HIGH TORQUE ROTARY UNIT
ST

ASSEMBLY AND INSTRUCTIONS MANUAL

High Torque Rotary Units ST0055 - ST0075 - ST0140

Mechanical system documentation

980-209018000 / EN 04-2014

Document: Assembly and instruction manual

Document version: Mechanical system documentation

Valid for: High Torque Rotary Unit

Type: ST0055 - ST0140

Revision R04-2014

Revisions			
Date	Revision	Chapter	Reason
15.10.2010	R10 - 2010	All	Created
15.07.2011	R07 - 2011	2, 4, 5, 6, 7, 10	Supplement
15.04.2014	R04 -2014	3	Supplement

This document has been prepared by

WEISS GmbH, Siemensstrasse 17, D-74722 Buchen

Service

Tel: +49 6281 52080

service@weiss-gmbh.de

www.weiss-gmbh.de

Table of contents

1 Introduction

1.1 Definition

The High Torque Rotary Units ST0055, ST0075 and ST0140 are modules with a direct engine (ST0055 with gear) and absolute rotary encoder for fast, precise and highly dynamic rotary, pivot and gripping movements.

The High Torque Rotary Unit is referred to as machine in the following text of this operating manual.

1.2 Intended use

The machine is an incomplete machine in terms of Directive 2006/42/EC, Article 1g and 2g.

The machine is designed for integration into other machines, into other incomplete machines or equipment or for connection to them.

It may only be used within the limitations defined in the order characteristics.

Commissioning is prohibited until it has been established that the machine into which the aforementioned product should be installed is conform with Directive 2006/42/EC and all other applicable directives governing its use.

Intended use also requires the observance of the included documention and compliance with the maintenance provisions.

1.3 Non-intended use

Any use of the machine other than intended is considered non-intended use and is not permitted.

The machine must not be subjected to loads that exceed the maximum limits.

The machine is not suitable for use:

- in wet or damp environments of any kind (water, oils, acids, steam or vapours, etc.).
- in an environment with gases or radiation.
- in potentially-explosive atmospheres.
- in environments that contain swarf.

1.4 Laws / EC Directives / Standards

The machine is designed and constructed to conform to:

- applicable laws
- Directive 2006/42/EC (Machinery Directive)
- Low Voltage Directive, 2006/95/EC
- EMC Directive 2004/108/EC
- and the harmonised standards that we have cited

and meets state-of-the-art technological standards in terms of its construction.

1.5 Assembly and instructions manual

In the following text of the document, the Assembly and instruction manual will be referred to as manual.

We reserve the right to undertake modifications because of technical developments to the data and illustrations contained in these instructions.

The operating manual and the associated valid documentation are not subject to an automatic revision service.

Information on the respective current edition can be obtained from the manufacturer.

Local regulations must be observed.

This manual describes handling of the assembly and contains important instructions and information to assist you in using the assembly.

This manual is intended for trained technical personnel or persons who have been instructed.

Safety instructions in individual chapters should be observed.

1.5.1 Explanation of safety instructions in this manual

This manual contains instructions that you should observe for your personal safety and to avoid material damage.

Safety instructions for your personal safety are highlighted by a sign containing a warning triangle and signal word. The associated text describes the hazard involved, avoidance options and the consequences which may result from failure to observe the safety instruction.

General instructions or instructions relating to possible material damage are highlighted by a sign without a warning triangle.

They are, depending on the degree of risk involved, illustrated as follows:

DANGER	***A warning triangle with the signal word DANGER indicates an immediate hazardous situation, which, if not avoided, will lead to fatalities or severe injuries.***
WARNING	***A warning triangle with the signal word WARNING indicates a potential hazardous situation, which, if not avoided, can lead to fatalities or severe injuries.***
CAUTION	***A warning triangle with the signal word CAUTION indicates a potential hazardous situation, which, if not avoided, can lead to light or medium injuries.***
NOTICE	***A sign with the signal word NOTICE indicates potential material damage or provides additional information, which should be observed when operating the machine.***

1.5.2 Legend

Symbols and abbreviations with the following meaning are used in this manual to make its content more clear:

1. Indicates a numbered list.
   a) Indicates the second level of a numbered list.

- Indicates a list.
  - Indicates the second level of a list.

The book symbol before a section of text indicates further applicable documents.

The information symbol before a section of text indicates an additional note or an important tip for use.

1.5.3 Figures

The figures shown are examples. There may be differences between the illustrations and the actual delivery.

1.5.4 Directory of valid pages

Pages of this manual including the title page: 42

1.6 Further applicable documents

In addition to this manual, further documents are required to ensure safe operation of this machine. The specifications stated in these documents must to be observed.

For control system by WEISS-GmbH:

- Operating manual WAS.indexer Control ST0055 - ST0140
- Operating manual WAS.handling Windows programme

1.7 Warranty and liability

The machine is covered by a guarantee of 24 months from the date of delivery without shift limitations.

2 Safety

2.1 Fundamental safety instructions

2.1.1 Operator‘s obligation to exercise diligence

This machine conforms to state-of-the-art technological standards and ensures a maximum level of safety.

However, this level of safety can only be attained under operating conditions if all measures necessary for this have been taken. The operator‘s obligation to exercise diligence includes planning of these measures and the inspection of their realisation.

The operator must ensure that

- the machine is only used as intended.
- the machine is only operated in faultless, functional condition and mechanical and electrical safety devices are present.
- required personal protective clothing is provided for and used by operating, maintenance and repair personnel.
- the operating manual and all other applicable documentation is maintained at all times in legible condition and is accessible at the implementation site of the machine. Ensure that all personnel who has to execute activities tasks on the machine can access the operating manual at all times.
- only adequately qualified and authorised personnel maintain and repair the machine.
- such personnel are instructed regularly in all questions concerning occupational safety and environmental protection, including the operating manual and safety instructions contained therein.
- all safety instructions and warnings affixed to the product are not removed and must remain legible.
- national accident prevention guidelines and company-internal guidelines are complied with.
- VDE regulations are complied with.
- the EMC legislation is complied with during installation.

2.1.2 Requirements to be met by personnel

It is imperative that the following safety instructions be observed during all operations involving the machine. This ensures avoidance of life-threatening injuries, machine damage, other material damage and environmental damage.

The personnel must ensure that

- trainees are initially permitted to only work on the machine under the supervision of an experienced person.
- all personnel who maintain the machine read the operating manual and confirm with their signature that they have understood the operating manual.
- unauthorised persons are not in the vicinity of the machine when tasks are being performed.
- supplemental to the operating manual the operating instructions as specified in labour protection legislation and work equipment use legislation are complied with.
- the operator or supervisory personnel are informed in the event of malfunction.
- required personal protective clothing is used.

The following work described in this operating manual should only be realised by qualified personnel:

- Transport
- Installation
- Commissioning
- Maintenance

2.2 Safety equipment for the machine

The operating company is responsible for ensuring that a suitable safety concept is developed and applied for the safe operation of the machine.

The operating company must take all measures to protect his personnel against injury by the machine.

These include:

- Safety housing with monitored safety door
- Emergency-stop circuit
- Light barriers or switch mats
- Warning signs

2.3 Residual hazards

WARNING

Missing safety equipment
Operation without safety installations is dangerous. The operator is responsible for the realisation of a suitable safety concept. The operator must provide for sufficient safety measures such as protective grating, light grids, emergency stop button, covers, warning notices, etc. Operation without safety equipment is prohibited. Injuries caused by squeezing or pulling in.

Missing danger signs
Damaged or illegible danger signs no longer fulfil their purpose. Make sure the danger signs are complete and legible. Replace damaged danger signs.

Danger of explosion
Danger of explosion during operation in a potentially explosive atmosphere. Operation in a potentially explosive atmosphere is prohibited according to correct use. Only correct use is permitted. Injuries caused by an explosion.

Incorrect spare pats / mounting of ancillary equipment
The use of incorrect spare parts or the mounting of unauthorised ancillary equipment can lead to subsequent damage with the risk of injury. Only use spare parts from our spare parts list or spare parts we have approved. The mounting of ancillary equipment must be coordinated with us. Injury of persons due to subsequent damage.

