NIKO
Overhead Conveyor Systems

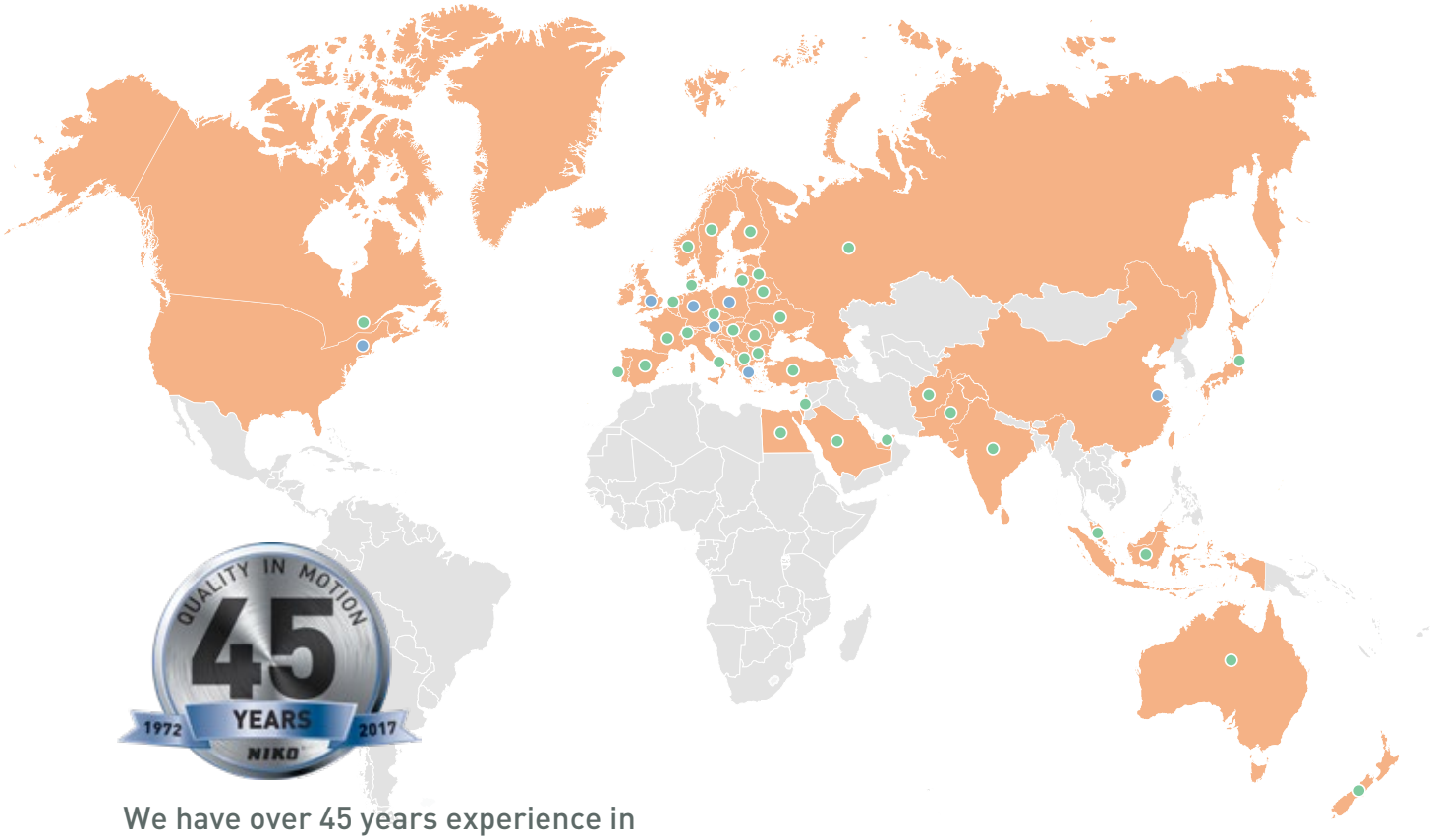
FOR PAINTING LINES

Case study evaluation

www.nikotrack.com

Light Cranes Conveyor systems **Monorails**

Painting Lines **Suspension Tool System**



We have over 45 years experience in producing high quality sliding door fittings and overhead conveyor systems at the right price, with close contact to suppliers and customers and continuous product development.
NIKO Overhead Conveyor System will provide you with the advantage you need for your painting line.

Our guiding principle is:

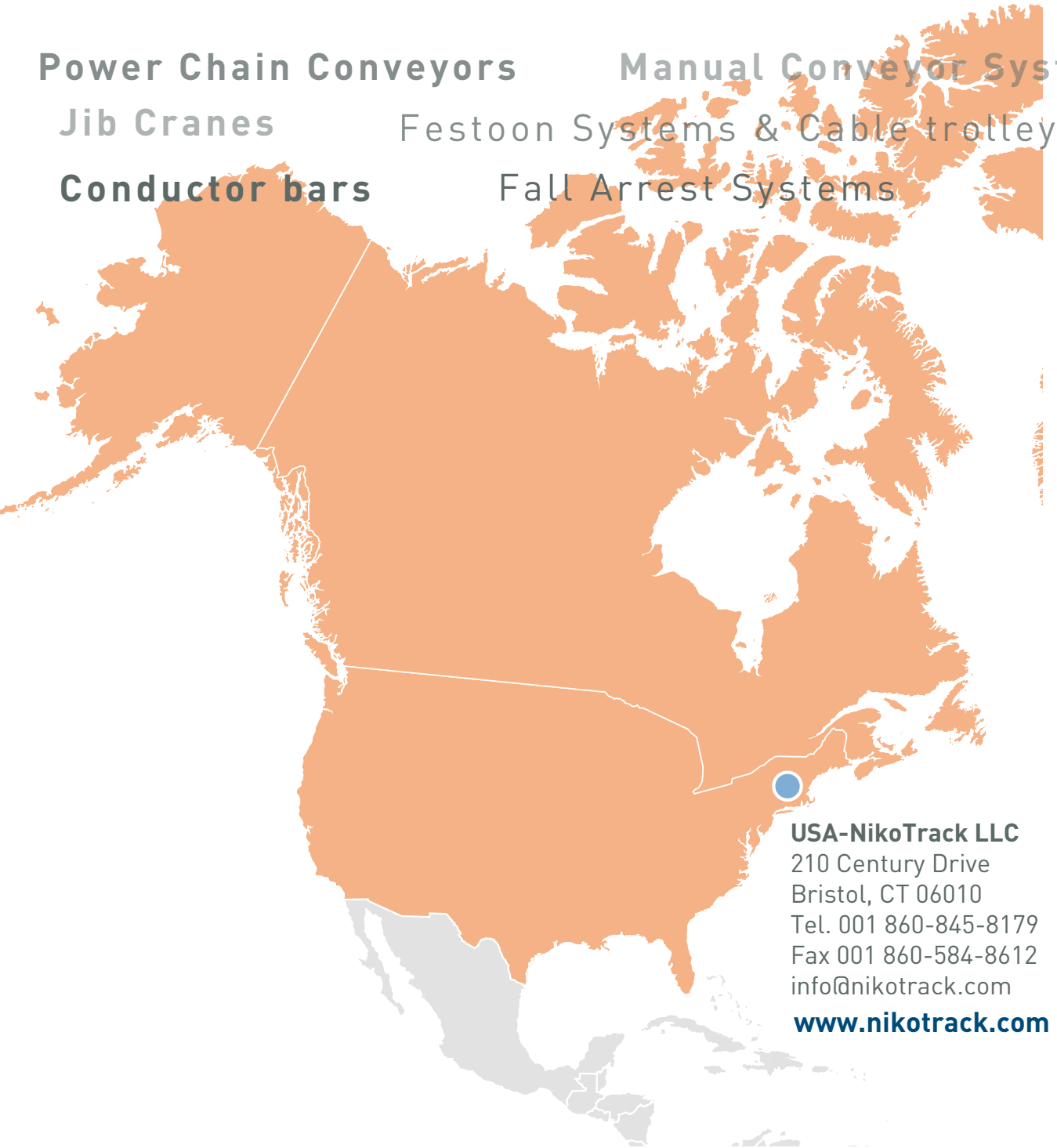
NIKO...Quality in Motion

● NIKO Locations

● NIKO Representatives

Global

LOCATIONS & HEAD OFFICE



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Why buy a NIKO conveyor system?

BENEFITS OF NIKO overhead conveyor systems for painting lines over other type of Conveyors

NIKO Conveyor system		Painting line with forklifts
Less floor space required Niko Overhead Conveyor requires some floor-based support structures but this can be strategically placed at facility edges and corners to minimize their footprint. Monorails run on tracks installed directly into the ceiling and, therefore leave no footprint on the floor at all.	VS	Systems with forklifts create many facility limitations. Bulky ride-on movers generate clutter and restrict floor space because they require wide pathways and intersections to maneuver. Even when they are not in operation, forklifts and pallets with product (near to each process) and ride-on movers take up a large amount of space on the floor and get in the way of the production.
Avoid any re-paint procedure Easy handling loadbars moved by hand, no contact with the painted product. Employee transfers the load hanged on loadbars and drives them throught the conveyor line. The worker touch the product in the loading zone and again after the whole process is finished.	VS	On the contrary, on systems with forklifts, products after painting must be transferred and most of the time are touching each other and paint gets skratched. When employee moves parts from powder paint to oven, most of the time the product get in touch with his body. Products get in contact and might need to be repainted meaning additional cost
Less safety hazards for workers and equipment. Niko Overhead Conveyor reduce physical labor,provide easy moving solution for increased efficiency and reduce injuries caused by improper lifting and falling materials	VS	**Floor-movers can impose safety hazards for workers and equipment.** Forklift operators must be trained and certified to operate the forklifts.
Easier manipulation of products even after exit of products from drying/curing process.		
Varied of products (in size, type and weight) and bigger amount of products to be suspended on loadbar(s) at the same time, thus increase productivity.		
Options of overhead parking zones for products storage before proceeding to any other process.		
Less workers needed to operate an overhead conveyor system compared to forklift systems thus increased productivity and reduce cost compared to Cart system.		
Multi directional options without having to occupy additional workers.		
Applicable in limited spaces.		

Niko power chain conveyor

Niko Systems occupy less space.

Ovens can be build smaller thus save money on equipment, on energy fuels and no big heat lose.

