

## Installation and operating instructions

### Amek Belt Conveyors

For more information on  
Wiring, conveyor safety, signage - please visit  
[www.beltconveyors.co.uk/bc113customersupport.htm](http://www.beltconveyors.co.uk/bc113customersupport.htm)

Safety note: Amek conveyors are designed for incorporation,  
therefore a relevant risk assessment and safe working  
method, must be carried out by the customer prior to use.  
This manual contains important safety information regarding  
your conveyor



# Conveyor Training



**Further to your valued conveyor order, Amek as a conveyor module manufacturer is able to offer the following conveyor and safety training if you require, This will be at an additional cost**

**Conveyor training:** £ POA (*Please contact your conveyor supplier*)  
Based at our Hull site for up to 6 people per session. This will including items such as module assembly, Installation guidance, maintenance procedure and general operation. This is specific to Amek products. (1 day)

**Working with our health and safety consultants, Amek is also able to offer the following IOSH health and safety courses from our Hull based manufacturing site;**

**IOSH Working safely: 1 day (aimed at all employees)**  
£ POA (*Please contact your conveyor supplier*)

To enable individuals to reduce the risk of accidents and incidents at work.  
To help them apply sound-working principles of Health & Safety effectively.  
To enable trainees to demonstrate their competencies in successfully completing a practical & written exam, to the performance criteria specified by IOSH.  
Content: Health & Safety at Work, Hazards & Risks, Common Hazards at Work, Risk & Risk control,  
Positive Safety Behaviour, Safe System at Work, Common Hazards

**IOSH Managing safely: 5 days (aimed at managers)**  
£ POA (*Please contact your conveyor supplier*)

To enable delegates to apply sound health and safety principles to the management of health and safety at work.  
To enable delegates to become competent and demonstrate this by successfully completing a practical and written exam to the performance criteria specified by IOSH.  
To build up an in-depth awareness of health and safety practices, its implementation and the legal aspects and how to apply it in their workplace.  
To understand health and safety risk, its assessment and the use of accident investigation and prevention.  
For more information on these items please contact our sales team

## **Additional Training**

We would always recommend application specific training for your staff prior to using any conveyor or automation item. This would normally also include manual handling techniques and use of PPE. When using, loading and unloading conveyors correct manual handling techniques should be used. We would also recommend as part of your training, you highlight any areas of residual risk, (and guard if required) and ensure they do not go underneath a moving conveyor.

## Assembly and installation

The conveyor section is supplied pre assembled - if 3m or under or part assembled if over 3m, at the customers site, assembly has to be completed using a competent person by the customer, then erected and connected. (See *drawing in manual*)

- Wind the locking nut onto the adjustable foot of castor and wind the foot into the leg
- Ensure all conveyor fixings are tight
- Set the conveyor to the required height using the adjustable feet and use the locking nuts to secure them - Use a spirit level for this task
- If using adjustable feet, secure the conveyor to the ground, with the relevant fixing kit, ensuring the frames are not warped.
- When aligning the conveyor ensure, ensure there is no contact between moving parts.



### WARNING



#### Risk of injuries due to incorrect assembly

- A risk assessment and method statement must be carried out prior to final assembly and installation.
  - Assembly must be carried out by competent and qualified personnel in accordance with the relevant safety instructions.
  - Carefully assembly all connections, eg cables, hoses and pipes and check they are corrected correctly
- Pay attention to the tracking of the belt - (Refer to tracking page on website)
  - After conveyor installation, make sure passageways are clear. If conveyors are to be crossed, put in walkways
  - When integrating conveyor into a system or a process, a risk assessment must be carried out for the conveyor to reach conformity, Always consider possible danger zones including areas where crushing and cuts can occur.
  - PPE and Safe working practices should also be adopted

#### Electrical Installation

### DANGER



#### Danger of death due to live cable ends!

- Electrical installation should only be carried out by qualified / competent electrical personnel
  - Disconnect from power supply
  - Observe the minimum bending and wear
- Power is to be supplied to the conveyor by relevant isolated plug or direct into a control panel through an isolator
  - Always check cable for damage
  - Connect motor in accordance with EN-IEC 60204-1 - refer to motor wiring pages for wiring information

## Start up and operation

**Initial Start up** - *To be carried out by competent persons*

### WARNING



#### Risk of injuries due to incorrect handling

- Check risk assessment and method statement have been carried out.
  - Check electrical connections and protective equipment
  - Ensure all unauthorised / untrained personnel are removed from the area
  - Wear appropriate PPE
- Check direction of travel prior to initial start up. If required correct the direction. (optimum performance is achieved with the drive pulling the belt.)
  - Check the belt tracking and adjust if required.