Impermissible modifications
Impermissible modifications can lead to subsequent damage with risk of injury. Modifications on the machine are prohibited. Injury of persons due to subsequent damage.

Electric shock
Power and control connections may still conduct electricity after the machine has been deactivated and is stationary. Energised capacitors inside the servo drive may still be charged, despite the power supply being deactivated. Work on electrical equipment should only be realised by skilled electrical personnel and under observance of specifications in the electrical operating manual. Electrical connections for the machine should only be loosened or plugged in when the power supply is deactivated and secured against reactivation. The status of capacitor charging should be measured prior to working on machine electrical equipment. The procedure for measuring charges is described in the electrical operating manual. Touching energised components can lead to serious or even fatal injuries.

Squeezing or pulling in
The rotary disc of the machine turns at a very high speed. Extremities can be crushed or pinched when interfering with the motion sequence. Never put hands into the work area of the machine. Injuries caused by squeezing.

3 Product description

3.1 Structure

The optionally programmable, highly dynamic High Torque Rotary Unit consists of a solid base body made of aluminium with the electrical connections and the rotary disc.
The machine can be certified for sterile room usage.

Every machine can be delivered in different sizes and lengths.
The existing holes in the base body allow versatile options of fixing.
Operator installations can be fixed on the rotary disc.

The electric connections are made via plug-in connections.
A absolute measuring system is used as a measuring system. The measuring system used depends on the order.

The following parameters of the machine are variable:

- size
- length
- rotary encoder
- holding brake

ST0055 ST0075 ST0140

Fig. 1: General view of the rotary unit

3.2 Function

The engine is controlled via a servo drive and turns, accelerates or delays the rotary disc of the machine. The rotary disc can be operated left-running, right-running or oscillating.

A high level of positional accuracy and repeat accuracy are achieved through the integrated measuring system.

In stillstand, the rotary disc can be held in its position with the optional holding brake. The brake force is created with springs. The brake is lifted by electromagnetic control and closes automatically if the voltage is turned off or in case of power outage.

The High Torque ST0055 rotary unit does not have a brake. No optional brake is available.

The High Torque ST0075 and ST0140 rotary units can optionally be supplied with an electric holding brake.

The High Torque ST0055 rotary unit is equipped with a gearbox.

The High Torque ST0075 and ST0140 rotary units are equipped with a direct drive.

3.3 Technical data

High Torque Rotary Unit	ST055	ST075-1	ST075-2	ST075-3	ST140-1	ST140-2
Gear reduction ratio	i = 63	--	--	--	--	--
Nominal torque	18 Nm	0,5 Nm	1,0 Nm	1,4 Nm	7,5 Nm	15 Nm
max. Torque	36 Nm	1,4 Nm	2,8 Nm	4,2 Nm	18 Nm	36 Nm
max. speed	5000/min	1000/min	600/min	600/min	600/min	600/min
Nominal voltage	200 VAC	230 VAC	230 VAC	230 VAC	230 VAC	230 VAC
Nominal current	0,68 A	0,5 A	0,6 A	0,7 A	1,9 A	3,1 A
Peak current	0,7 A	1,6 A	1,9 A	2,2 A	5,6 A	7,5 A
Holding torque of the brake	-- Nm	0,5 Nm	0,5 Nm	0,5 Nm	15 Nm	15 Nm
Temperature monitoring	PTC*					
	* ST0055 with PTC single, 60 Ohm cold, > 1kOhm at 120 °C * ST0075 and ST0140 with PTC triple, 180 Ohm cold, > 1kOhm at 120 °C					
Heat class	F					
	Heat class of the isolation system according to EN600341					
Concentricity	0,04 mm	0,01 mm	0,01 mm	0,01 mm	0,01 mm	0,01 mm
Axial run-out	0,02 mm	0,01 mm	0,01 mm	0,01 mm	0,01 mm	0,01 mm
Weight	1,06 kg	1,6 kg	2,1 kg	2,6 kg	6,9 kg	8,6 kg
	Weight with standard encoder and without brake					
Measuring system	**Interface Sick-Stegmann Hyperface**					
Type	SEL37	SEK52 SKM36			SEK90	
Precision	± 270"	± 280" ± 120"; SIL 2			± 130"	
Measuring system	**Interface Heidenhain EnDat**					
Type	--	ECN413 ECN413			ECN113 ECN225	
Precision	--	± 60"; 512 lines ± 20"; 2048 lines			± 20" ± 10"	

3.3.1 Scope of delivery

The scope of delivery of the machine depends on the order involved. Please refer to the order information or order specifications for individual components.

3.3.2 Sound level

The A-weighted emission sound pressure level does not exeed the allowable peak.

3.3.3 Type plate

The type plate is fitted to the housing of the machine and contains the details described in the illustration.

NOTICE ***The illustrated type plate is only an example of a machine and is not identical to the actual type plate of the described product.***

A second type plate is included in the scope of delivery. The second plate can be mounted at a clearly-visible location on the machine to allow viewing of performance data if the type plate fitted by the manufacturer is concealed by any other structures.

Additional barcode serial number

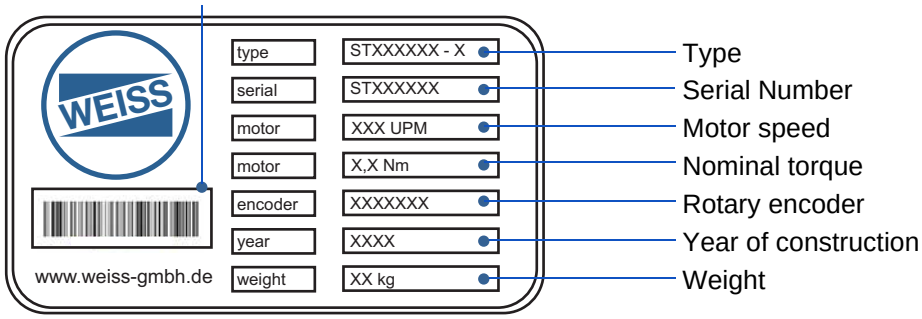


Fig. 2: Example of a type plate

3.3.4 Ambient conditions

Humidity	5 % to 95 %, non-condensing
Allowable temperature range	Storage: +5 °C to +55 °C Operation: +15 °C to +45 °C
Environment	It is not permissible to use the machine in environments that contain abrasive dusts.

3.3.5 Installation positions

Permissible installation positions for the machine are:

- horizontal and vertical at any angles.

