

1 NOTES RELATING TO THESE INSTRUCTIONS

1.1 General information

These operating instructions provide essential information for the successful and safe assembly of the DMK-Connectors. Compliance with these instructions will help to prevent risks, reduce repair costs and equipment downtimes and increase the reliability and operating life of the DMK-Connectors.

The assembly instructions should be kept available in the vicinity of the installation at all times and must be read and followed by all personnel charged with working on or with the DMK-Connectors.

The given safety information and instructions, and the general safety provisions and accident prevention regulations applicable at the place of use, are to be followed at all times.

Before any work is carried out on the DMK-Connectors it is essential to read in full the conveyor operating instructions together with these operating instructions, and especially the section headed 'Safety notes', along with the relevant safety information. All this must be read and fully understood.


1.2 Applicable documents

These operating instructions can only be fully effective provided all other relevant documents are also taken into consideration. This particularly includes the conveyor operating instructions and those documents that have been supplied by other manufacturers.

1.3 Explanation of symbols

These operating instructions contain important safety information in the form of safety symbols.

These assembly instructions contain important safety information in the form of safety symbols.

	<p>Description of hazards!</p> <p>Remedial action</p>
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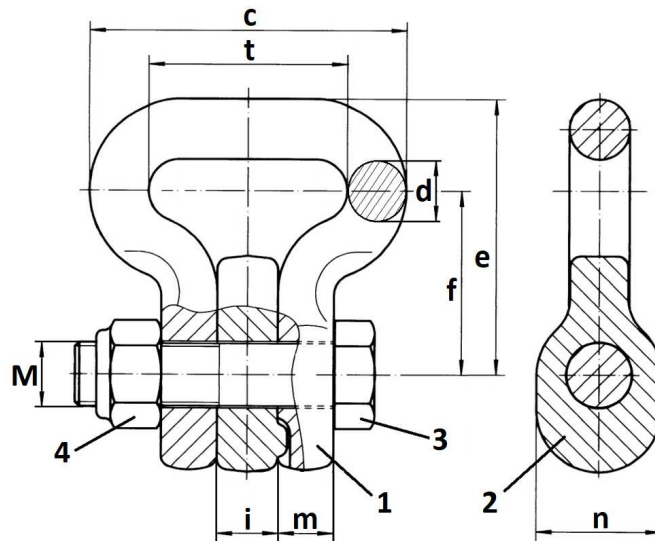
2 PRODUCT DESCRIPTION

DMK-Connectors serve to connect two chain strands built in the middle of a double strand mining conveying system. DMK-Connectors consist of a forged base body (1), a forged spacer (2), a hexagon screw (3) and a related hexagon lock nut (4).

The right positioning of the spacer is ensured by an extension spool on the spacer and a related recess on the base body.

DMK-Connector shall only be used in horizontally orientation to ensure a safety engagement to the sprockets.

3 TECHNICAL DATA



d x t [mm]	Article- no.	d [mm]	t [mm]	c [mm]	e [mm]	f [mm]	i [mm]	m [mm]	n [mm]	Thread [mm]	MA ¹⁾ [Nm]	Operating force max [kN]	Mass [kg]
22x86	F25211	23,5	86	132	117	78	25	24	52	M24	850	380	3,3
26x92	F25341	28	92	146	128,5	85	28	26	58	M30	1 700	531	4,4
30x108	F25401	31,5	108	172	147	98	32	31,5	65	M36	3 000	707	6,4
34x125	F25421	36	126	198	163	110	35	36,5	70	M36	3 000	907	8,0

1) MA = Screw tightening torque

Operating temperature range: -20 to +80 °C

4 GENERAL SAFETY NOTES

4.1 Proper use

DMK-Connectors in question are intended for use in a mining conveyor.

The conveyed material in general is coal and stone, may other bulk material.

The instructions for the conveyor system in which the DMK locks are installed must be observed.

The conveyor must not be used for transporting persons.

