Technical sheet Pallet transfer system TLM 5000





TLM 5000



Conveying unit p 192



Index TLM 5000

Désignation	Page
Data	
General principle	
Workpiece carriers	189
Workpiece carrier base	
Drive units	192
Stands, light and heavy	194
Sensor bracket M12 x 100	194
Cuts and straight joinings	195
Spacers Widths 500 - 600 - 800 - 1000	195
Angles	
Stoppers - Stopper, manual	
Stoppers, damped	199
Positioning unit	200
Inductive sensor M 12 x 100	201
Inflatable belt drive transfer	202
Inflatable bet conveyor holder	









500 x 500 500 x 800 500 x 1000* 600 x 600 600 x 800 600 x 1000 800 x 800 1000 x 1000
50
10 - 12
500 6000
400 or 75 %
0,25 KW - 0,83 A
-

The maximum length of the conveying units is: 6 000 mm.

For long spans, several elements can be joined end to end.

For important accumulations, the length of the conveying units is adapted to the load.

It is recommended to place sensors in order to control accumulation of the load.

Pneumatic cylinders must be equipped with flow rate controllers.

It is possible for long spans to be cut in order to facilitate the dismantling of the machines.







Data



General principle

Workpiece carriers are used to support and position the components during the process.

Flexible and economical industrial system adapted to convey large workpiece carriers 500x500 to 1000x1000.

Workpiece carriers (of various materials), fitted with multidirectional rollers, are conveyed on stainless steel treads, allowing high loads.

The conveying of workpiece carriers is carried out by belt driving units with controlled pneumatic pressure. For a manual moving of the workpiece carrier, some sections are available without driving.

A pneumatic management device put in each angle allows the damping and the automatic change of direction of the workpiece carrier (without PLC).

The modular design of TLM 5000 transfer system allows to optimize the dimensions of workpiece carriers to conveyed components.

Further extensions and modifications can be easily made.



Workpiece carriers

The modular conception of TLM 5000 allows large architectures of workpiece carriers.

Multidirectional rollers ensure the rolling of workpiece carriers. They are integrated in PA angles which are fixed under the 4 angles of the workpiece carrier.

PA blocks consist in:

- **x** 1 shock absorber to limit the shock between the workpiece carriers and to reduce the noise.
- x 1 multidirectional roller
- **x** 1 detection bar to ensure the control of workpiece carriers.

The drive is ensured by angle blocks and by the central base (one, two or three depending the dimension of workpiece carrier).

The central base allow a quick start of workpiece carriers in corners and the stop of workpiece carrier on stoppers.

Two centering bushes ensure the position on positioning units.

Various plates are usable according to the size and application:

- **x** Aluminium profile 40x40 or other
- x Aluminium plate, thickness: 8, 10, 12 or 16 mm
- x Steel plate
- **x** Beech multi-ply plate









Workpiece carrier, base

Technical data

Square workpiece carrier

- **x** 4 angle blocks equipped with:
 - * multidirectional roller
 - * shock absorber
 - * detection bar
- x 4 central base

Rectangular workpiece carrier

- **x** 4 angle blocks equipped:
 - * multidirectional roller
 - * shock absorber
 - * detection bar
- x 6 central base

Option: bush set x 2 steel bushes Option: bush set profile x 2 steel bushes

Note: 2 bushes per workpiece carrier should be adapted in case of indexing in 2 directions

Weight:

Workpiece carrier, squared: 1,5 kg Workpiece carrier, rectangular: 2 kg Bush: 0,5 kg Bush profile: 0,7 kg



Workpiece carriers, above Widths 500 - 600 - 800 - 1000

Technical data

Profile workpiece carrier

x Frame in aluminium profile 40x40

Plate workpiece carrier

Option:

- **x** Aluminium
- **x** Thickness: 8, 10, 12 or 16 mm
- x Steel
- **x** Beech multi-ply
- x Plastic







Drive units

Applications

Drive unit including:

x Bearing part

Maxi length: 6 m

The rollers, placed under the workpiece carrier, roll on a steel strip which enables a move without any effort and a durability.

The load is supported by a profile 80x40 which is surmounted by a support profile strip ensuring a great rigidity.

x Drive part Maxi length: 6 m

The inflatable unit ensures the move of the workpiece carrier.

A timing belt, (continuously running) is supported by a plastic slide strip in which a pneumatic membrane exerts a vertical force.