Easier handling of loading and unloading zones since they are free of chain.
With Niko System the customer has the option to create parking zones in different areas like masking or inspection areas.

Niko System costs less.

Easily modified when a customer needs to make an extension.

Safe.
When the system is running you can touch the track without danger.

NIKO enclosed track profile ensures that the bearings are not exposed to the environment therefore cause damage to trolley.

VS

VS

Continuous running automatic power chain conveyor

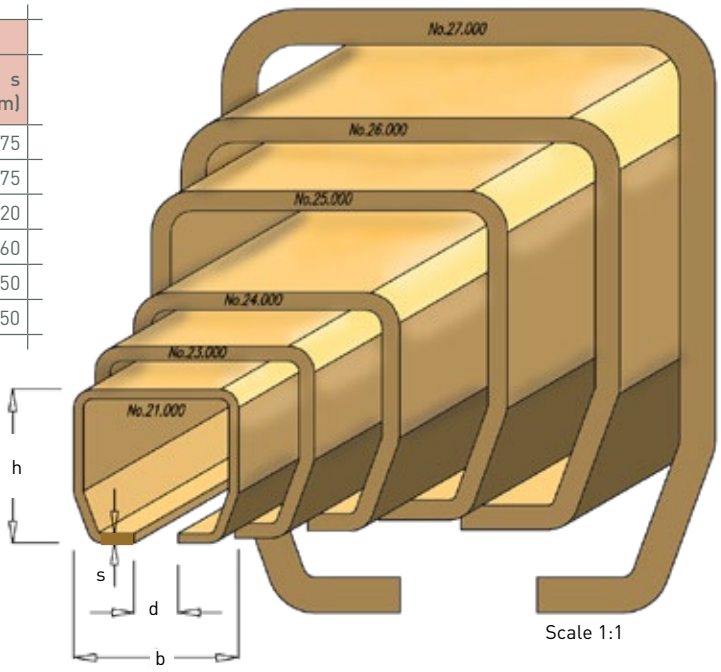
In Continuous Running Automatic Power Chain Conveyors the doors remain always open and that results to serious heat lose and cost increase.

In Continuous Running Automatic Power Chain Conveyors it is difficult to load/unload products since the system is in continuous movement. Theremore, it is not possible to make parking zones to load/unload products or buffer zones to mask the technological holes on products before painting and after painting.

NIKO Track Profiles

Our wide range of 6 Track profile sizes can accommodate loads up to 2.000 kg. The NIKO enclosed track tapered design allows correct alignment of the trolleys and reduces the possibility of dust build up. This ensures the smooth running of the trolleys and the long life of the conveyor system. NIKO conveyors require only 1-4% force of the weight being lifted in order to operate. For use in special environments we can also offer NIKO tracks & components in stainless steel grade 304 and 316.

NIKO Profile No.	Dimensions			
	h (mm)	b (mm)	d (mm)	s (mm)
21.000	28	30	8	1,75
23.000	35,00	40,00	11,00	2,75
24.000	43,50	48,50	15,00	3,20
25.000	60,00	65,00	18,00	3,60
26.000	75,00	80,00	22,00	4,50
27.000	110,00	90,00	25,00	6,50



PAINTING LINE - EXAMPLE 1

NIKO power chain conveyor system with swivel switches

Key advantages:

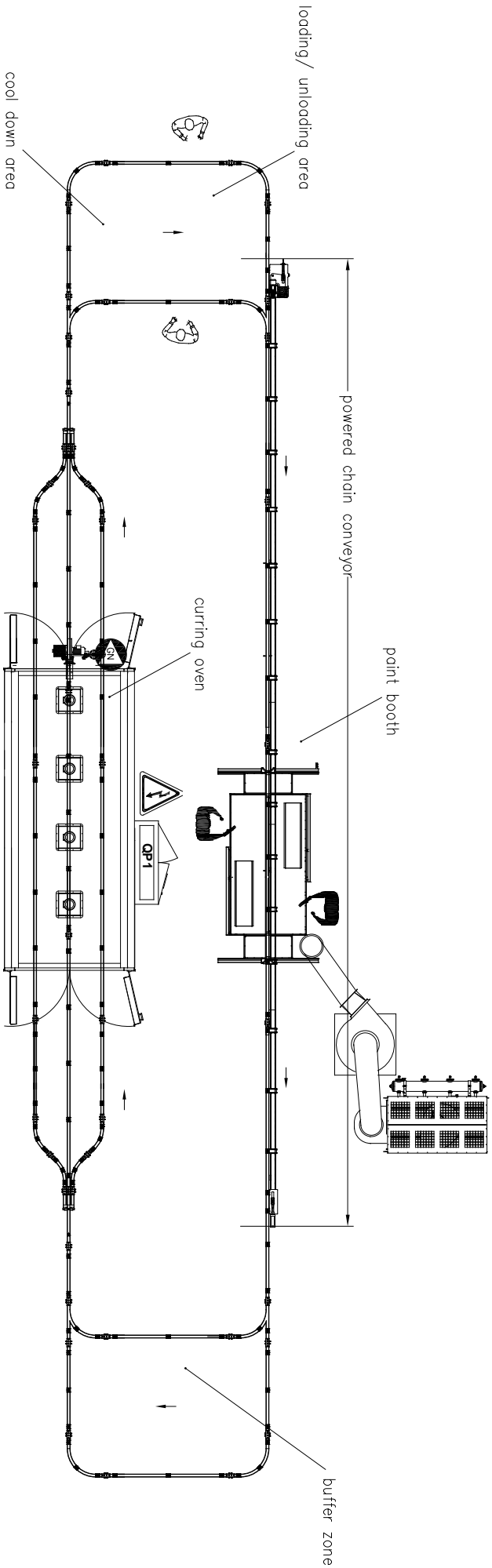
High productivity achieved utilising mechanically automatic switches

The best value for money solution

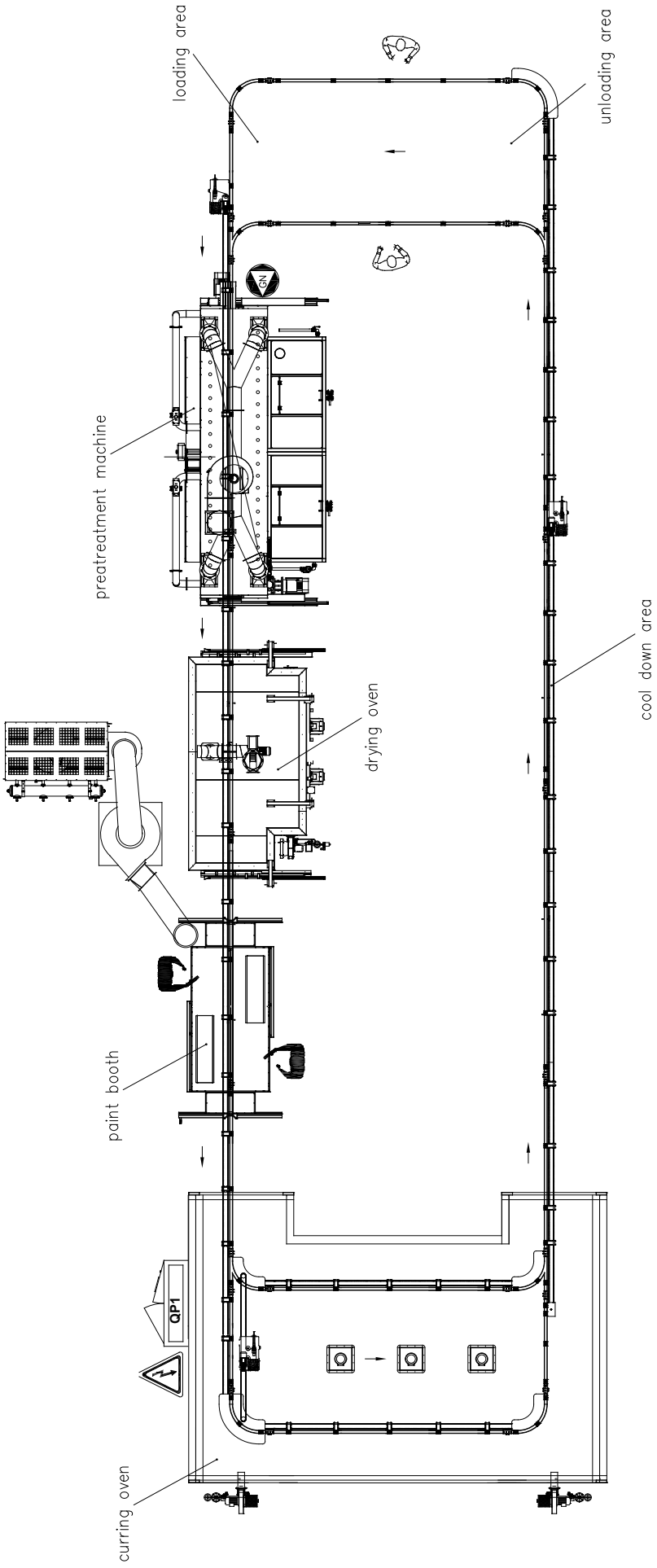
Power side transfer through the painting booth

Optimal space utilization inside the oven

Spacious parking areas for the flight bars



NIKO power chain conveyor



Key advantages:

Less labor cost

Automatic flight bar transportation in consecutive stages of production process

Increased production in the curring oven (parallel movement of flight bars into oven)

Power side transfer except loading/unloading area

PAINTING LINE - EXAMPLE 3

Completeley powered NIKO conveyor system

Key advantages:

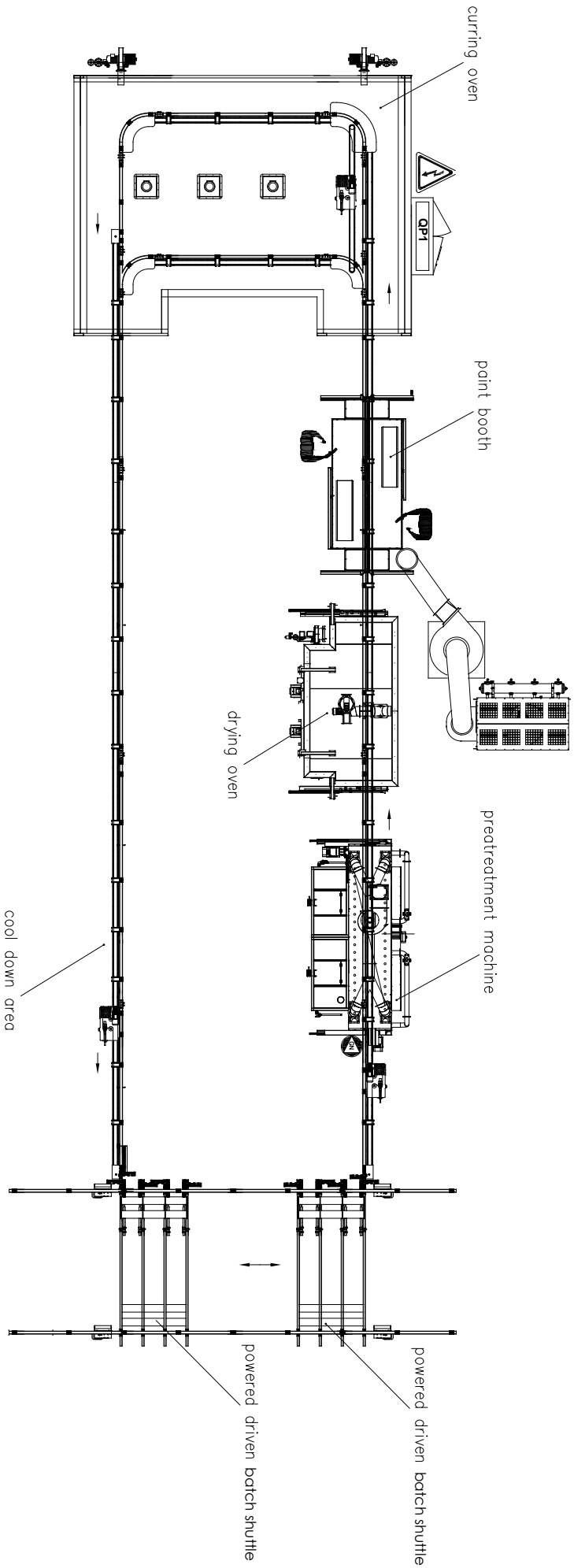
Completely powered system with power chain conveyor and batch shuttle with power driven trolley

High productivity

Less labor cost

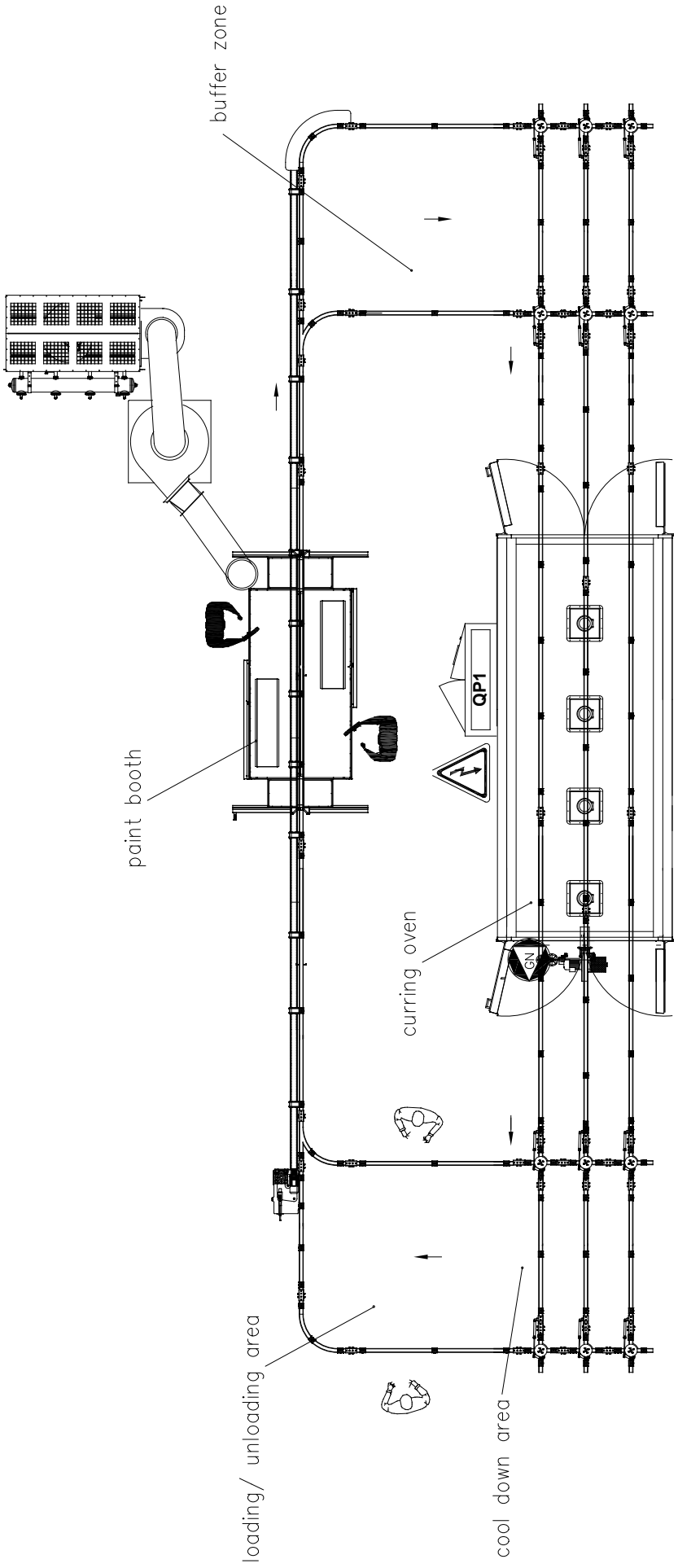
Automatic loading/unloading of flight bars in batch shuttle

Automatic connection between batch shuttle lines and conveyor system



NIKO PAINTING LINES - EXAMPLES

NIKO power chain conveyor with pneumatic turntables



Key advantages:

Minimum space requirements utilizing pneumatic turntables

Power side transfer through the paint booth

Value for money solution

Optimal space utilization inside the oven

PAINTING LINE - EXAMPLE 5

NIKO conveyor systems with batch shuttle and power chain in the painting booth

Key advantages:

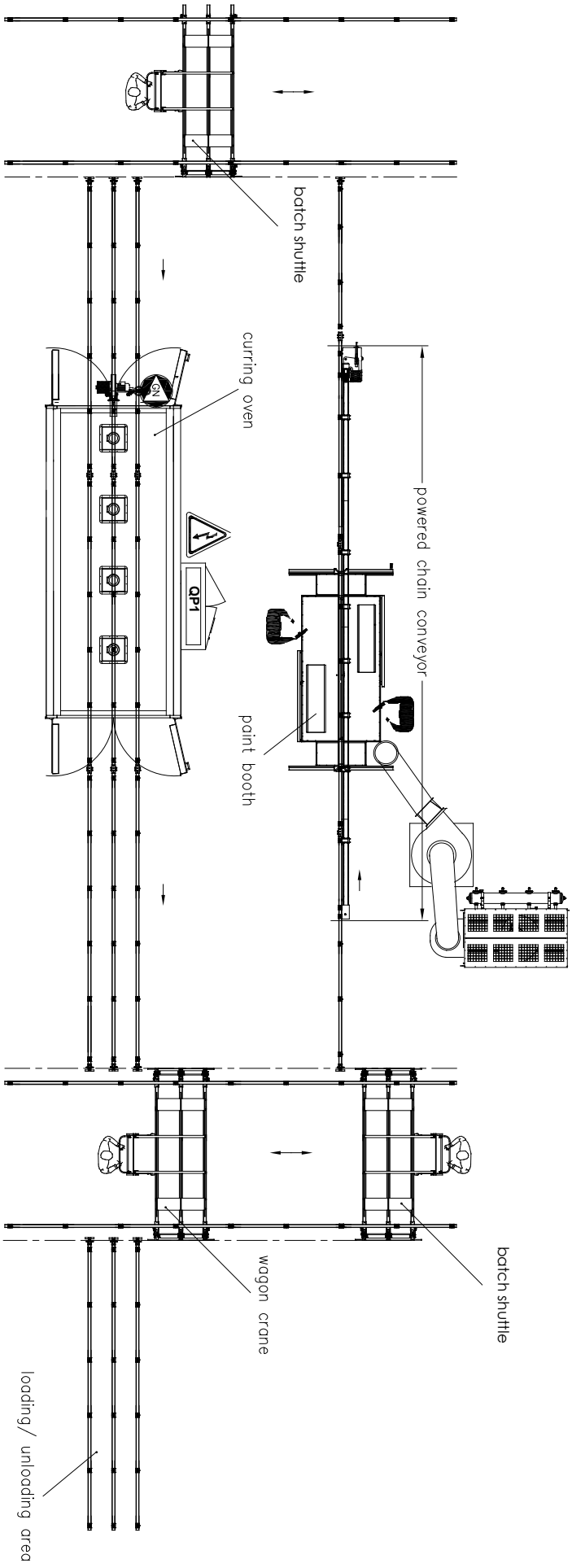
Low cost solution

Power side transfer through the paint booth

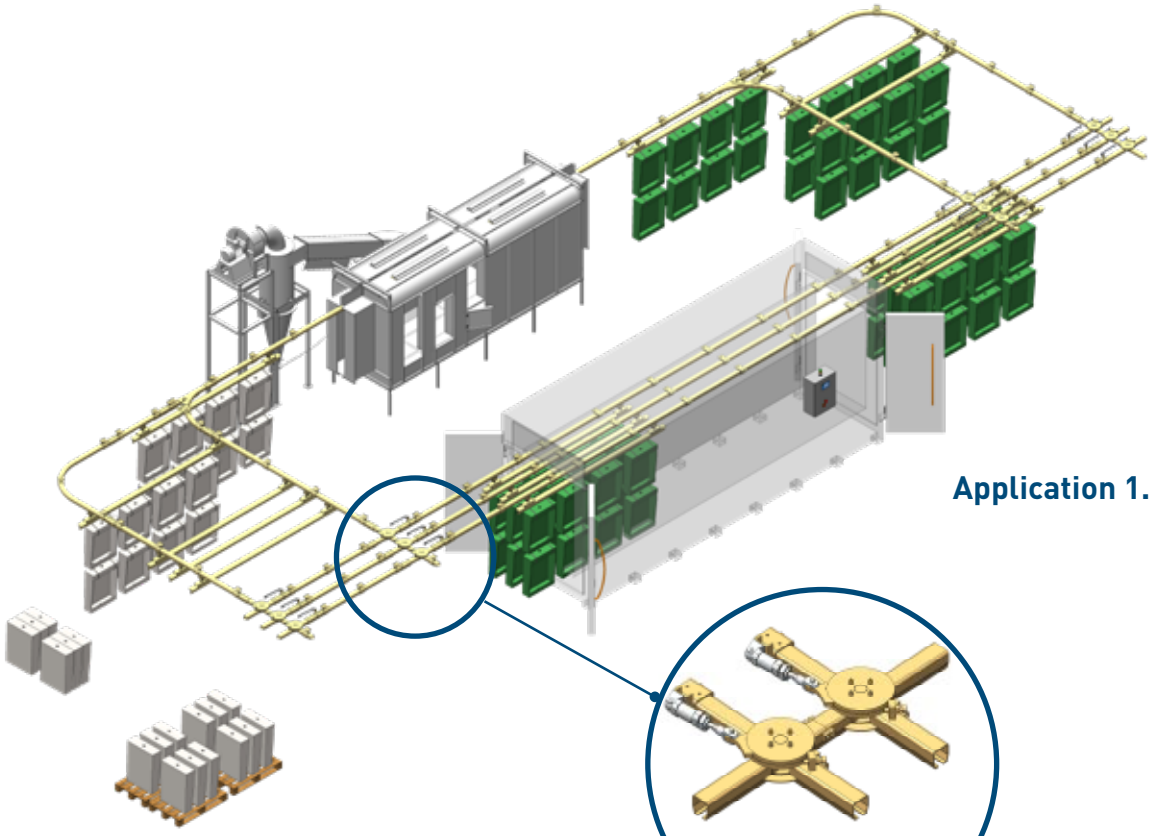
Optimal space utilization inside the oven

Easier operation in pushing/ pulling loads

Ergonomically designed batch shuttle

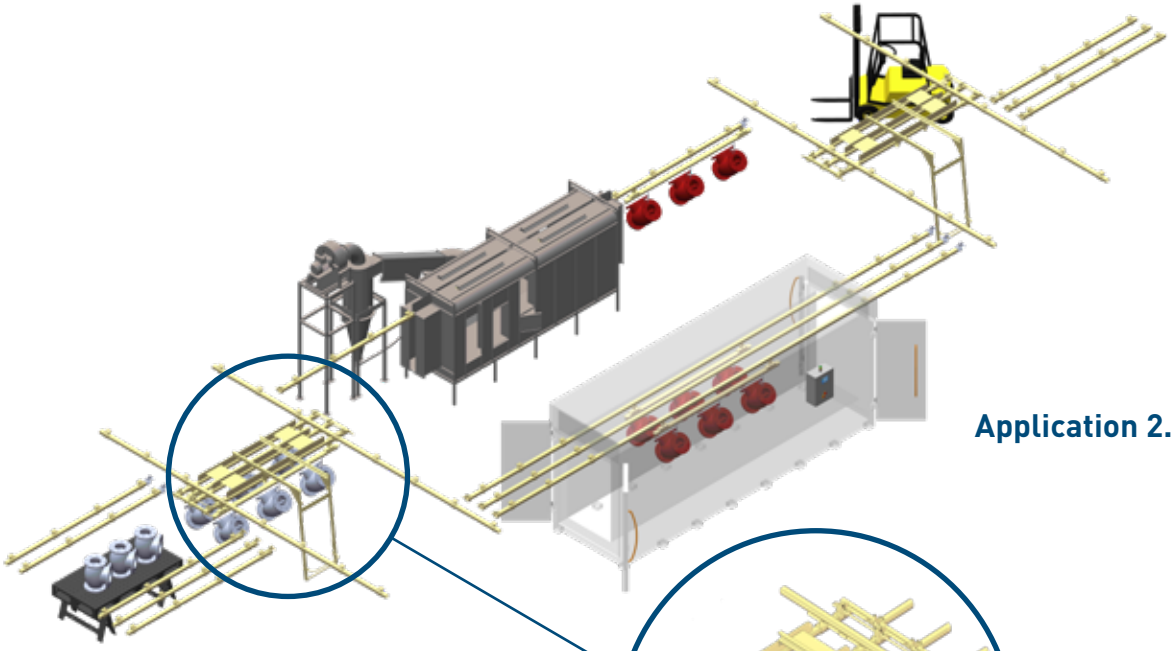


NIKO
Manual Conveyors

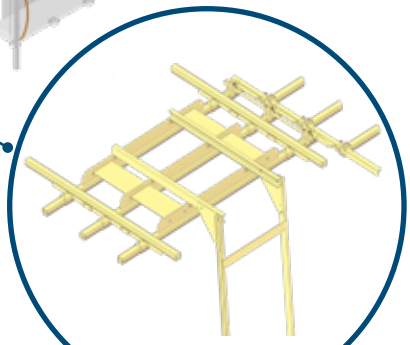


Application 1.

.A44 Pneumatic
Turn Table Switch

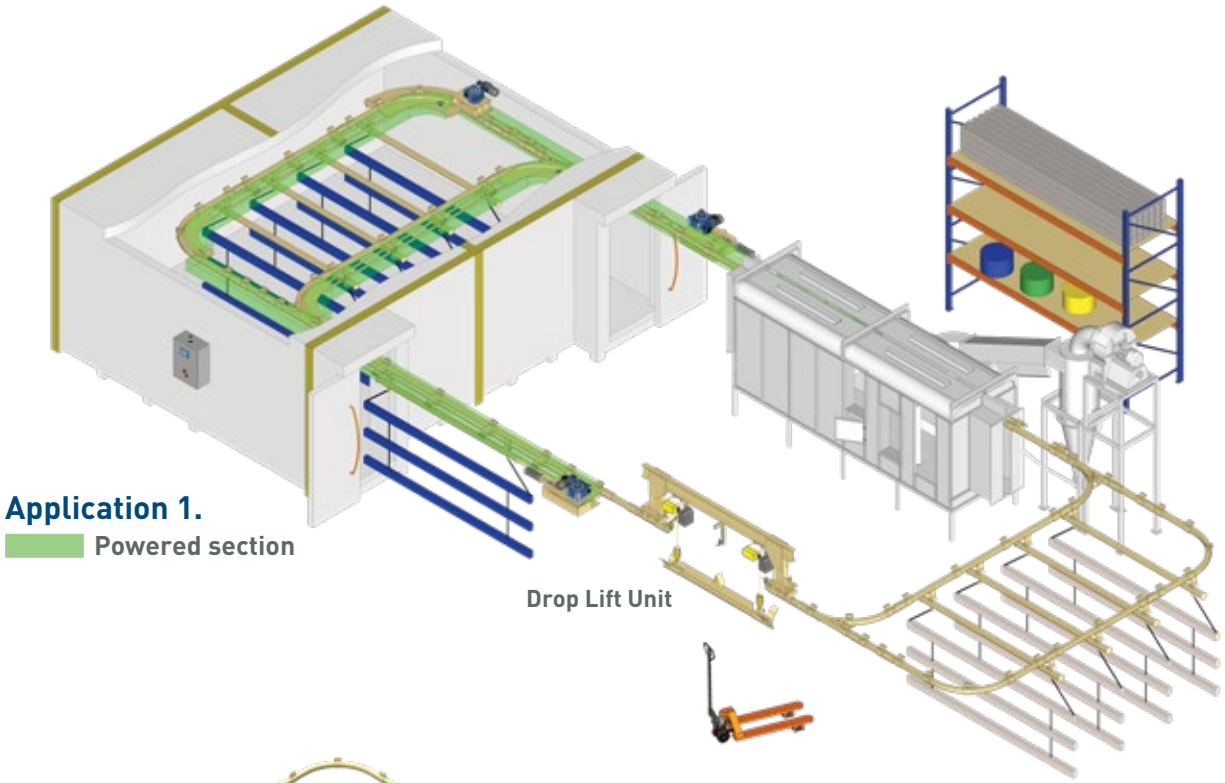


Application 2.