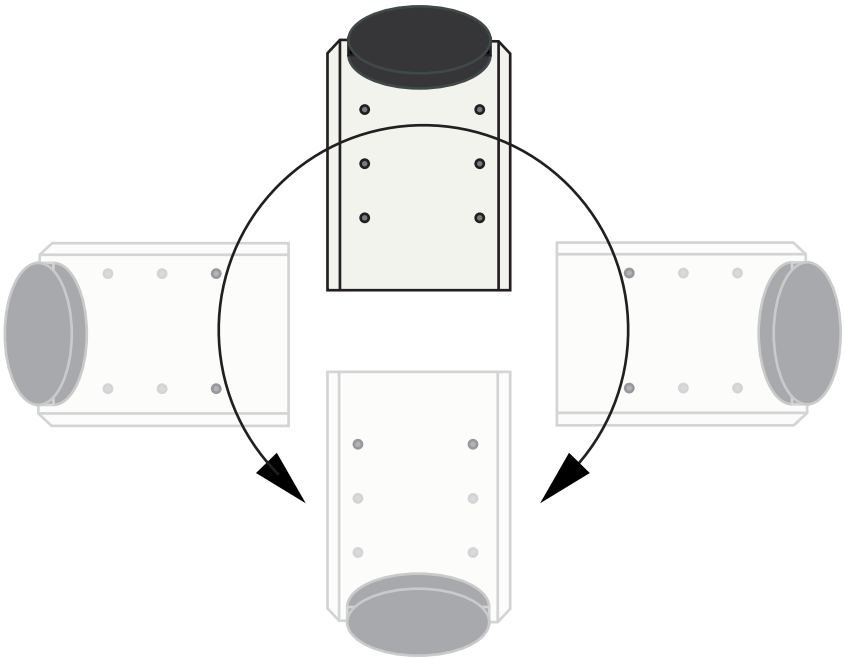
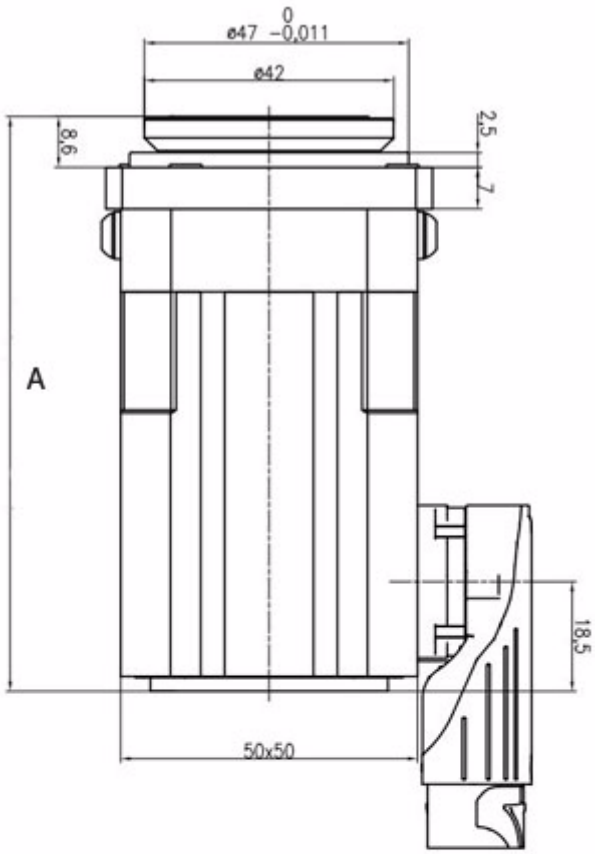


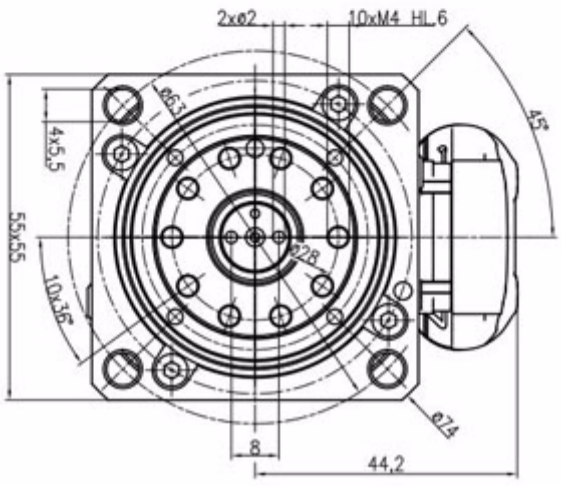
Fig. 3: Installation positions

3.3.6 Dimensions

3.3.6.1 High Torque Rotary Unit ST55

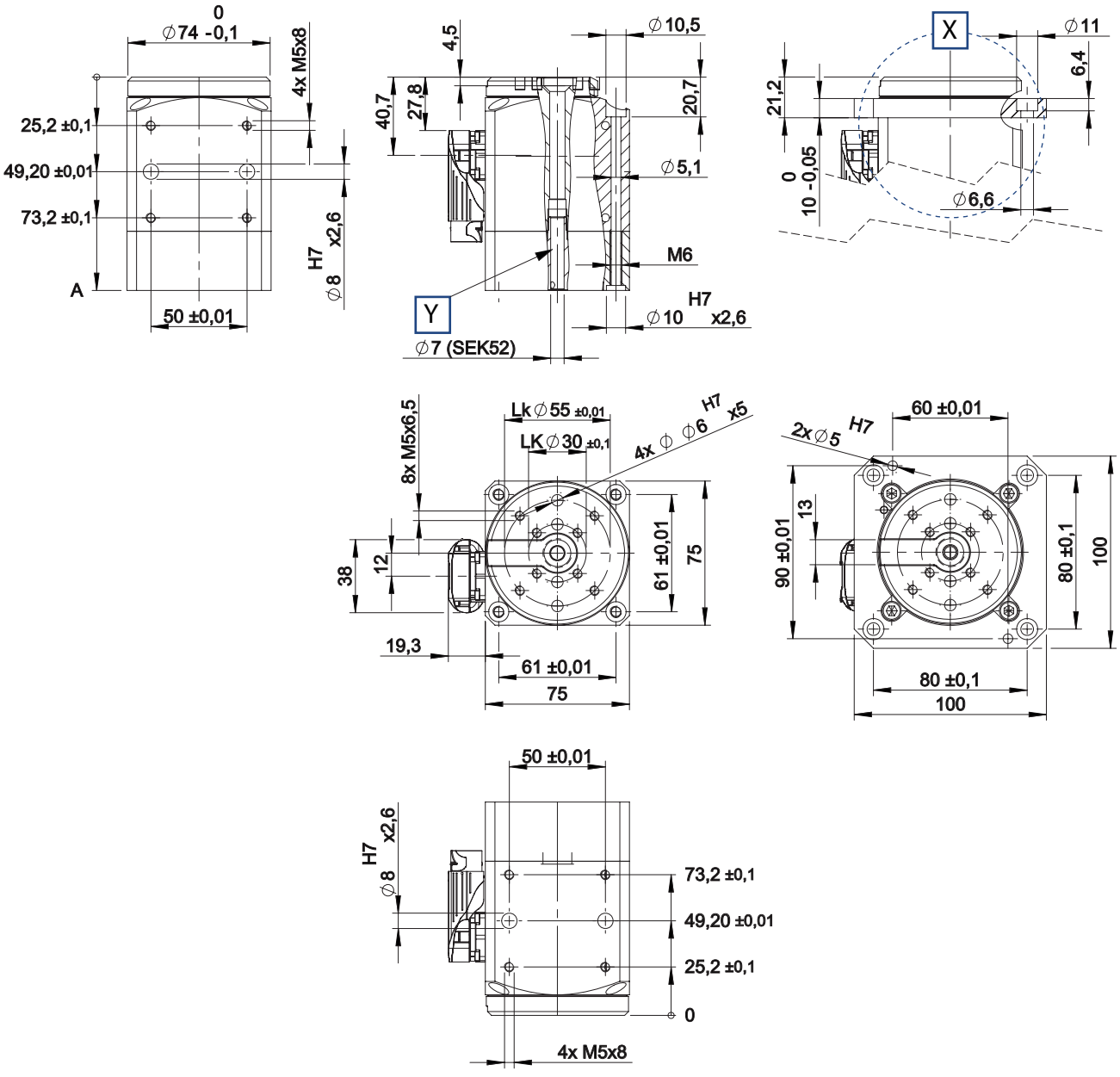
Measurement table:	Dimensions in mm
ST	**A**
	Sick Stegmann
	SEL37
55	109





3.3.6.2 High Torque Rotary Unit ST75

Measurement table:	Dimensions in mm					
ST	**A**					
	Sick Stegmann				Heidenhain	
	SEK52		SKM36		ECN413	
		with holding brake		with holding brake		with holding brake
75-1	111	150	123	165	143	180
75-2	131	170	143	185	163	200
75-3	151	190	163	205	183	220