### Operation

#### Prior to each operation

- Check the conveyor for signs of visual damage. Pay special attention to belts, support stands and wiring
- Ensure that all safety equipment is functioning properly
- Make sure only authorised and trained personnel are in the conveyor work area and they are wearing all the appropriate PPE.
- Ensure the work area is clear from obstruction and is tidy
- Provide instructions and monitor, loading and unloading the conveyor

### WARNING



#### Rotating parts!

Crushing and serious injury due to being caught and pulled into the conveyor

- Do not remove any guarding
  - Never wear loose clothes and tie long hair back
  - Keep hands and body parts away from moving parts
  - Follow safe working practice when using conveyors
- **If goods become trapped within the conveyor, do not just pull the object, isolate the conveyor and find out why and how the jam has occurred**

#### Procedure for accidents or malfunctioning

- Stop the conveyor and isolate
- Accident - Apply first aid and call emergency services
- Inform a specialist (A specialist must eliminate the fault)
- Only restart after the conveyor has been deemed safe by a specialist

#### Disposal

- Adhere to the manufacturers disposal documents when disposing of oil, recycle parts if possible.

#### Environmental - considerations

- Turn off the power to the conveyor when not in use
- Ensure waste oils, belts etc are disposed of in accordance to regulations

# Conveyor Safety

## Basic Safety instructions



The conveyor was generally safe to operate at time of delivery, however dangers may still arise during use. A safe working practice, risk assessments must be carried out by the user covering all aspects of use within the incorporated system, process or machine. All staff to be properly trained in all aspects.

- Danger of personal injury or death for operators and others
- Adverse effects on the conveyor and other items

Non adherence to the information in these instructions and information within this manual can result in life threatening injury.

### Intended use

The universal belt conveyor is intended for incorporation in a wide range of industrial systems, machines and food environments to transport goods.

Do not exceed the conveyor limits, if unsure contact your conveyor supplier.

### Incorrect Use

The conveyor is not intended to transport, people and some transportation of some hazardous chemicals, please check with you supplier

### Specialists

Specialists are people who have knowledge of conveyor items and understand the instructions, and have the ability to carry out work professionally whilst observing regulations

### Competent Person

A person is regarded as competent if they have 'sufficient training and experience or knowledge and other qualities to properly and safely carry out the required operation ' without causing risk to themselves or others'.

### Electricians

Electricians must be able to assess and recognise possible dangers when performing tasks, due to training, experience and knowledge of regulations.

Motor wiring diagrams are available on download from our website

[www.beltconveyors.co.uk/bc113customersupport.htm](http://www.beltconveyors.co.uk/bc113customersupport.htm)

### EMC

All applicable components within Amek conveyors conform to the relevant EMC standards, A copy of the relevant certificates are held within our technical files. EMC testing should be carried out on the machine as a whole in its finished form by the customer.

# Conveyor Safety

## Dangers



The following dangers are some of the various dangers which may occur when operating, maintaining or cleaning the conveyor.

## Safety Equipment

- Only carry out maintenance when the conveyor is switched off and measures taken so it cannot be started
- Organise additional measures to restrict access to the conveyor
- Never remove any guarding whilst the machine is running.
- Regularly inspect safety equipment and barriers
- Always wear PPE that is in good condition

## Electricity

- Never reach into a live machine - Always Isolate from supply

## Rotating parts

- Never wear loose clothing
- Never wear jewelry
- If long hair - wear a hair net

## Work environment

- Keep work area tidy and clear of obstruction
- Wear safety shoes + other site minimum PPE including gloves
- Monitor work practice

## Malfunctioning

- Inspect the conveyor for damage
- Be aware of any smoke or unusual noises, (Isolate at mains and seek advise)
- Clean up any oil spills
- Do not climb on the conveyor
- If Objects get jammed - Do not just pull - Isolated the conveyor and find cause of jam

## Maintenance

- Carry out maintenance regularly
- Only use original spare parts

## Incorporation

Danger zones can arise when integrating the conveyor into a system, machine or process. These danger zones are not covered in these instructions. These must be analysed during final assembly and installation and first start up. *Safe working practices and relevant training should be given to personnel.*

*If necessary, implement and add further constructional methods*

## Transport, movement and storage

The conveyors will be delivered generally on a pallet, secured with strapping and heat shrunk, highlighted for incorporation. On the pallet, there will be the conveyor items, supports, fixings etc along with a incorporation paperwork and wiring detail.