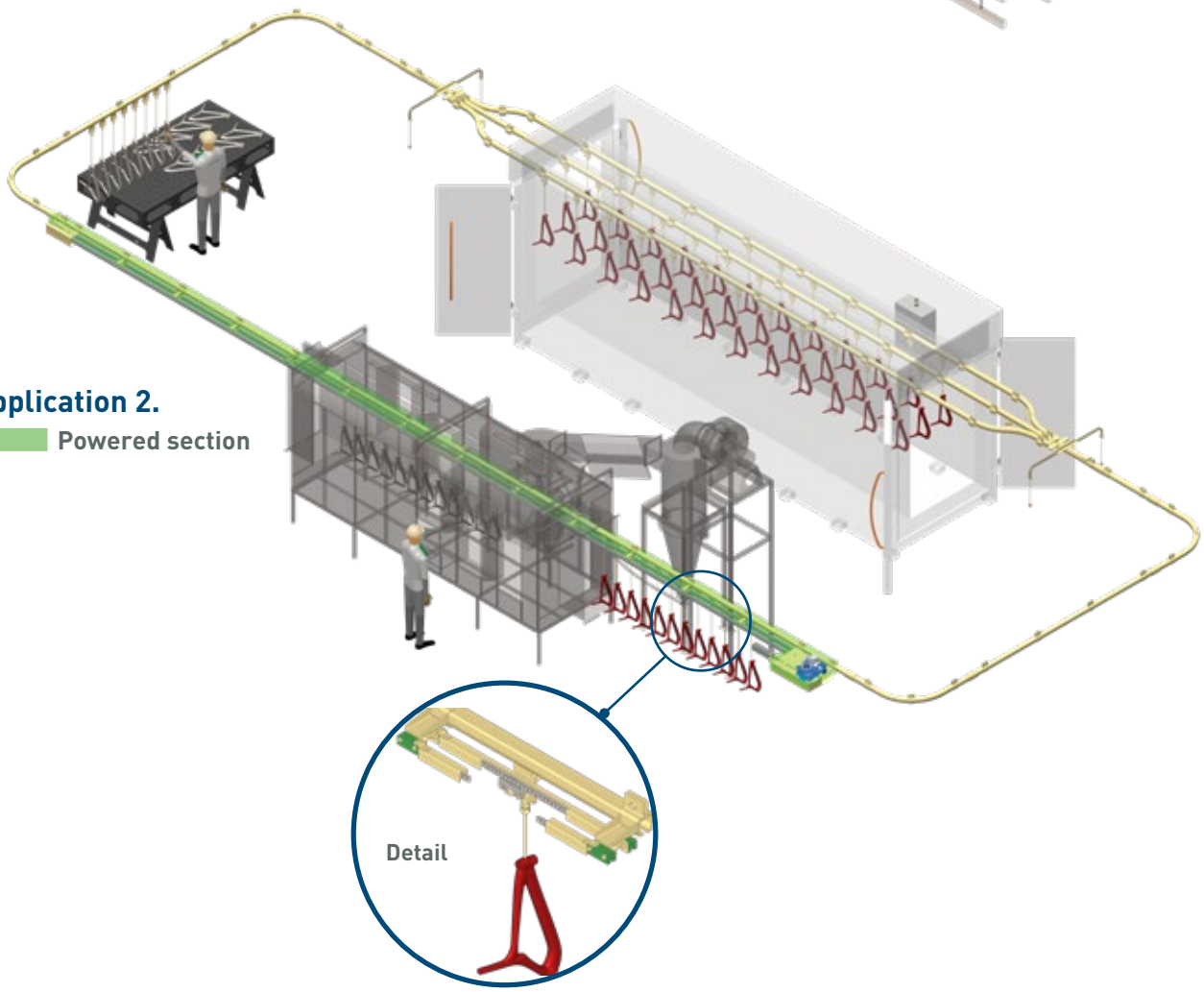
Batch Shuttle

NIKO
Power Chain Conveyors



Application 1.

Powered section



Application 2.

Powered section

Evaluation of NIKO conveyor systems: 3 case studies

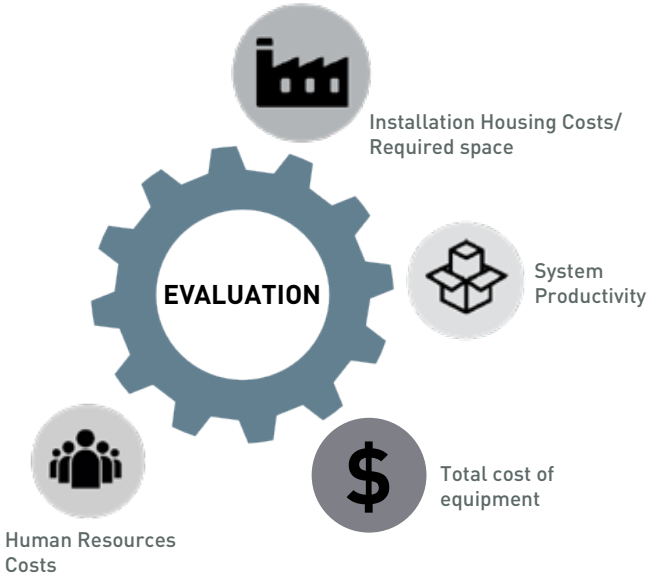
The purpose of this case study is the evaluation of the power paint coating installations provided by the Greek company NIKO.
NIKO company systems will be analysed and compared with systems commonly used in the industry, by highlighting the main parameters making the customer investment advantageous. The evaluation will be based on the following criteria:

A. System Productivity
The number of products painted by the painting line per operation day.

B. Human resources costs
A minimum number of employees is required for the correct operation of the system. The average cost per operation day (2 shifts) and per operator, has been evaluated at 161,5 $.

C. Installation Housing Costs*
The industrial space required for the installation of the system. The cost per square meter of the system is evaluated at 3,5$ and the operation days of the system at 22 per month.

D. Total cost of equipment*
The total cost of equipment is reffered to the following costs: curring oven, painting booth, drying oven, washing room and the cost of the conveyor system.



Process

Loading Procedure:
The components are loaded onto the conveyor system of the painting line.

Cleaning Procedure - Preparation:
The components are chemically cleaned for the removal of possible corrosion, lubricants and any residues of previous processing. The cleaning procedure is essential prior to the powder paint coating.

Drying Procedure: Following the chemical cleaning and the surface activation of the material, the painting line continues with the drying of the components. The duration of the drying procedure is 7 minutes at an oven temperature of 80°C.

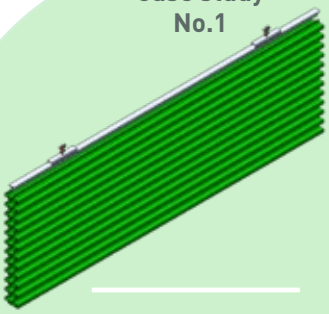
Powder Paint Coating Procedure: The powder paint is applied to metal parts (aluminium profiles, metal frames, casting parts etc.) using special spray guns. The spray gun positively charges the powder particles, causing repulsion between them, resulting in the even spreading of paint using compressed air. The parts are earthed, attracting the powder particles and ensuring an more even coat of paint, in comparison to wet paint methods.

Curing Procedure: The painting line continues with the hardening of the powder paint coat. The components are exposed to an oven temperature of 180°-200°C, for approximately 20 minutes, allowing the powder paint to develop into an even dry protective film.

Unloading Procedure: The components are removed from the curing oven, are unloaded from the conveyor system and are made available for quality control and packaging.

** For this version the costs have been removed from comparisons in case studies 1,3.*

Case study
No.1

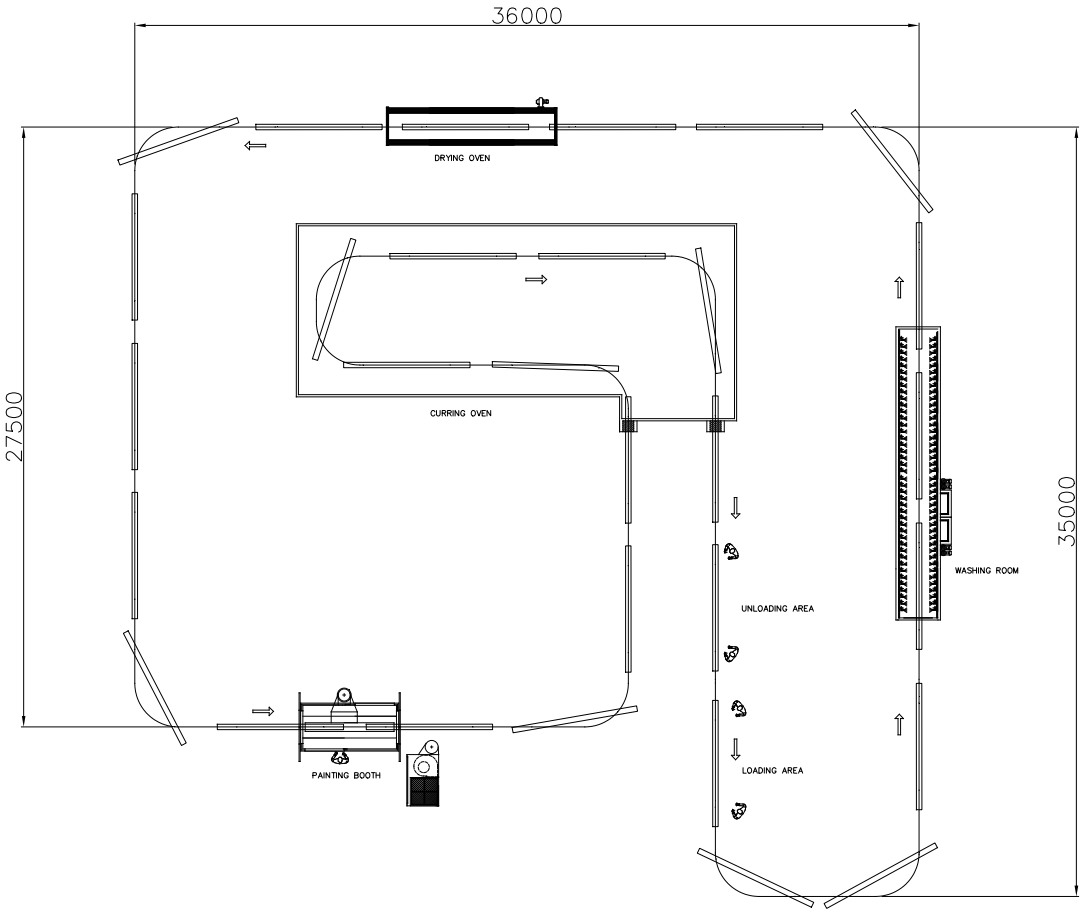


Product: Aluminium Profiles
Load per flight bar: 160kg
Envelope dimension of product:
L 6000mm H2000mm W300mm