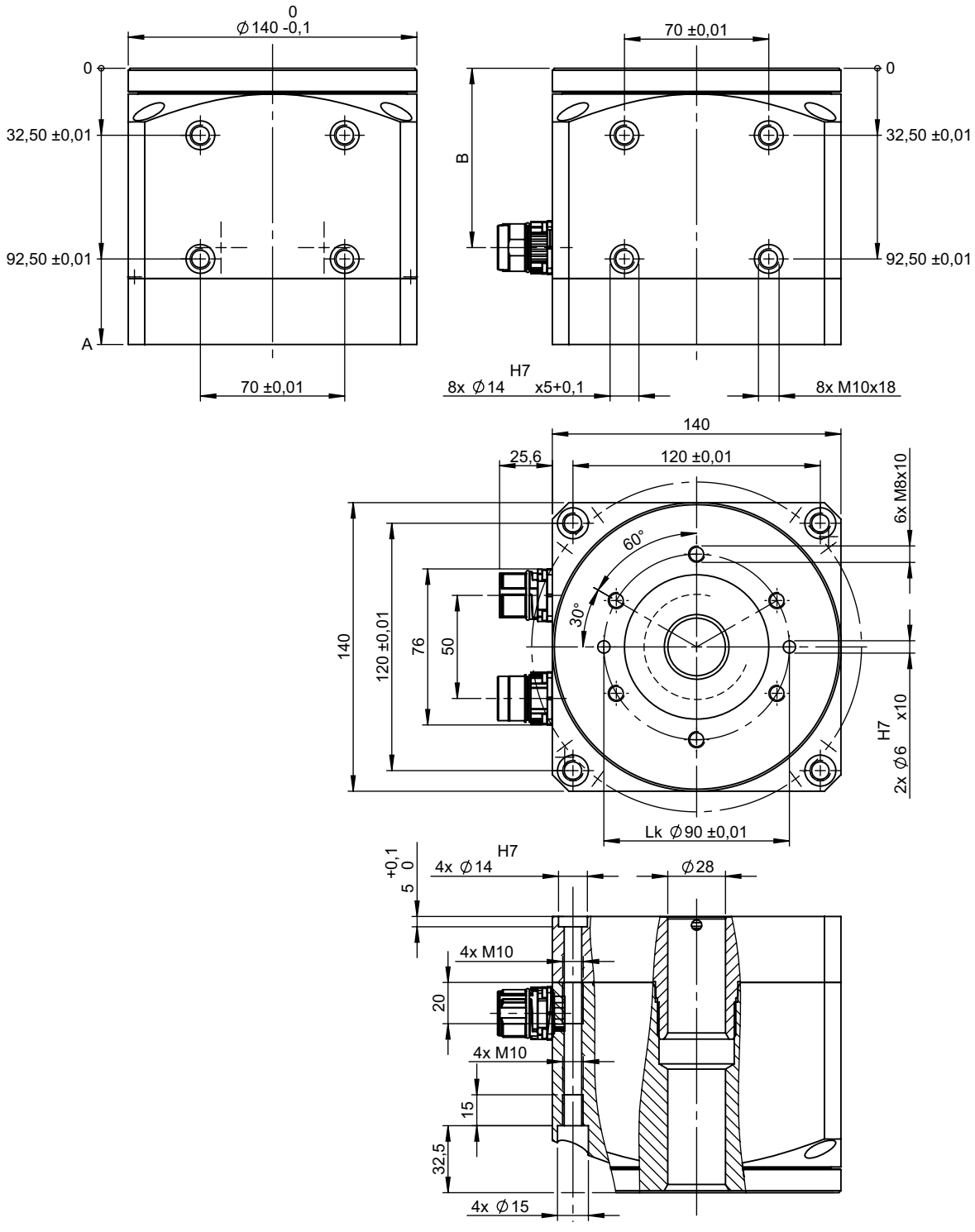


X = Option with flange

Y = Trough hole only when encoder SEK52. Installation of other encoders with centred fastening screw .

3.3.6.3 High Torque Rotary Unit ST140

Measurement table:	Dimensions in mm					
ST	**A**					
	Sick Stegmann		Heidenhain			
	SEK90		ECN113		ECN225	
		with holding brake		with holding brake		with holding brake
140-1	137	196,8	168	224	168	224
140-2	164,5	224,3	195,5	251,5	195,5	251,5



3.4 Electrical connections

The servo drive and the ready-made electric cables are included in delivery when the machine is supplied with the electrical package.

3.4.1 Plug-in connections

The multi-purpose plug for motor cable [A] and measuring system [B] are mounted in an easily accessible and rotatable manner on the casing of the machine on the High Torque Rotary Units ST55 and ST75.

The plugs for motor cable [A] and measuring system [B] are mounted in an easily accessible manner on the casing of the machine on the High Torque Rotary Unit ST140.

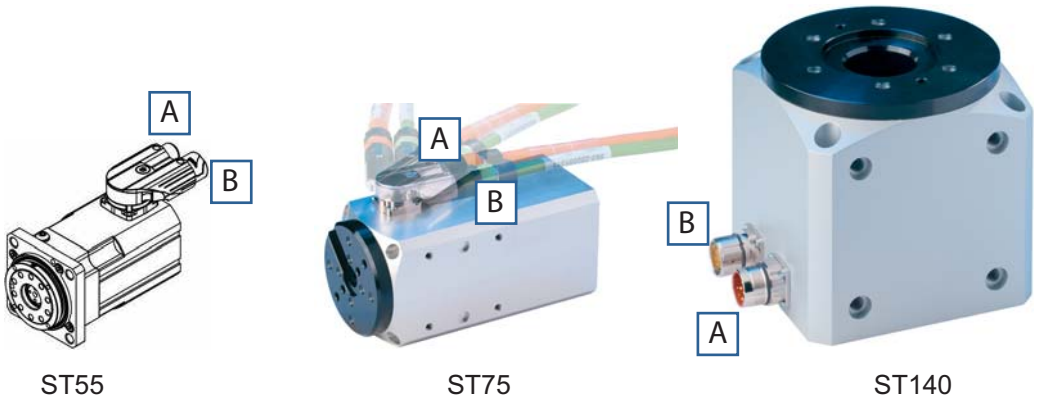
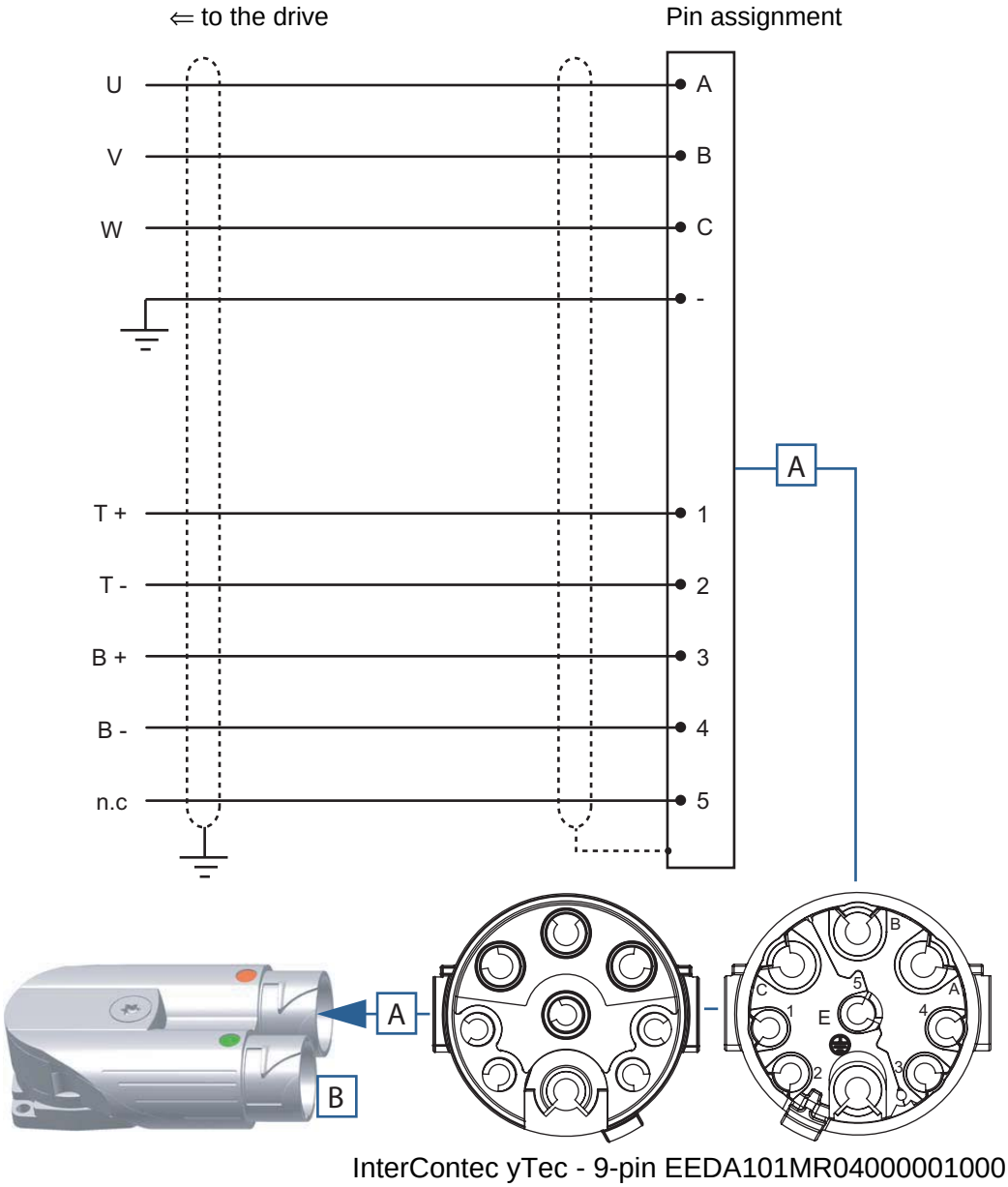