### Transport and movement

#### CAUTION



Risk of injuries due to incorrect transport

- Transport must be carried out by qualified and authorised personnel.

- Ensure people are not in danger - lift zone
- Ensure pallet and conveyors are lifted and moved safely, we would recommend due to the size and nature of the items moved a specific risk assessment and safe working procedure should be carried out and adopted.
- Wear appropriate PPE (including minimum Safety shoes and Gloves)

### Delivery

- Prior to signing from the carrier the pallet must be inspected for damage. Notify the driver, by writing on their paperwork as damaged and contact your supplier. The carrier must be notified at time of delivery, to prevent any claims being refused.

### Storage

#### WARNING



Risk of injuries due to incorrect Storage

- Do not stack conveyors on top of each other
- Do not place other objects on the conveyor
- Ensure conveyor is safely positioned prior to leaving it
- If the conveyor is not to be used straight away, protect from moisture and dust.

### Movement - Conveyors supplied with castors

#### WARNING

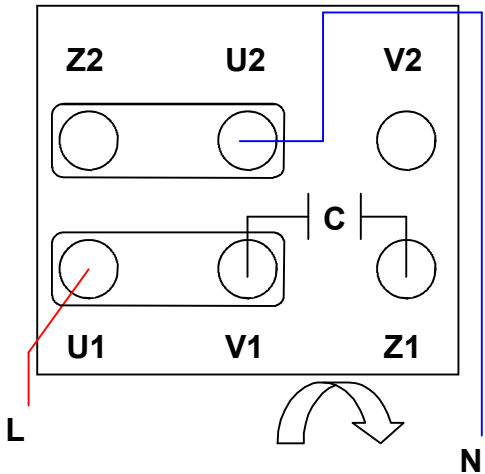


Risk of injuries due to incorrect Movement - *if in doubt do not move*

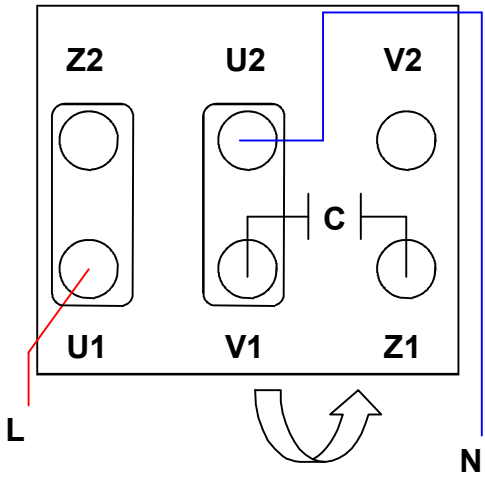
- Ensure a risk assessment is also carried out and safe working procedure on regarding movement of conveyors
- Ensure the conveyor is free of objects prior to movement.
- Ensure the area is free from obstruction and floors swept.
- Ensure the castors are free to move without obstruction
- Ensure the castors are locked prior to using the conveyor again.

For further information and support please visit our website  
[www.beltconveyors.co.uk/mobileconveyors.pdf](http://www.beltconveyors.co.uk/mobileconveyors.pdf)