A TYPICAL SOLUTION

Continuous running conveyor

ALUMINIUM PROFILES



TYPICAL SOLUTION

Required space:
11.850ft²

TYPICAL SOLUTION

Operators: 5

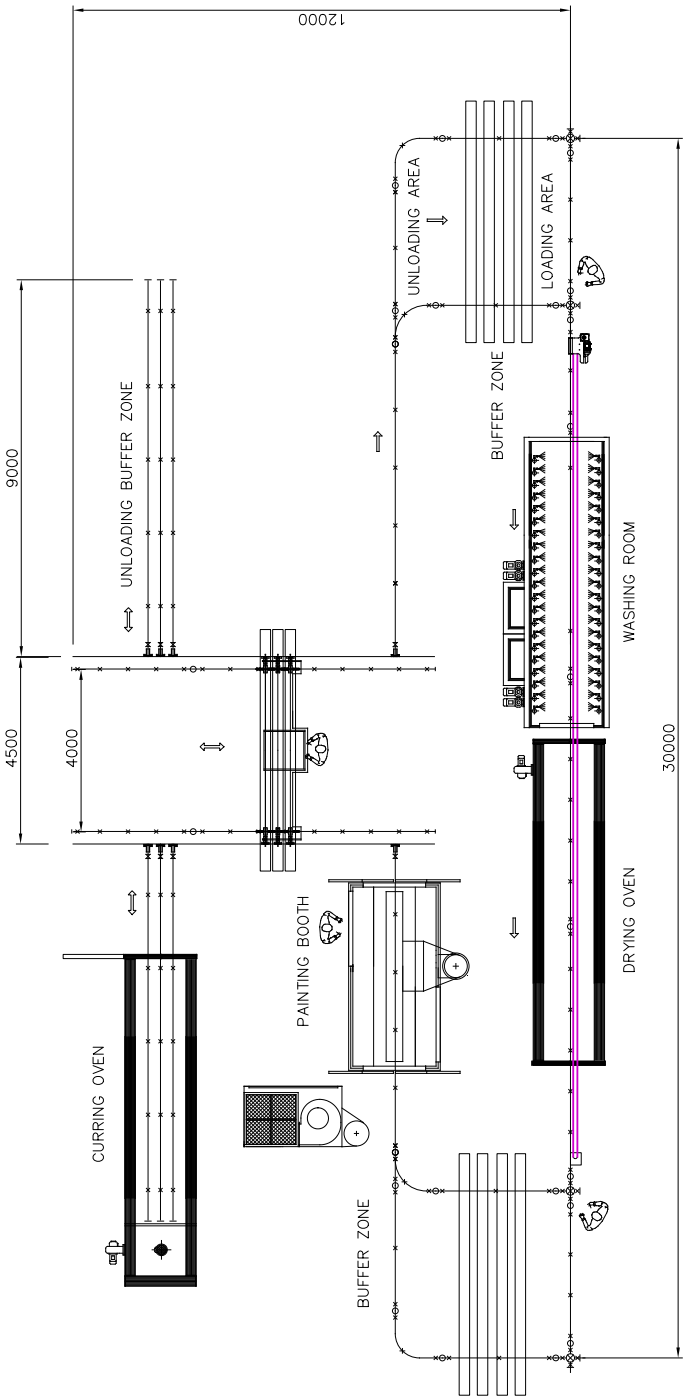
TYPICAL SOLUTION

Painting parts / day:
650 pieces

NIKO conveyor systems with batch shuttle and power chain conveyor

Track Profile 24.000

Power chain section



NIKO Conveyor is considerably more efficient providing:

Required space: 3.875ft²

Operators: 4

Painting parts / day: 860 pieces

68% Less industrial space cost

20% Less labor cost

24% Higher productivity

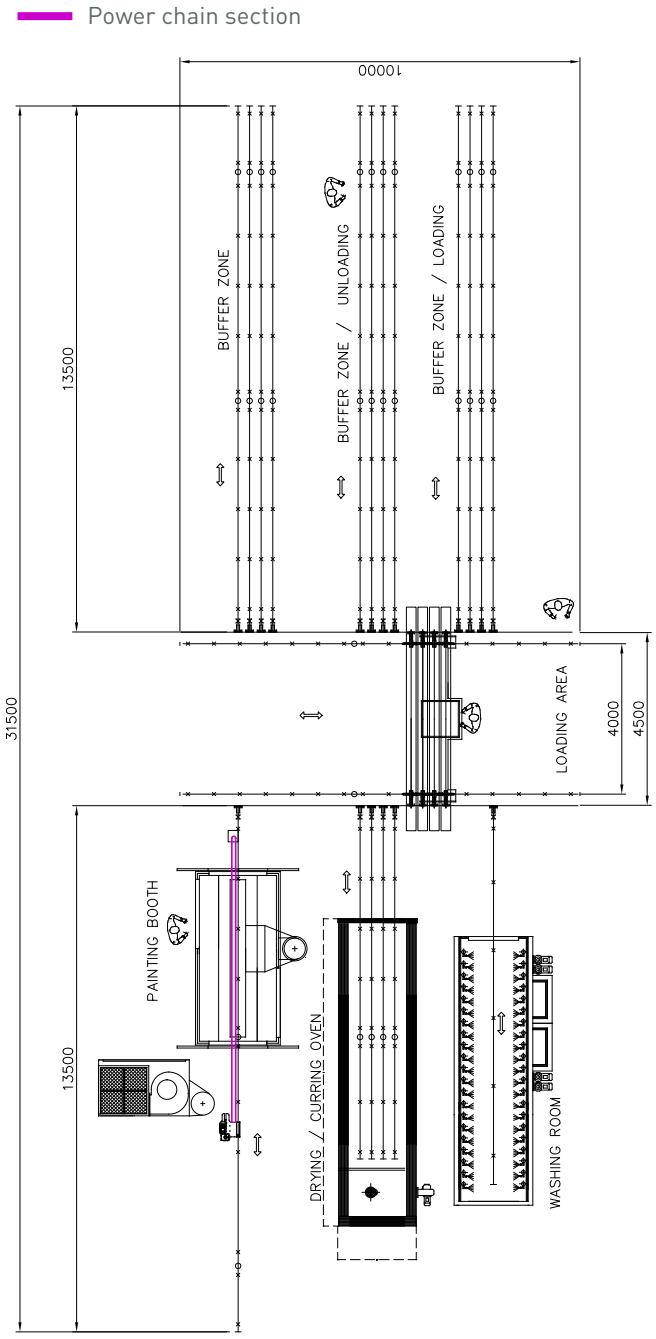
ALUMINIUM PROFILES

NIKO SOLUTION 2

NIKO conveyor systems with batch shuttle and power chain conveyor

Track Profile 24.000

NIKO Conveyor is considerably more efficient providing:



70%
Less industrial space cost

20%
Less labor cost

25%
Higher productivity

Required space: 3.390ft²

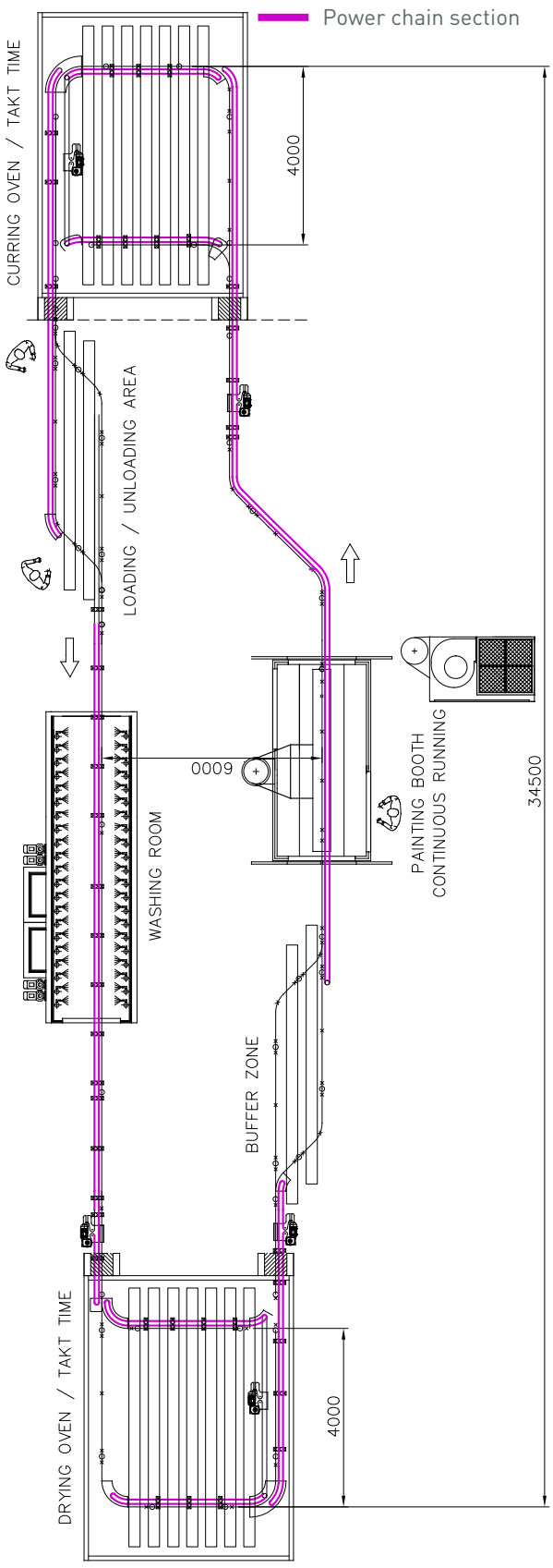
Operators: 4

Painting parts / day: 880 pieces

ALUMINIUM PROFILES

NIKO power chain conveyors

Track Profile 24.000



NIKO Conveyor is considerably more efficient providing:

Required space: 4.305ft²

Operators: 3

Painting parts / day: 1.200 pieces

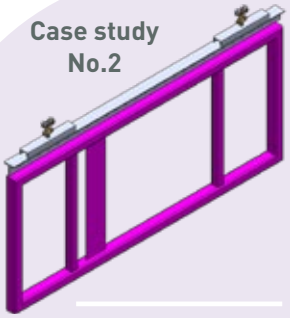
63% Less industrial space cost

40% Less labor cost

45% Higher productivity

ALUMINIUM PROFILES

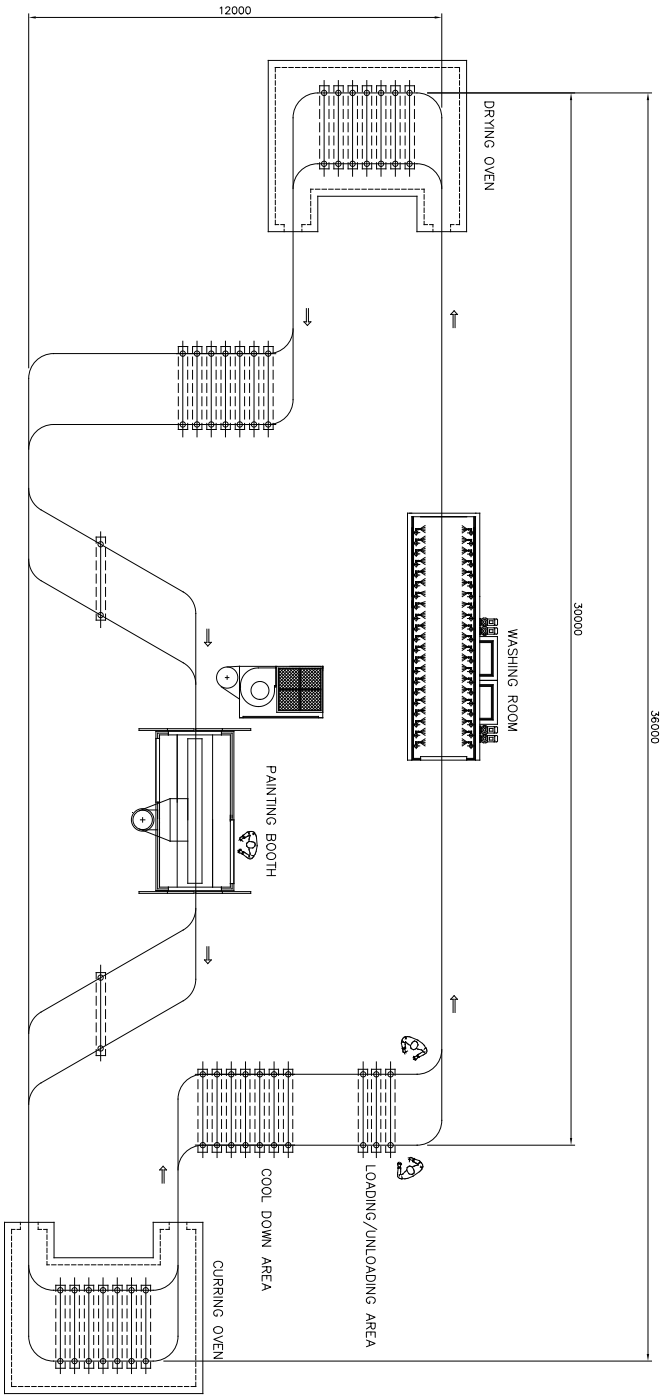
Case study
No.2



Product: Door frames
Load per flight bar: 400kg
Envelope dimension of product:
L 3000mm H1300mm W150mm