Fig. 4: Plug-in connections

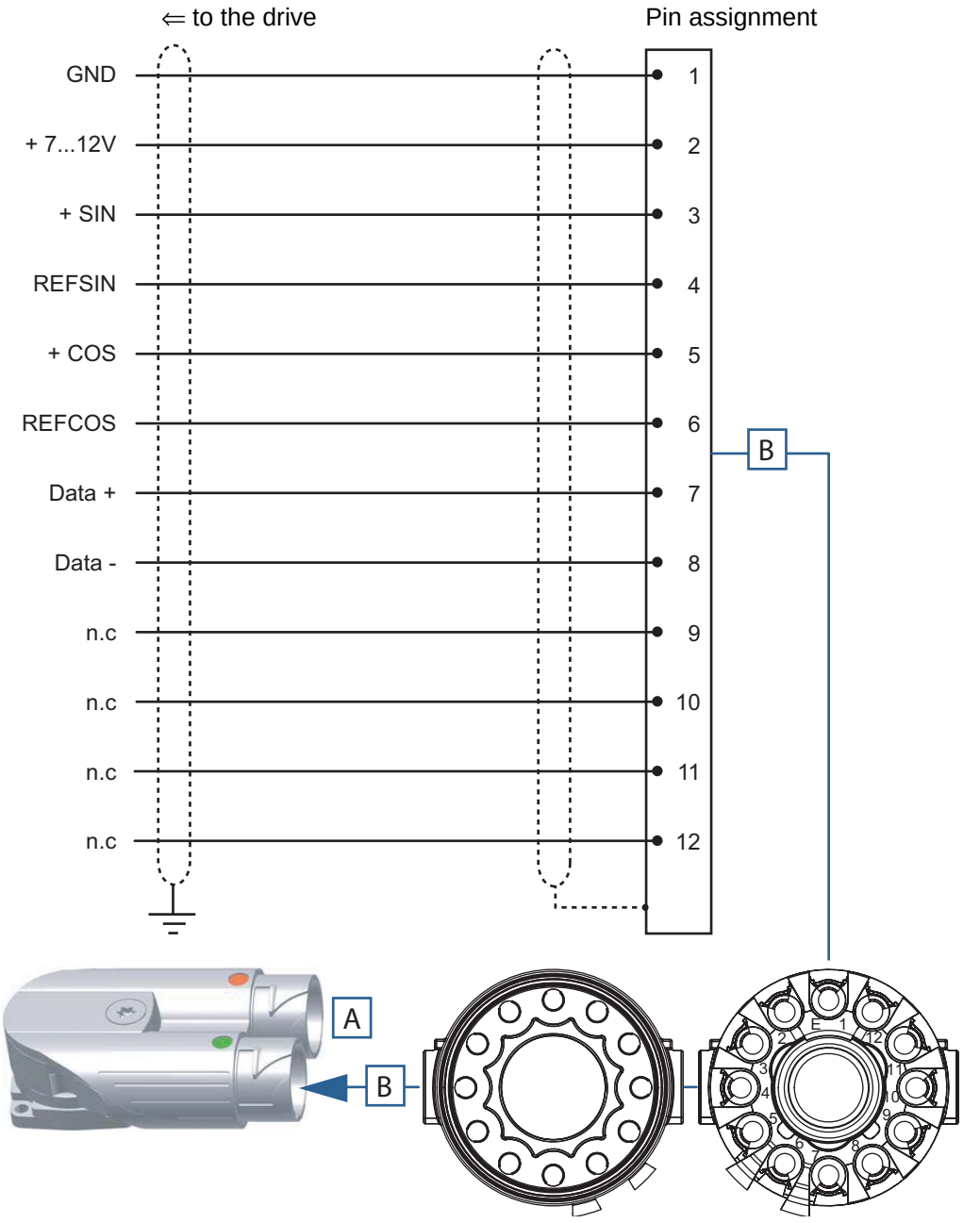
3.4.2 Connector pin assignment

3.4.2.1 ST55: Connection motor



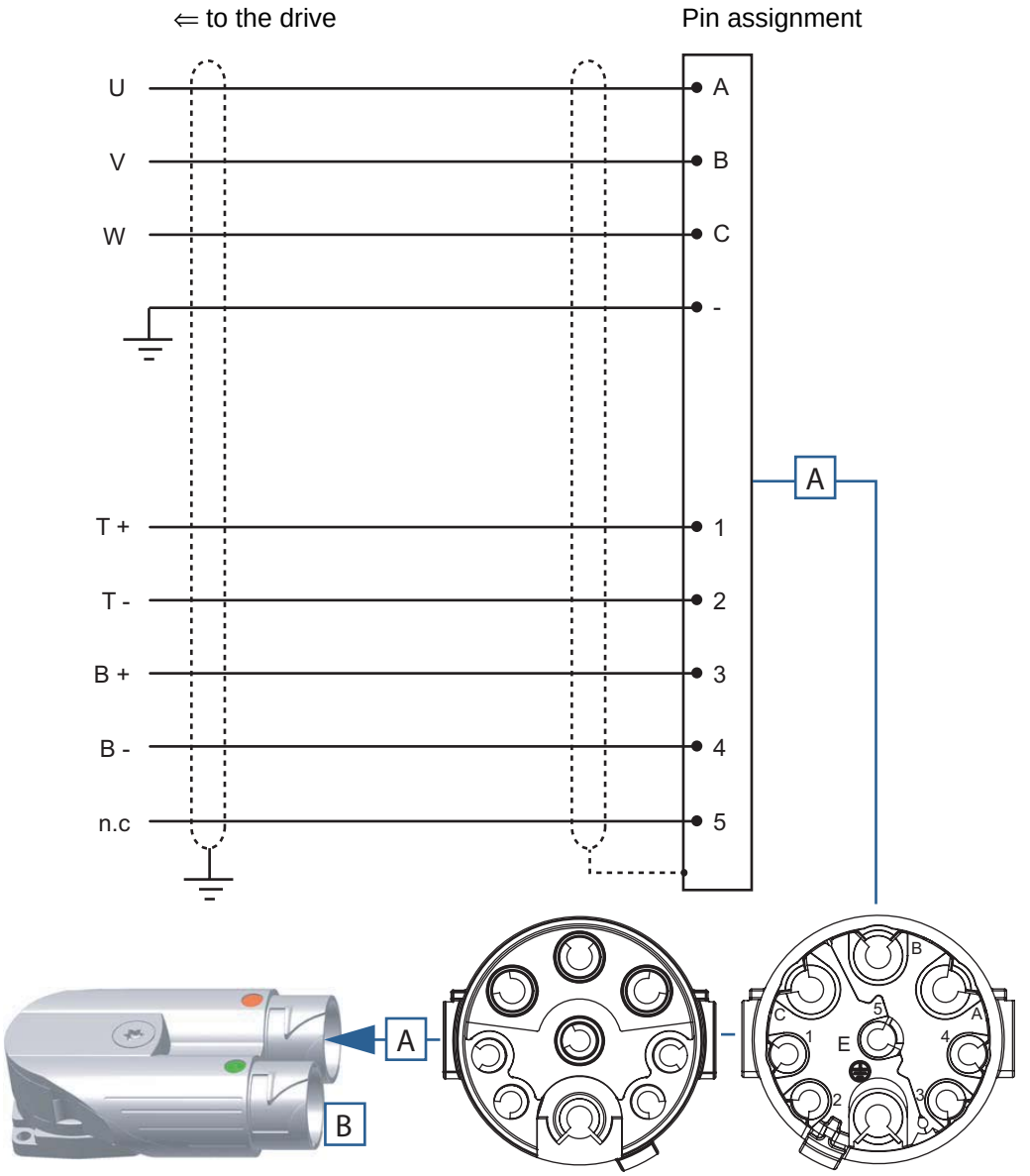
InterContec yTec - 9-pin EEDA101MR04000001000

