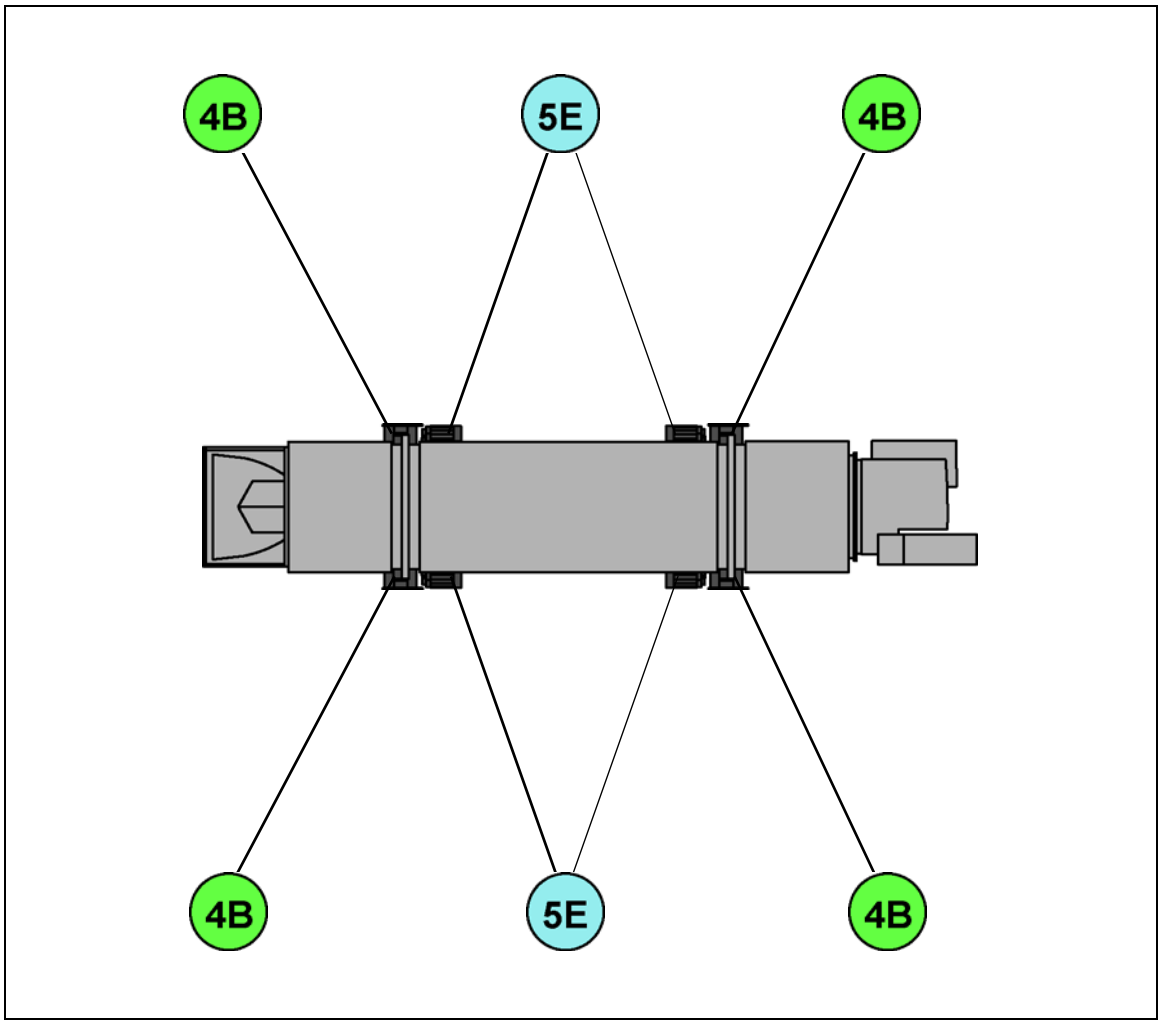
4 Lubricants

A	High-temperature grease up to 180 °C		BENTONIT NLGI 3
B	Ball-bearing grease -25 °C to +120 °C		LITHIUM NLGI 2
C	Fluid gear grease -20 °C to +80 °C		NLGI 00
D	High-pressure grease for open gears		
E	Industrial gear oil	VG 100 VG 150 VG 220 VG 320 VG 460	C-LP / CLPHC DIN 51502 / DIN 51517-3 FZG Test >12 DIN 51354
F	Hydraulic oil	VG 32	H-LP DIN 51524-2 with increased VI
G	Hydraulic oil	VG 10	H-LP DIN 51424-2
X	Special instructions Read and observe the specifications on lubrication points with this marking in the operating instructions of the corresponding manufacturer.		

Grease	A	B	C	D
DIN 51502	**KP2R-20**	**KP2K-20**	**GP00E-20**	**OGP2P-20 Spray**
Blaser. SWISSLUBE	Blasolube 304	Blasolube 472	Blasolube 371	Zahnradspray 659
bp	Energrease HTG 2	Energrease LS-EP2	Energrease LS-EP00	Energol GR3000-2
Castrol	Firetemp XT2	Spheerol EPL2, Olista Longtime2	Longtime PD 00	Molub-Alloy 936 SF Heavy
FUCHS LUBRITECH	Urethyn MP2	Lagermeister EP2	Gearmaster LI400	Ceplattyn 300 Spray
KLÜBER	Petamo GHY 133 N Stabutherm GH 462	Centoplex 2 EP	Klüberplex GE 11-680	Grafloscon CA-901 ULTRA-Spray
Mobil		Mobilux EP 2	Mobilux EP 004	
MOTOREX	Motorex grease 182	Motorex grease 3000	Motorex grease 174	Motorex 1219
OMV		Signum EPL 2	Signum EPX 00	ZMO Spray
	Gadus S3 T220/2	Gadus S2 V220/2	Gadus S2 V220/2	