DMK-Connectors must only be operated:

- when they have been properly assembled by persons with the technical expertise required for working with chain conveyors of this type,
- in compliance with all the safety information contained in the attached documents,
- within the permitted temperature limits,
- by properly trained and authorised persons,
- after the entire conveyor system has been duly approved for service by the manufacturers.

4.2 Reasonably foreseeable misuse

DMK-Connectors must not be used or operated:

- outside its permitted operating force (overload),
- outside the permitted temperature limits,
- for transporting persons or materials other than those specified,
- by persons under the influence of drugs or alcohol.

4.3 Requirements for personnel

- Operators, fitters and maintenance personnel must at all times observe the assembly and operating instructions and the specific rules and regulations applying in the user's country.
- Personal protective equipment is to be worn by those carrying out work of any kind on or with the DMK-Connectors.
- Assembly and dismantling work as well as conveyor operation, testing and maintenance are only to be performed by qualified and authorised persons.
- Contact your safety officer or the manufacturers if you have any queries relating to the operation, testing, maintenance etc. of the conveyor.
- Persons engaged in working with or on the conveyor are strictly forbidden from using or being under the influence of drugs or alcohol!

4.4 Operator's obligations

- The information contained in these instructions and in the listed documents relating to machine safety, component assembly, operation, testing and maintenance is to be kept in the vicinity of the product where it can be seen by the personnel concerned.
- Keep operating personnel informed of the danger zones.
- Ensure that safety distances are maintained.
- Keep the working area well lit at all times.
- Switch off the control system and the entire energy supply and secure against unintentional restart before commencing any work on the conveyor.
- Erect warning signs informing personnel that maintenance work is under way. All safety devices must be made fully functional again before the installation is restarted.
- All packaging and transport aids are to be disposed off in an environment-friendly way in accordance with local regulations.
- Always observe the specific regulations issued by local authorities.

5 COMPONENTS AND DOCUMENTS

5.1 Checking the delivery status



Risk of injury from defective components!

Do not use damaged components.

Replace damaged components with new parts.

- Verify that the components match the order and are undamaged.
- Damaged components should be replaced immediately.

5.2 Checking documents

Proper assembly and operation are only possible when the required documents have been made available and read through.

- Verify that the necessary test certificates and assembly instructions are present.
- Carefully read through the documents before attempting to assemble or operate the conveyor.
- In case of queries please contact your safety officer or the manufacturers!

5.3 Information on the storage of documentation

- Information contained in these instructions and in the attached documents that relates to safety, conveyor assembly, operation, testing and maintenance is to be kept available in the vicinity of the installation where it can be seen by the relevant personnel.
- Ensure that the documentation is kept in a proper and safe place.

6 STORAGE

If the DMK-Connectors are not to be used immediately after delivery they should be stored in a dry and enclosed room at an ambient temperature of 0 to +40 °C.

7 ASSEMBLY

7.1 Safety notes



Risk of injury!

Make sure that no twisting is allowed to develop in any of the chain strands!

7.2 Disassembly

1. Slacken off the DMK-Connector.
2. Removing of nut and screw.
3. Removing of spacer.

The ends links of the two chain strands to be connected can now be placed into the base body of the DMK-Connector.

7.3 Assembly

1. Insert the end links of the two chain strands to be connected into the base body.
Take care for a horizontal orientation for operation.
2. Fitting of the spacer in the correct position. The spacer has an extension spool and the base body a related recess, which have to be aligned.
 1. Assembling of screw right through the holes of base body and spacer.
Take care that the screw head show into conveying direction.
 2. Fastening of the nut with the shown fastening screw torque.
 3. Checking of the tightening torque 2 days after assembling.


ATTENTION!

When using chain pocket wheels the chain connectors must only be inserted horizontally and with the latches facing outwards.

When using chain starwheels the DMK-Connectors shall also be fitted horizontally.