3.4.2.2 ST55: Connection encoder



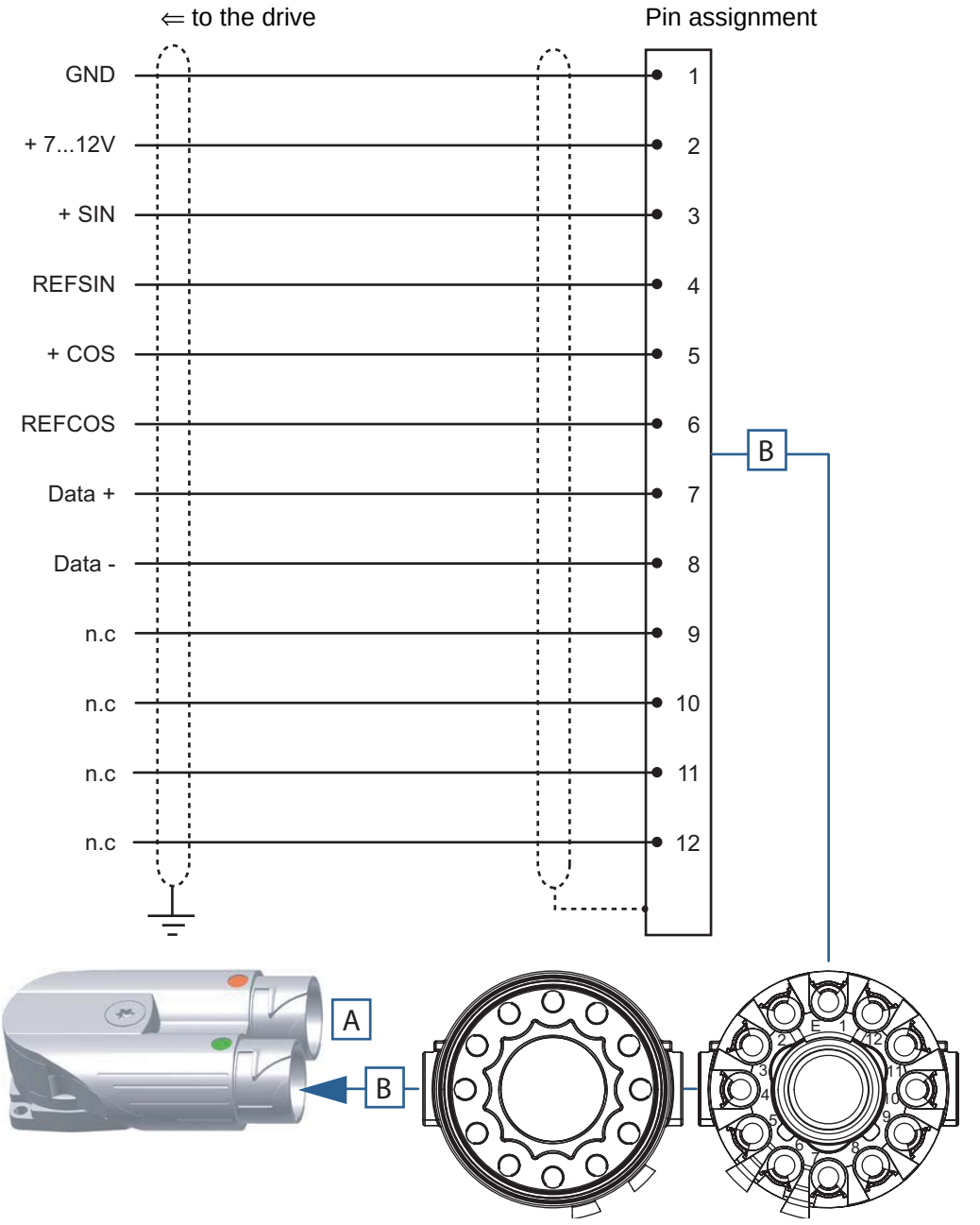
InterContec yTec - 12-pin EEDA101MR04000001000

3.4.2.3 ST75: Connection motor



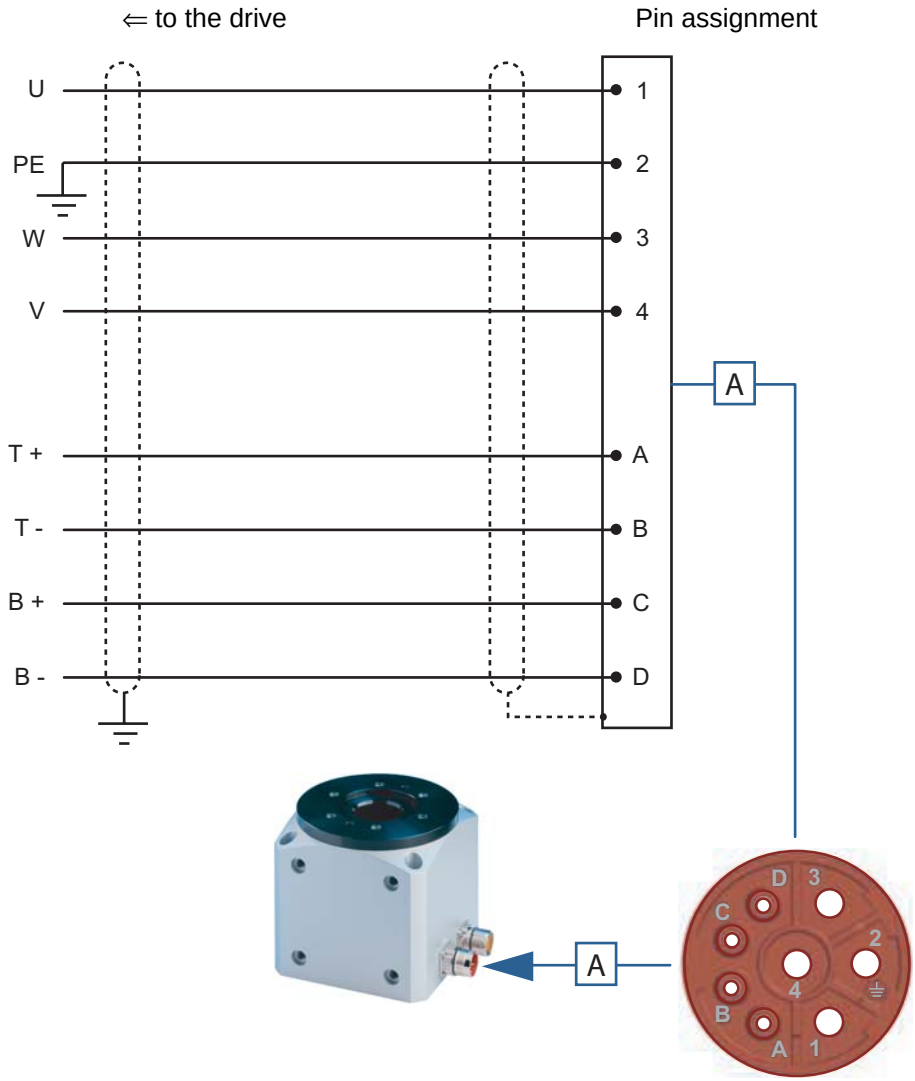
InterContec yTec - 9-pin EEDA101MR04000001000