Adjustment of the air pressure in the membrane can vary the thrust force under the workpiece carrier.

To maximize the number of motors, it is recommended to use the same unit in angles.

In many lean applications, the bearing part is used alone and the workpiece carriers are manually conveyed from workstation to workstation.







Drive units Widths 500 - 600 - 800 - 1000

Drive part:

Technical data

x Maxi length: 6 m

x Maxi filling ratio: 75%

A = Workpiece carrier width

Ŵ

Maximum load on workpiece carrier: 400 daN

Weight:

Drive unit:11 kg + 2 kg/mDrive unit, double:18 kg + 4 kg/mBearing unit:7 kg/m



Stands, light and heavy

Technical data

Stand, light:

Used only as bracket, the longitudinal stress are stood by a station or a by a rigid frame (1 stand every 1,5 m).

Stand, heavy:

Used when the transfer ensures rigidity. According to the loads, reinforcing pieces are necessary.

Weight:

Light: 3,5 kg Heavy: 6 kg





Sensor bracket M12x100

Applications

Bracket for workpiece carrier M12x100 sensor

Technical data

- **x** Cast aluminium
- x Nut 8 St M6 + screws
- x Detection range: 4 mm

Weight: 0,1 kg





Cuts and straight joining

Applications

The cuts allow division of conveyor lengths to make the transport and installation of the line easier.

They also enable building significant lengths.



Inflatable units cannot be cut.

Technical data x 6 double universal fastenings



Spacers Widths 500 - 600 - 800 - 1000

Applications

If the length of the conveying unit is >1,5 m, spacers have to be fitted between the profiles 8 80x40.

(1 spacer every 1,5 m).

Technical data x Profile 8 40x40 light x 2 universal fastenings

Weight: 500: 0,8 kg 600: 1 kg 800: 1,3 kg 1000: 1,6 kg



Angles

The angle is self-supporting, it is supplied with 4 rigid feet, 2 inflatable units set in parallel and piloted by a pneumatic shock absorber. An output valve ensures the reset of the shock absorber.

Rectangular workpiece carriers have 2 units which are set in parallel on the same motorization.

With automatic control, it is not possible to perform an operation or an accumulation in the angle.





Angles

Technical data

- **x** Structure with aluminium profile **x** Adjustable shock absorber with
- piloting device
- **x** 1 anti bouncing back device
- x Reset valve
- **x** Guides for workpiece carrier

Weight: 35 kg











Stoppers

Applications

Stopping workpiece carriers during processing requiring no accuracy.

Stopper, manual

The manual stopper is used for lean applications, it doesn't require management. For workpiece carriers with less than 30 kg.

Stopper with anti bouncing back device.

Technical data

x The operator releases the workpiece carrier.







TLM 5000

Stoppers, damped

Pneumatic stopper: used on manual workstation or to manage accumulations.

it allows the stop of workpiece carriers from the front or rear.

Stoppers are equipped with an adjustable pneumatic shock absorber to ensure a stop without shock of workpiece carrier. Reset is automatic.

The workpiece carrier can be stopped on the front or the rear. Depending on the direction of workpiece carrier arrival, there are left and right stoppers.

For lean applications, the control can be done by a button or a pneumatic pedal.

Anti bouncing back option:

Prevents bounces of workpiece carriers when stopping on the stoppers. For lean applications, this option prevents the back up of workpiece carriers. $\begin{array}{c}
100\\
100\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5\\
113,5$



Weight: 1,3 kg

Positioning unit

Stopping and positioning workpiece carriers for operations requiring accuracy.

The workpiece carrier is stopped by a damping stopper, then positioned by a locating pin system. No vertical movement of the workpiece carrier.

Positioning unit can be equipped with antibouncing back device.

Technical data

x 2 cylinders Ø 32

x 4 flow rate controllers 1/8 + bushes should be adapted

Supplied with 1 sensor bracket. Forecast 1 sensor M12x100 detection range 4 mm has to be adapted.

Repeatability with: aluminium or steel plate: +/- 0.05 frame profile: +/- 0.2

Maximum load: 100 daN Pay attention to the wokpiece carrier bending.

Weight: 7 kg







Inductive sensor M12x100

Applications

Detection for the workpiece carrier.

Technical data

- x Shielded mounting sensor M12x100
- **x** LED control display
- **x** PNP-10-30 VDC
- **x** Screwed connection
- x Cable 5 m