STRUB SCHMIERTECHNIK	Multi Duty EP 2	1900 EP 2	1740 EP	Zahnrad-lubrikose
TOTAL	Caloris 23	Multis EP2	Copal EP 00	Copal Spray

Oil	E	F	G
Viscosity	**ISO VG 68...680**	**ISO VG 32**	**ISO VG 10**
DIN 51502	**CLP 100-460**	**HVLP 32**	**HLDP 10**
Blaser. SWISSLUBE	Hydr. and ind. oil type. 100 Industrial -gear oil 150 to 460	Hydr. oil HVLP 32 type. 147	Hydr. and Ind. oil 10 type. 154
bp	Energol GR-XP Range	Bartan HV 32 Energol SHF-HV 32	Energol HLP-D10
Castrol	Alpha SP Range Optigear BM Range Tribol 1100 Range	Hyspin AWH-M 32	Hyspin DSP 10
FUCHS LUBRITECH	Gearmaster series	Renolin B 32 HVI	Renolin B 3
KLÜBER	Klüberoil GEM 1-...N	Klüberfood 4 NH1-32	Airpress 15
Mobil	Mobilgear 600 XP series	Mobil DTE 10 Excel 32 Univis N 32	Mobil DTE 21
MOTOREX	Gear Compound Plus	Corex HV 32	Corex HLP-D 10
OMV	Gear HST	HYD HLP-M 32	
	Omala S2 G	Tellus S2 V 32	Tellus S2 MA 10
STRUB SCHMIERTECHNIK	Vulcogear EP	Vulcolube EP VI 32	Vulcolube HLP 10
TOTAL	Carter EP Carter XEP	Equivis 32	Azolla DZF 10

5 Lubrication instructions for drum drives



NOTE

Regarding the lubrication instructions of the drives and other components, also read the operating instructions of the respective manufacturer.

The operating instructions of the respective manufacturers can be found in the component and supplier documentation in chapter 12 of the spare parts lists.