8 START-UP

8.1 Safety notes

	<p>Risk of injury from incorrect start-up!</p> <p>Persons must not be in the danger zone of the moving parts during operation.</p> <p>Clear tools, aids etc. out of the conveyor after assembly.</p> <p>Make sure that the maximum drive force in the event of starting against the blocked conveyor does not exceed the test force or double the test force in the case of double strands.</p> <p>Avoid hard blockages at all costs. Slow-down times approaching zero always lead to oversteering of chains and locks and even to breakage</p>
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- During the first start-up check the interaction between the various components over the entire installation. To this effect conduct a test run with an unloaded conveyor (for at least one hour).
- It is essential to check the chain pre-tension after the test run has been completed.


8.2 Test run

Now carry out a six-hour test run with the conveyor laden with material and follow the instructions given:

- Gradually increase the load on the conveyor.
- Observe how the chain rolls off the sprockets.
- Keep a constant watch on chain slack development.
- Check the tension along the chain.
- Tighten up the chain if necessary.
- After the test run has been completed, and the conveyor run to empty, inspect the installation for signs of damage.
- If no defects or malfunctions have been found the conveyor can be released for service.

9 OPERATION

9.1 Safety notes

	<p>Risk of injury from incorrect operation!</p> <p>Keep out of the danger area and away from all moving parts when the installation is in operation.</p> <p>Do not overload the conveyor.</p> <p>Ensure that safety distances are maintained.</p> <p>Explain the importance of danger areas to all personnel.</p>
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- Perform a visual check of the installation before each period of use.
- Check the chain tension regularly and if necessary correct it.
- Check the chain tension daily during the first few days after commissioning
- Safety devices must not be tampered with.
- Never operate the conveyor without its safety devices fitted.

10 SERVICE

10.1 Daily service

- Examine the DMK-Connectors for signs of damage.
- Check that the chains are able to move freely.
- Examine the sprockets for signs of damage.

10.2 Quarterly service

- Measure the DMK-Connectors and chains for stretch.
- Check that the chain sprockets are all fitted securely.

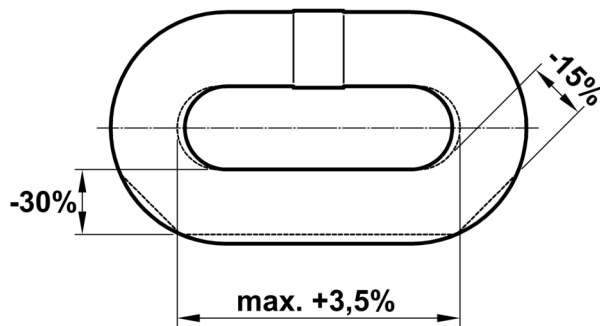
11 MAINTENANCE

11.1 General

- Maintenance work must only be carried out by suitably trained and authorised personnel.
- Only use original spare parts.
- Ensure that the conveyor is as free as possible of material before commencing maintenance work.
- Remove the tension from the chain strands if the maintenance involves working on the chains or DMK-Connectors.
- After completing the maintenance work ensure that when the chain strands are being re-tensioned the chain links and/or DMK-Connectors are tight against the flanks of the return sprockets and are fully captive in the drive sprockets.
- Chains should always be replaced as complete sections; never attempt to repair individual links.
- Small nicks and cracks on the chain links can be carefully ground away, though note that the maximum permitted cross-section reduction is 10% and that no notches or indents must remain.
- Record all maintenance work carried out.
- Worn-out steel components are to be recycled as scrap in accordance with local regulations.

11.2 Wear criteria

Typical wear criteria are described below, as they also exist on chain links.



Wear criteria are:

- Pitch elongation of more than 3.5 % (from new)
- abrasion wear to the legs of more than 30 % (in relation to the smallest diameter)
- „Ducktails“ greater than 15 % (in relation to the smallest diameter)

12 THIELE OPERATING AND MOUNTING INSTRUCTIONS

Current operating and installation instructions are available as a PDF download on the homepage.



13 IMPRINT

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