3.4.2.4 ST75: Connection encoder



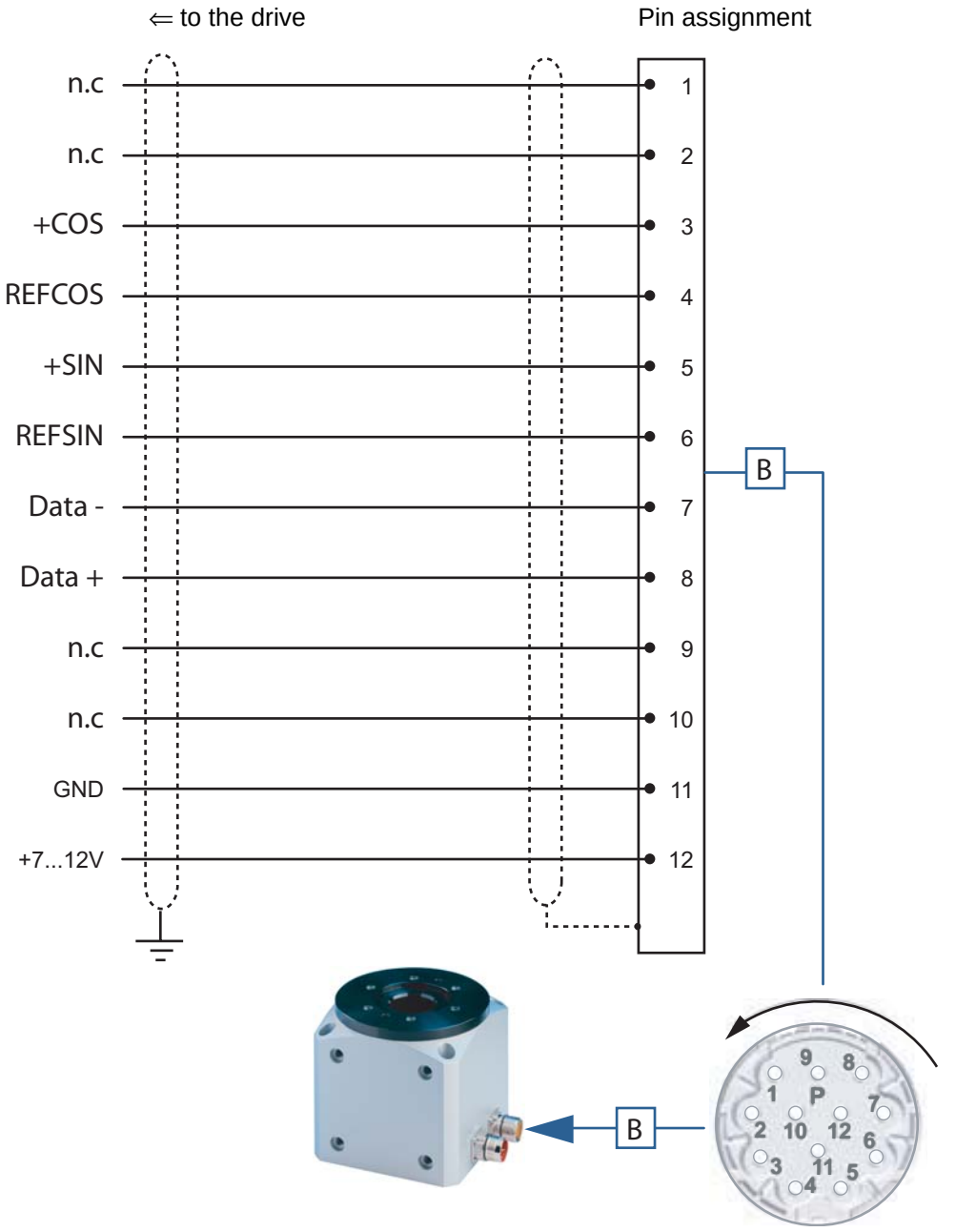
InterContec yTec - 12-pin EEDA101MR04000001000

3.4.2.5 ST140: Connection motor



InterContec M25 BEGA 125 MR 13 00 0006 000

3.4.2.6 ST140: Connection encoder



InterContec M25 D_AEGA052MR04000201000

4 Transport

NOTICE

The machine must be protected against impermissible strains (mechanical strain, temperature, humidity, aggressive atmospheres) during transport and when being stored.

4.1 Transport damage

The delivery should be inspected for damage immediately after it is received. The contents of the delivery should be checked for damage if damage to the packaging is detected which could indicate damage to the contents. Details of the scope of delivery are provided in Chapter 3.3.1.

Detected damage should be immediately reported to the transportion company and confirmed.

4.2 Intermediate storage

Observe the storage conditions listed in the following table, if intermediate storage is planned for a longer period of time.

Climatic zone	Packaging	Storage location	Storage duration
All	Packed in containers With moisture absorbers and humidity indicator sealed in film Protect against insect damage and mould formation by treating chemically	Roofed over Protected against rain Not exposed to vibrations	Max. 3 years with regular inspection of packaging
	Open	Roofed over and sealed at a constant temperature and air humidity (5 °C < T < 60 °C, 50% relative humidity) No sudden temperature fluctuation and controlled ventilation with filter (free of dirt and dust) No aggressive vapours and no vibrations Protected against insect damage	2 years and longer with regular inspection. Check for cleanliness and machine damage during inspection. Check that anticorrosion protection is unspoiled.

5 Installation

5.1 Safety during installation

WARNING

Injuries caused by incorrect installation.
The dimensions of the supporting ground and fastening equipment must sufficient, so that they can withstand the stresses produced during operation.

Auxiliary personnel may only perform work which is assigned to them by plant technicians.

Create a proper electrical grounding.

5.2 Installation prerequisites

Check prior to installation whether the dimensions of the installation site and building conditions correspond to the necessary prerequisites and measurement specification in the drawing documents.

Particularly ensure that:

- The supporting floor is level and rigid.
- The dimensions of the supporting structure at the installation location must be sufficient to withstand the dynamic forces that occur.

5.2.1 Installation preparation

- Open the packaging unit prior to the assembly and remove the machine from the packaging unit.
- The customer's bores must be made based on the hole pattern in Chapter 3.3.6.
- The attachment screws must be at hand.

5.2.2 Operating media / Auxiliary media / Tools

The following are required for installation of the machine:

- One set of spanners
- One torque wrench
- One set of screwdrivers
- Screw securing agent (e.g. Loctite ® 243)
- Screws which are at least have a property class of 8.8

5.3 Assemble machine

Different holes and thread drills are available to assemble the machine.

NOTICE ***The existing holes and/or thread drills must be used to assemble the machine. Additional drills or welding on the machine is prohibited. Damage to the machine.***

The machine can be assembled in the admissible installation layers at customer location using the existing drills and/or thread drills.

1. Set up the machine at the assembly position.
2. Tighten the attachment screws however, not all the way.
3. Align the machine.
4. Tighten the attachment screws all the way.
5. Make electrical connections in accordance with the circuit diagrams.

5.3.1 Installation of additional components

NOTICE ***To assemble the attachment parts on the rotary disc, the existing holes and/or thread drills must be used. Additional drills or welding on the machine is prohibited. Damage to the machine.***

To guarantee concentricity and part accuracy, attachment parts may only be assembled with the intended fitting bore resp. with centre bore and threads.

By using the existing drills and/or thread drills additional components can be mounted at the rotary disc.

5.4 Installing the safety equipment

The operator is responsible for providing for safety equipment and emergency stop buttons. The machine may not be operated without suitable safety equipment.

5.5 Instructions on disposal of packaging material

Packaging materials should be reused or disposed of properly in compliance with national regulations.

6 Commissioning

6.1 Safety during commissioning

WARNING

Risk of injuries emanating from unexpected start-up.
Connections which were not established correctly or external influences on the electrical equipment can cause the machine to start unexpectedly and uncontrolled movement. Activate and check all safety equipment and emergency-stop circuits prior to commissioning.