Position in the flow chart	02.001

Decommissioning and disassembly

1 Hazards during disassembly

1.1 Fresh aggregate dryer

	Danger source	Hazard	Measure
	Transport of components by crane	**Caution!** **SUSPENDED LOAD!**	Do not stand under suspended loads! Wear the PPE (see chapter „Personal protection equipment PPE“, page 18)
	Unscrew machine from support frame Disassemble support frame	**Caution!** **DANGER OF BEING CRUSHED!** Crushing of parts of the body between components that are being dismantled.	During disassembly do not take hold of the points at which the components are being disassembled, unless this is essential for disassembly. Do not stand between fixed components and components that are being moved. Use extreme caution when performing disassembly!

	Danger source	Hazard	Measure
 	Plant parts are significant height (> 0.5m) Disassembly of the burner Dismantle machine from support frame Dismantle raw gas channel	**Caution!** **Tripping hazard!** **Caution!** **Danger of falling!**	When working on plant parts that are not provided with fixed access ways, use secure steps and safety equipment (tackle/safety harness). We recommend using installation lifts or work platforms. When working in the lower area, platform ladders with a fixed work surface can also be used. Permanent means of access must be provided with railings or support rails and baseboards. Always protect yourself from falling! Particular caution must be used when working at great height and exposed to the wind!

	Danger source	Hazard	Measure
	Electrical devices and connections	**Caution! ELECTRICAL HAZARD!** (electric shocks and burns)	Do not take hold of electrical connections. Regularly check electrical components, such as cables, overload protection, earthing and insulation. Ensure that electrical connections have been dismantled according to regulations and as intended. Only carry out work on parts of the plant which have been de-energized in accordance with the 5 safety regulations (chapter „The 5 safety rules“, page 40)!

2 Temporary decommissioning

2.1 General comments

Decommissioning the system for a longer period of time and then putting it back into operation is defined as temporary decommissioning.

Temporary decommissioning may be necessary when extensive maintenance and repair work must be performed or the system should not be operated in the winter.

Close and secure all doors and inspection and maintenance and inspection openings of the system.

Secure the keys to all keys and ensure they are not accessible for unauthorised persons.

The system must be emptied before it can be put out of operation for a longer period of time.

2.2 Measures

As the system operator, you are responsible for ensuring that all main switches are turned off and the key switches are removed.
The safety keys must be stored securely, ensuring that it is not possible for an unauthorised person to switch the system on.

Turn off the compressed air supply and completely depressurise the lines. This also applies for the compressed-air accumulator.

DANGER!

Danger of injuries!
There still exists a risk of injury when the system has been put out of operation!
⇨ The operating company is responsible for ensuring that no unauthorised persons gain access to the system!

2.3 Inspections

The following inspections must be performed on systems that are temporarily decommissioned:

- Inspect entire system
  Inspect the entire system for damage and repair any damage immediately.
- Inspect lubrication points
  Re-lubricate as needed. Read and observe the instructions in the Chapter "Lubrication instructions".

These inspections should be performed at intervals of 3-4 weeks.
In areas with a high average temperature or frequent frost, the inspection interval must be modified as appropriate.

2.4 Preventative measures against damage when inactive

ATTENTION!

Avoid bearing damage

When the dryer will be inactive for a longer period of time, ensure that the drum is rotated from time to time to prevent bearing damage.

The drum can also be rotated manually.

3 Decommissioning the machine

3.1 General comments

If the machine is to be disassembled, the upstream and downstream system parts must first be shut down.

NOTE

Descommissioning the plant may only be performed by Ammann personnel or qualified and trained specialists.

If this stipulation is not observed, Ammann is not liable for any resulting damage!

Close and secure all doors and inspection and maintenance and inspection openings of the system.

Secure the keys to all keys and ensure they are not accessible for unauthorised persons.

The system must be emptied before it can be decommissioned completely.