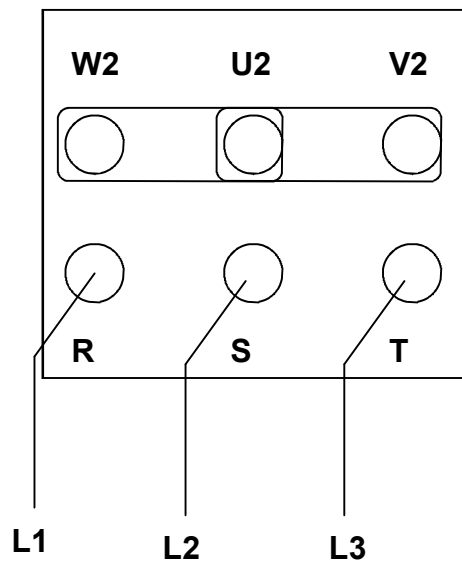
# Geared Motor Wiring



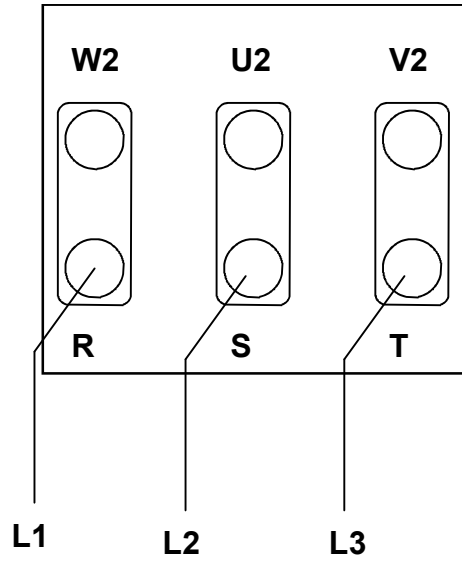
1 Phase 230 V



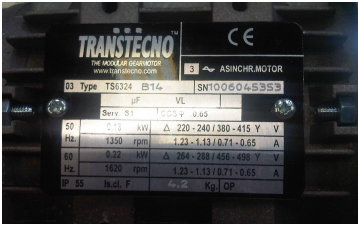
1 Phase 230 V



3 Phase 400 V



3 Phase 230 V



Motor Rating Plate

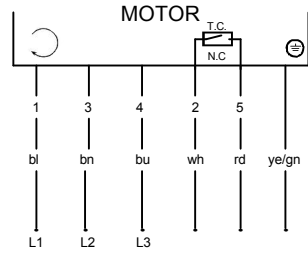


## Other Electrical Products Available from Amek

- Contactors
- Inverters
- Power Supplies
- Push buttons
- Din Rail terminals
- DOL & Overloads
- Timers, Counters & PEC's