- Ensure that the machine is only commissioned by qualified personnel in compliance with the safety instructions.
- Ensure that only authorised personnel are in the work area, and that others cannot be injured due to the commissioning process.

The following prerequisites must be met prior to commissioning the machine:

- The machine is correctly mounted.
- The electrical equipment for the power supply is available and correctly fitted.
- All cables are laid properly and correctly connected in compliance with valid electrical circuit documents.
- The shielding of the motor wires is in place.
- The shielding of the motor wires is in place.
- The static discharge must be conducted properly.
  - The shunt resistance must be measured and have a value of < 10 MOhm.
  - The measurement must be recorded in a log.
- The required safety equipment and emergency-stop circuits are available and functioning correctly.

Prior to commissioning the machine, check whether

- the drive is undamaged and not blocked.
- all connections have been correctly established.
- no other hazard sources are present.
- no foreign materials, tools or other objects are lying in the operating area of the machine.

The following should be checked during commissioning

- the machine runs smoothly.
  - Jerking of the rotary disc can be a sign for incorrect regulator parameters.
- no excessive noise development is detected.
  - A strong development of noise may indicate improper assembly or incorrect control parameters.

6.2 Initial commissioning

If the machine is delivered with servo drive and software, the start-up is conducted via the Weiss Application software WAS.handling Windows programme.

More information is also contained in the operating manual WAS.indexer Control ST0055 - ST0140 .

6.3 Recommissioning

WARNING ***Risk of injury emanating from an operationally unsafe machine.***
An operationally unsafe machine can cause injuries and material damage. Recommissioning should only be realised after it has been ascertained that the machine is in a functionally reliable condition and no risk emanates from it during operation.

A visual inspection of the machine should be conducted prior to re-commissioning. The following should be checked and ensured in this regard:

- No damage is present on the machine.
- No foreign materials, tools or other objects are lying in the operating area of the machine.
- All supply units are connected and operating.
- Safety equipment is ready for operation.

7 Operation

7.1 Safety during operation

WARNING

Risk of injury due to incorrect alteration of operating parameters.
Improper changes of operating parameters can cause unforeseeable system behaviour. Operating parameters should only be changed by authorised personnel. Altered operating parameters should be checked in a test. Incorrect parameters can cause consequential damage and thus injuries.

7.2 Operating the machine

The machine is designed for integration into other machines, into other incomplete machines or equipment or for connection to them.

Safe operation and control are the responsibility of the operator.

7.3 Operating personnel workstations

The operating personnel workstations are determined by the operator of the plant or product in which the machine is integrated.

8 Malfunctions

8.1 Safety when remedying malfunctions

WARNING

Injury of non-authorised personnel.
Malfunctions should only be remedied by instructed personnel provided by the operator who are trained and authorised to perform these tasks. The machine should be deactivated with the main switches and secured against unintentional reactivation prior to remedy. The radius of action of moving machine parts should be secured.

8.2 Errors / Cause / Remedy

Information on malfunctions and their elimination are contained in the operating manual WAS.indexer Control ST0055 - ST0140 .

8.3 Customer Service

Please provide the following details if you require the assistance of our Customer Service:

- Serial number of the machine
- Description of the malfunction that has occurred
- Time and attendant circumstances of the malfunction that has occurred
- Assumed cause

You can contact our Customer Service from Monday to Friday between 08:00 and 17:00 at the

Service number +49 (0) 6281 - 5208-0

or at service@weiss-gmbh.de

An answering machine will provide you with information outside of the hours listed above.

9 Maintenance

9.1 Safety during maintenance

WARNING

Injuries caused by the power supply and residual energy.
All power sources should be deactivated prior to carrying out maintenance work, and secured against unintentional reactivation and marked with a sign indicating that maintenance work is in progress. All moving parts should be stationary. Loads should be secured against sagging or slipping. All components energized with electrical power should be de-energized (Extinguished LED's on the servo drive do not mean that all components have been completely de-energised). Check by measuring to ensure that all components are de-energised. Work on electrical equipment may only commence if the voltage is less than 42 VDC.

Injury of non-authorised personnel.
Maintenance work should only be realised by instructed personnel who have been authorised to perform these tasks. The operating instructions laid down by the operator must be rigidly adhered to.

Injuries resulting from maintenance work that has not been announced.
The working area should be secured over a wide area prior to realising maintenance work and marked with warning signs. Operating personnel must be informed that maintenance work is being carried out.

Injuries caused by the use of incorrect components or incorrect operating media.
Only spare parts, which are listed in our spare parts list, may be used. Subsequent modifications on the machine are prohibited. Only the specified operating materials may be used.

CAUTION

Hot surfaces
Motor and the brake can reach temperatures of up to 100 °C during operation. Prior to carrying out any work on these components, first the machine has to cool down sufficiently to avoid any risk of burning due to contact. Burn injuries will occur if there is contact with hot components.

- Ensure that only qualified electricians perform all tasks on the electrical equipment.
- Ensure that all work steps for maintenance are performed in the specified sequence.
- Ensure that specified tightening torques are observed.
- Ensure that all foreign objects are removed from the work area after the maintenance.

9.2 Maintenance work

Maintenance includes tasks for the purpose of:

- Inspection
- Maintenance
- Repair

9.3 Inspections

9.3.1 Conducting a six-monthly visual inspection

Conduct a visual inspection for

- loose bolt or pin connections.
- damaged to cables and plugs.

9.4 Maintenance

The machine is maintenance free.

9.5 Repair

The operator should not perform any maintenance or repair work on the machine.

Should maintenance or repair work become necessary, the customer service of WEISS GmbH is to be contacted.

10 Decommissioning / Dismantling / Disposal

10.1 Safety during decommissioning and dismantling

WARNING

Injury of unauthorised persons.
Ensure that decommissioning and dismantling is only realised by persons trained, instructed and authorised for this purpose. These persons should be familiar with the operating manual and act in accordance with it.

10.2 Decommissioning

10.2.1 Temporary decommissioning

The machine should be deactivated for decommissioning and secured against unintentional reactivation.

The machine should be fitted with a sign that clearly indicates that it is temporarily decommissioned.

NOTICE ***For recommissioning, comply with the instructions in chapter 6.3.***

10.2.2 Ultimate decommissioning

For ultimate decommissioning and shutdown:

- Turn off the machine according to specifications.
- Secure the machine against unintended reactivation.
- Provide the machine with a notice which clearly indicates that the the machine is ultimately shut down.

10.3 Dismantling and disposal

⚠ CAUTION ***Injuries can occur during disassembly through falling components.***
The following points must be observed to avoid injuries and/or environmental damage during dismantling and disposal:

- In order to avoid injury, ensure that suitable tools are used and that dismantled machine components are stable.
- Wear personal protective clothing and protective equipment.

10.3.1 Disposal of components

NOTICE ***Subassemblies should be disposed of properly!***
Improper disposal of subassemblies can cause environmental damage and will be prosecuted!
Dispose of subassemblies in compliance with valid local regulations. Ensure that auxiliary operational media are disposed of in compliance with environmental protection regulations. Local regulations governing the correct recycling and disposal of waste should be observed.

The machine consists of:

- steel and aluminium (casing, rotary disc, plug)
- copper (motor, electric wires)
- plastic (electric cables)
- Electronic components (servo drives, boards)

11 Service and spare parts

11.1 Ordering spare parts

Please supply us with the following details when ordering spare parts:

- Serial number of the machine
- Order number of the spare part obtained from the spare parts list
- Number of spare parts required

Please send your spare parts order to

WEISS GmbH
Siemensstraße 17
D-74722 Buchen/Odw.

Tel: +49 (0) 6281 - 5208-0
Fax: +49 (0) 6281 - 5208-99
E-mail: service@weiss-gmbh.de
Internet:http://www.weiss-gmbh.de

A complete list of the addresses of our sales representatives is available on our website..

12 Appendix

12.1 Illustration index

12.2 Index

V

W

12.3 Personal notes

12.3 Personal notes

Weiss GmbH | Siemensstrase 17 | D-74722 Buchen
Telefon +49(0)6281-5208-0 | Fax +49(0)6281-520899 | info@weiss-gmbh.de | www.weiss-gmbh.de