4 Preparations for disassembly

4.1 Inspections before disassembly

Check whether the system has been completely emptied.
If there is residual material still in the dryer drum or the supply and output parts, this can lead to serious injury.

Before beginning disassembly, check that the controller and all components have been de-energised according to the 5 safety rules and also secured against unintentionally being switched back on.

Ensure that all safety equipment needed for transport is available.
Use the transport safety equipment that is intended for the corresponding component.

4.2 Energy and operating media supply

The necessary electrical connections must still be available for disassembly work. Required connections include.:

- Electrical connection
- Pneumatic connection

Only used intended plugs or couplings.

Make sure that the connections fit properly.

5 Disassembly

5.1 General comments

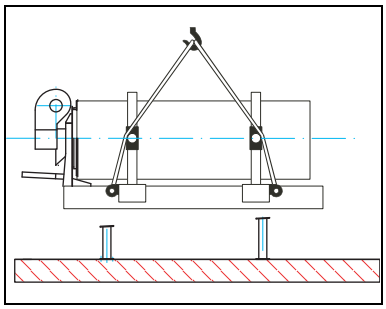
A significant proportion of the components have been delivered pre-assembled. If the system will be installed at a new location, it makes sense to disassemble these components up to this pre-assembled condition.
If the system is to be completely decommissioned and disposed of, complete disassembly should be performed.

During disassembly, it is important that the specified order of operations is observed.
Mount the disassembly or transport safety equipment as specified for the corresponding component.

Access paths (stairs, platforms, ladders) are disassembled together with the corresponding components.
Disassemble all access options for a component, including railings and other safety equipment, before you disassemble the next component.

Energy and operating material connections (electrical energy, compressed air, fuel, water) that is connected to supply the system must be disconnected before these lines are removed.
The only supply lines that are maintained are those for tools and disassembly aids.

5.2 Dryer disassembly



1 Disconnect all supply lines.

2 Secure the dryer to the crane according to chapter „Suspension eyes and lifting tackle“, page 63. Use suitable equipment.

3 Slacken the fixing bolts.

4 Deposit the dryer at a location that you have previously prepared.

5 If the dryer is not to be used further, dismantle the dryer and dispose of the individual parts properly.

☑**The dryer has been disassembled**

If the dryer is to be used again, load it using a suitable transport vehicle. Pay attention to the permissible transport weight.

Disposal of waste

If the plant is to be decommissioned, all parts, particularly operating and auxiliary supplies, must be disposed of safely and without damage to the environment.
In addition, all waste created during operation must be disposed of safely and without damage to the environment.

The contens of the following materials pose no risk to the environment and can be reused:

- Aggregate
- Primer
- Rock wool (insulation)

The following list contains materials frequently used at the plant and notes on their disposal:

- The plant consists mainly of steel.
  - Steel can be scrapped after dismantling.
- The electronics in the plant must be disposed of in accordance with national or regional regulations.
  - Electrica lines can go in cable waste.
- Cleaning cloths soaked in contaminants contain residue from mineral oil and other environmentally hazardous substances.
  - Dispose of soaked cleaning cloths correctly in accordance with local regulations.
- Oils and greases are classed as special waste and must be disposed of by specialist firms in accordance with local rules and regulations.
- Conveyor belts and V-belts are made of rubber.
  - Dispose of belts and V-belts in accordance with local regulations.

- Used operating and auxiliary supplues must be disposed of in accordance with national or local environmental regulations.
- Condensate from the compressor must not be emptied into the environment.
  - Collect the condensate that occurs during the compression process in a collecting tank and dispose of in accordance with national or local environmental regulations.
- Containers at the plant may contain left over operating supplies.
  - These can be reused or recycled.

Annexe

1 Supplier documents

Read and observe the operating instructions from the manufacturers of components and supplied parts, in particular the instructions on operation and maintenance.

The component and supplier documents can be found in Chapter 12 of the spare parts list.