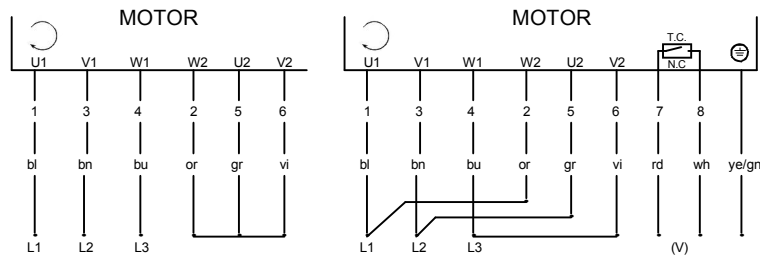


### 3-phase voltage—6 leads T.C

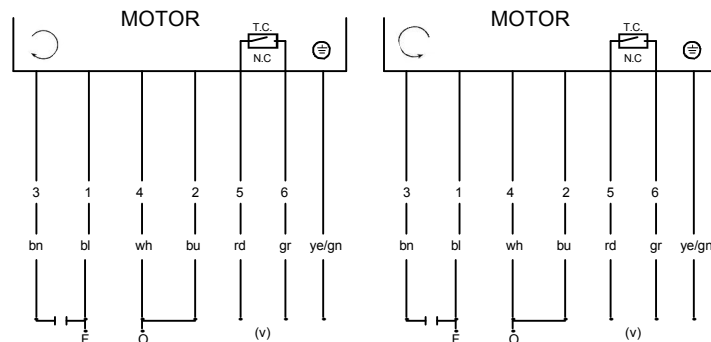


For counter clockwise rotation, change L2 and L3

### 3-phase voltage—6 or 9 leads T.C— dual voltage



### 1-phase voltage—7 leads T.C

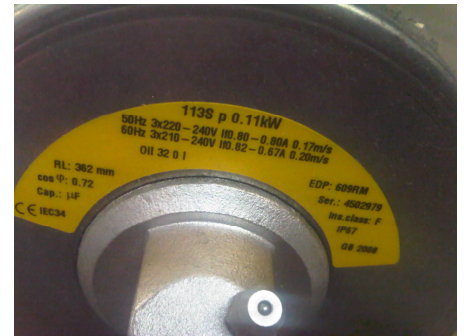


## Drum Motor Wiring

# 80S, 113S



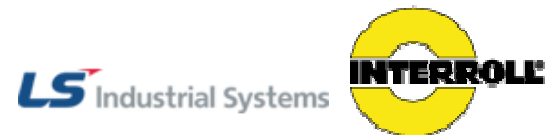
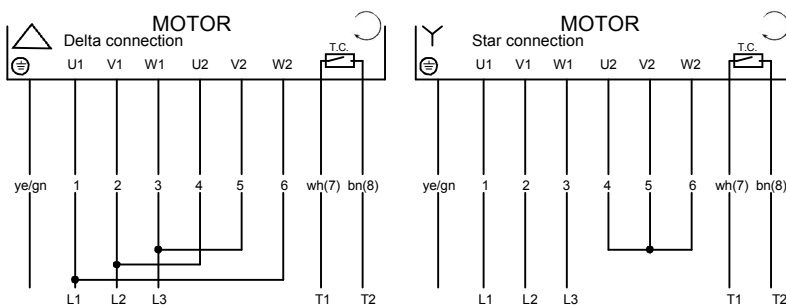
All Amek conveyors using drum motor which are also supplied with drum motor drives are also supplied with the drum motor manufacturers manual. This information is taken from the manufacturers manual.



Motor Rating Plate

## Drum Motor : 80i, 113, & 135i

### 3-phase voltage delta/star connection



### Other Electrical Products Available from Amek

- Contactors
- Inverters
- Power Supplies
- Push buttons
- Din Rail terminals
- DOL & Overloads
- Timers, Counters & PEC's

# Conveyor Maintenance Schedule + Spares requirements



Conveyor maintenance, service and daily checks are an essential part of the reliable, safe running of any conveyor. Failure to carry out these simple checks, may have a detrimental effect on the conveyor. Below is the outlined recommended checks and maintenance detail for B & E series belt conveyors.

## **CONVEYOR MUST BE ISOLATED PRIOR TO CARRYING OUT CHECKS & MAINTENANCE**

### **Daily checks by trained nominated operator**

- Check condition of belt
- Check for obvious signs of wear or loose fixings
- Check for foreign bodies lodged on or in the belt conveyor
- Check condition of warning signs and operating procedure
- Check condition of electric buttons and knobs - (Do not open panels)
- Check all personal using have had relevant training **& have all required PPE**
- Check conveyor tracking is ok. (inform maintenance if this need adjusting)

### **Conveyor Maintenance - To be carried out by suitable qualified / competent person**

- Check condition of belt
- Investigate Drive drum and return rollers for signs of wear.
- Check condition of external wiring.
- Tighten any loose fixings
- Grease any bearings as required
- Check and adjust tracking as required
- Check condition of warning signs and operating procedure
- Check condition of electric buttons and knobs
- Look over conveyor body for signs of damage
- Check condition and functionality of guarding directly associated with the conveyor and conveyor process + report

Conveyor maintenance should be carried out on a regular basis by a competent person, Contact us to ascertain service interval for your product.

### **Spare parts**

We would always recommend the stocking of spare parts which minimises down time on conveyors, in the event of a part failure.

Drum motor or geared motor (Normally 2 to 5 days)

Drive roller (Normally 1 week)

Drive bearings (Normally next day)

Idler roller (Normally 2 to 5 days)

Return roller (Normally 2 to 3 days)

Conveyor belt (Normally 2 to 3 days)

Costing and accurate delivery details, available on request



## Manufacturers declaration

According to EC Machinery Directive 2006/42/EC

The manufacturer

Amek Limited

Bergen Way, Hull, UK

Hereby declares that the conveyor module described belt

- Belt conveyor types B80, B113, B135 & B200
- Serial numbers between: 53000 to 59999

Is not a ready to use machine according to the EC machinery directive and therefore does not fully comply with the requirements of this directive.

Initial start up of these conveyor modules is not permitted until conformity of the entire machine / system / process in which they are installed has been declared via the EC machinery directive!

Applied EC directives

Machinery directive 2006/42/EC  
Low voltage directive 2006/95/EC  
EMC Directive 2004/108/EC

Applied harmonised standards

EB ISO 12100 Pt 1 & Pt2  
EN 294 Safety of machinery to prevent danger zones been reached  
EN 349 Safety of machinery, minimum distances to avoid crushing  
EN 60204-1



Neil Ellerby  
Director  
9th May 2011