A TYPICAL SOLUTION

P & F
conveyor system



TYPICAL SOLUTION

Total cost of conveyor:
138.500$

TYPICAL SOLUTION

Total cost of equipment:
202.000$

TYPICAL SOLUTION

Required space:
5.490ft²

TYPICAL SOLUTION

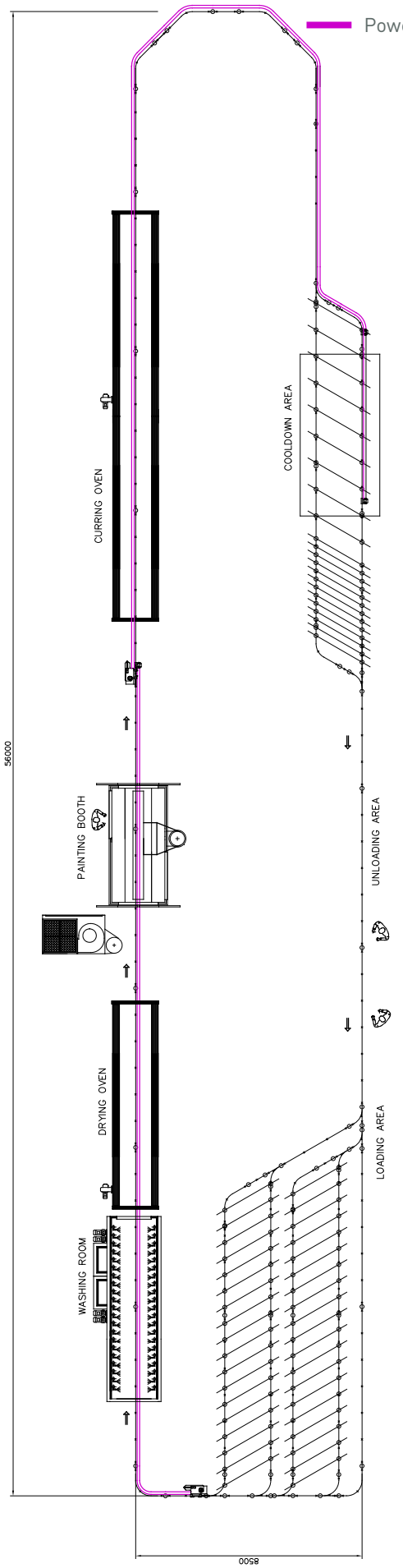
Operators: 3

TYPICAL SOLUTION

Painting parts / day:
185 pieces

NIKO power chain conveyors

Track Profile 25.000



Total cost of conveyor:
75.000$

Total cost of equipment:
144.000$

Required space:
6.245ft²

Operators: 3

Painting parts / day:
160 pieces

NIKO Conveyor
is considerably more
profitable providing:

45%
Less
conveyor cost

28%
Less
equipment cost

DOOR FRAMES

NIKO SOLUTION 2

NIKO conveyor systems with batch shuttle

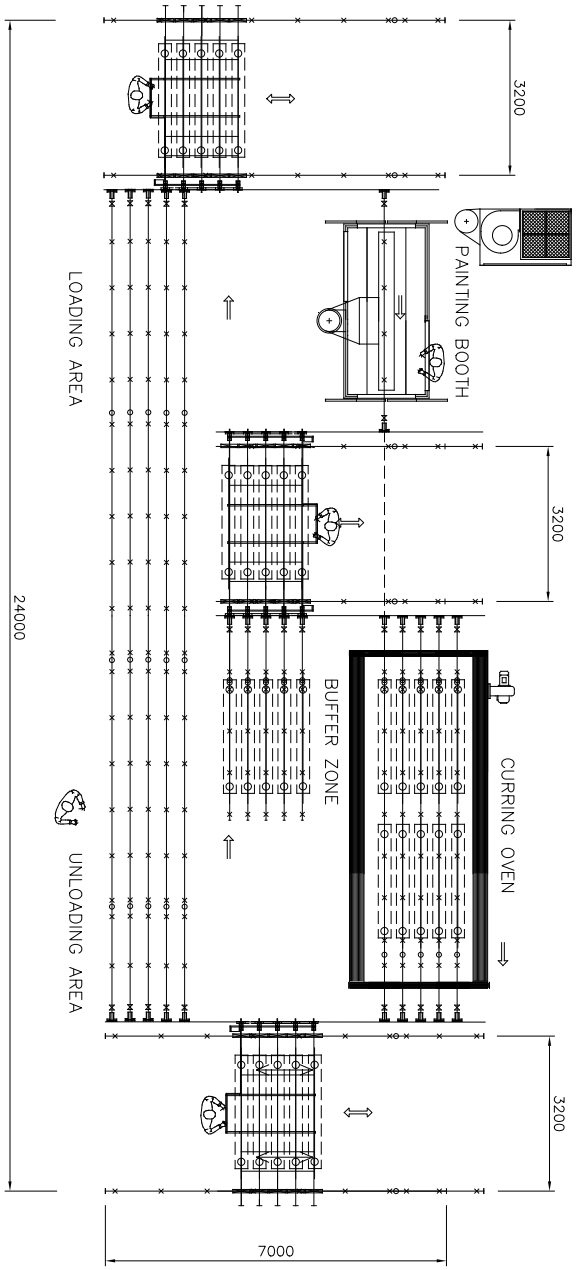
Track Profile 25.000

NIKO Conveyor is considerably more profitable providing:

80%
Less conveyor cost

77%
Less equipment cost

60%
Less industrial space cost



Total cost of conveyor: 25.500$

Total cost of equipment: 46.200$

Required space: 2.150ft²

Operators: 5

Painting parts / day: 90 pieces

NIKO conveyor systems with power chain conveyor

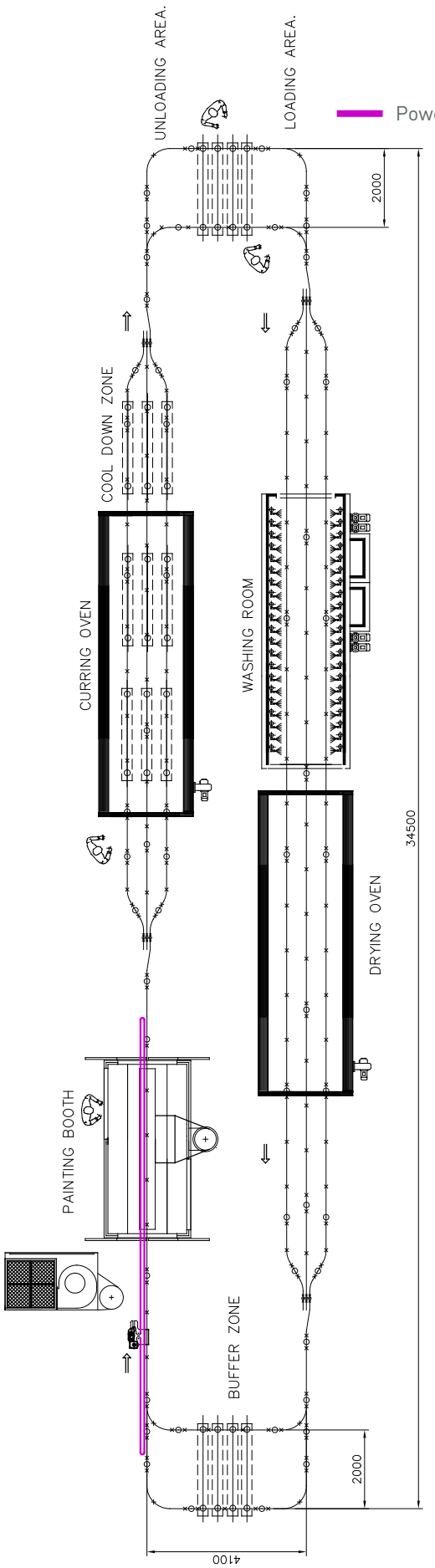
Total cost of conveyor:
47.500$

Total cost of equipment:
121.000$

Required space:
3.010ft²

Operators: 4

Painting parts / day:
110 pieces



Track Profile 25.000

NIKO Conveyor is considerably more profitable providing:

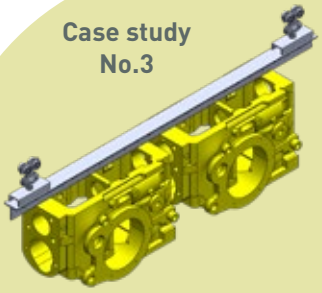
65% Less conveyor cost

40% Less equipment cost

45% less industrial space cost

DOOR FRAMES

Case study
No.3

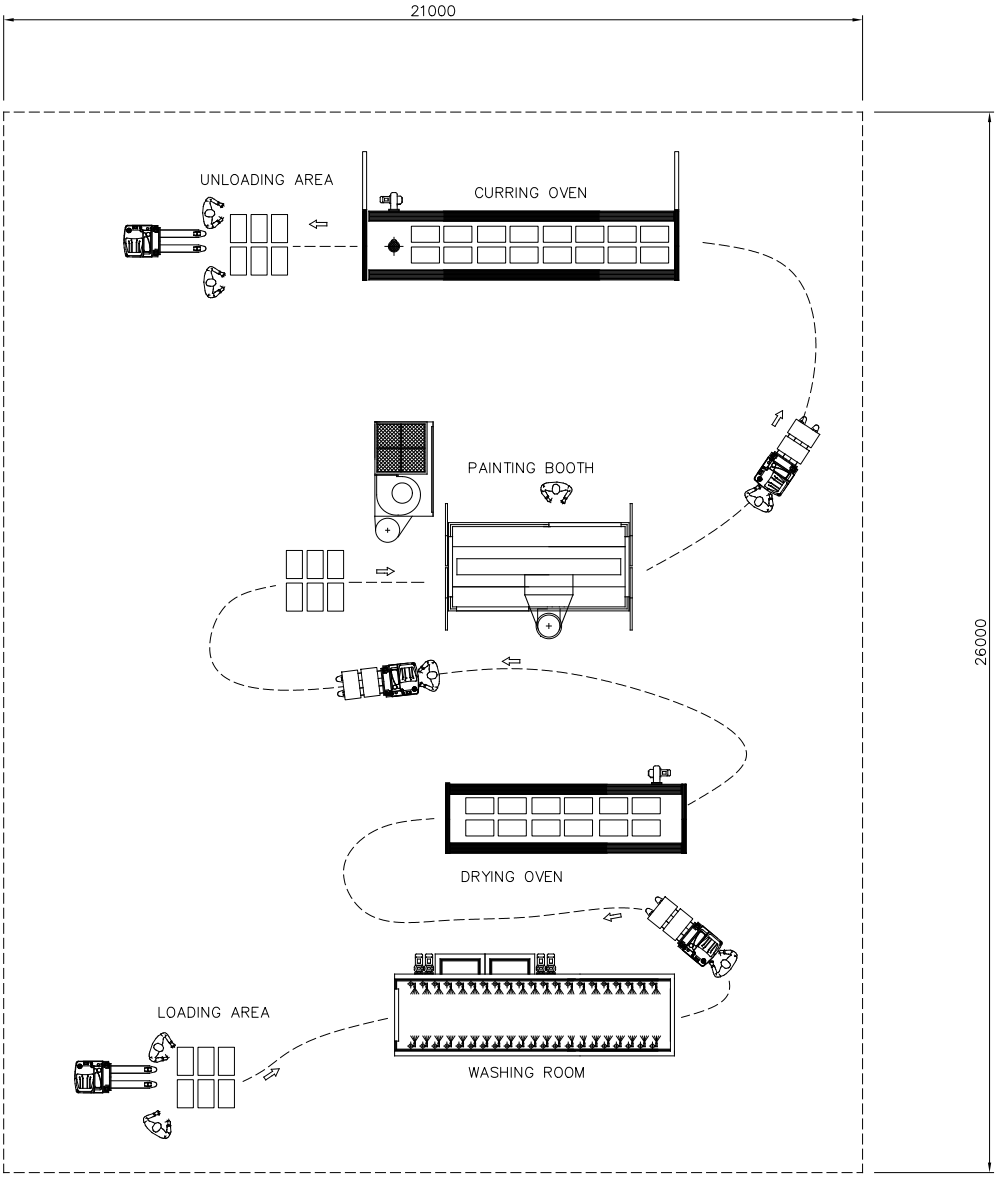


Product: Casting parts
Load per flight bar: 800kg
Envelope dimension of product:
L 3000mm H900mm W600mm

A TYPICAL SOLUTION

Painting line with forklift

CASTING PARTS



TYPICAL SOLUTION

Required space:
5.810ft²

TYPICAL SOLUTION

Operators: 8

TYPICAL SOLUTION

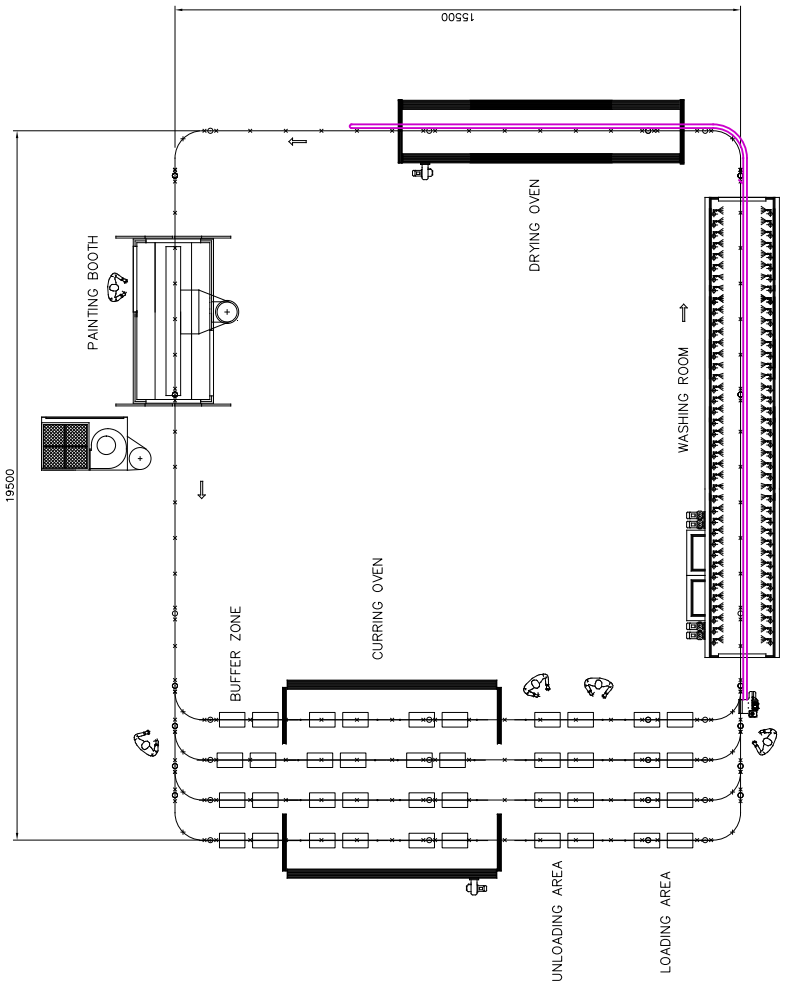
Painting parts / day:
85 pieces

NIKO conveyor systems with power chain conveyor

Track Profile 26.000

NIKO Conveyor is considerably more efficient providing:

Power chain section



Required space: 3.330ft²

Operators: 5

Painting parts / day: 170 pieces

40% less industrial space cost

37% Less labor cost

50% higher productivity

CASTING PARTS

NIKO SOLUTION 2

NIKO conveyor systems with batch shuttle and power chain conveyor

Track Profile 26.000

NIKO Conveyor is considerably more efficient providing:

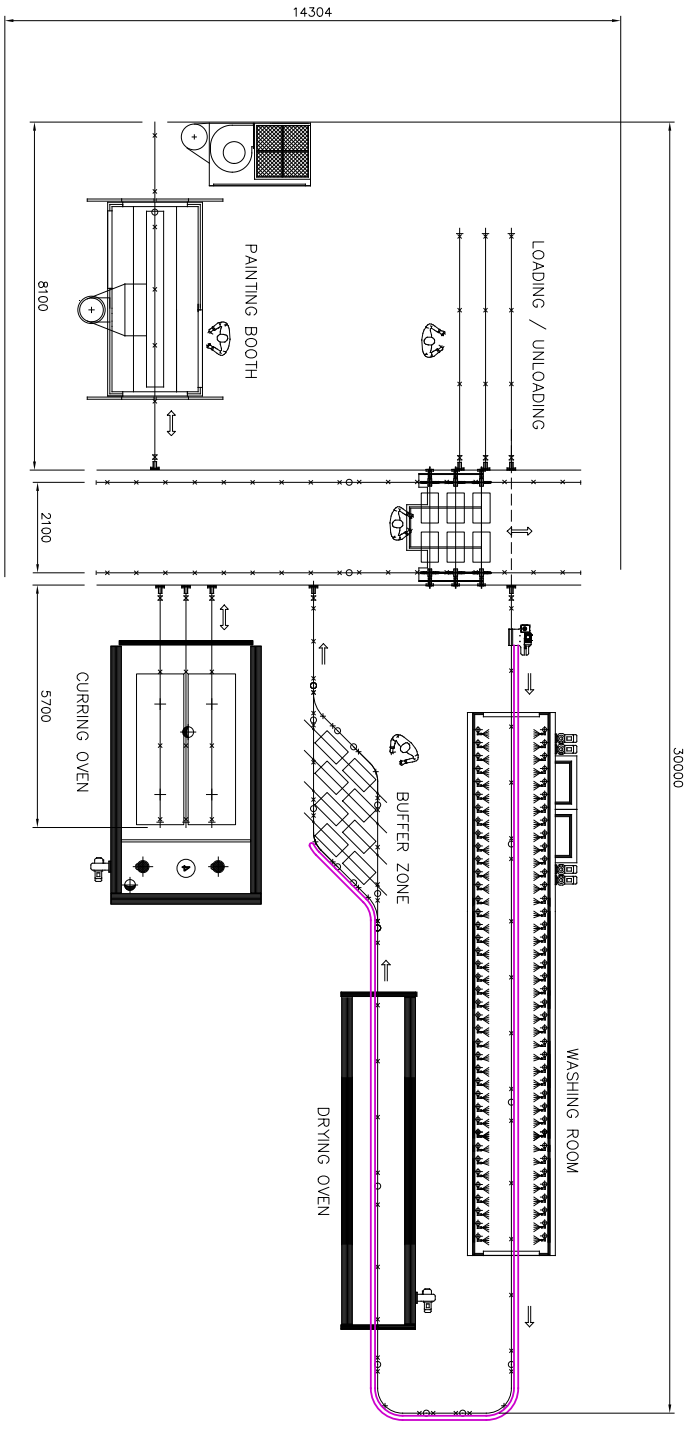
CASTING PARTS

25%
Less industrial space cost

50%
Less labor cost

60%
Higher productivity

Power chain section



Required space: 4.305ft²

Operators: 4

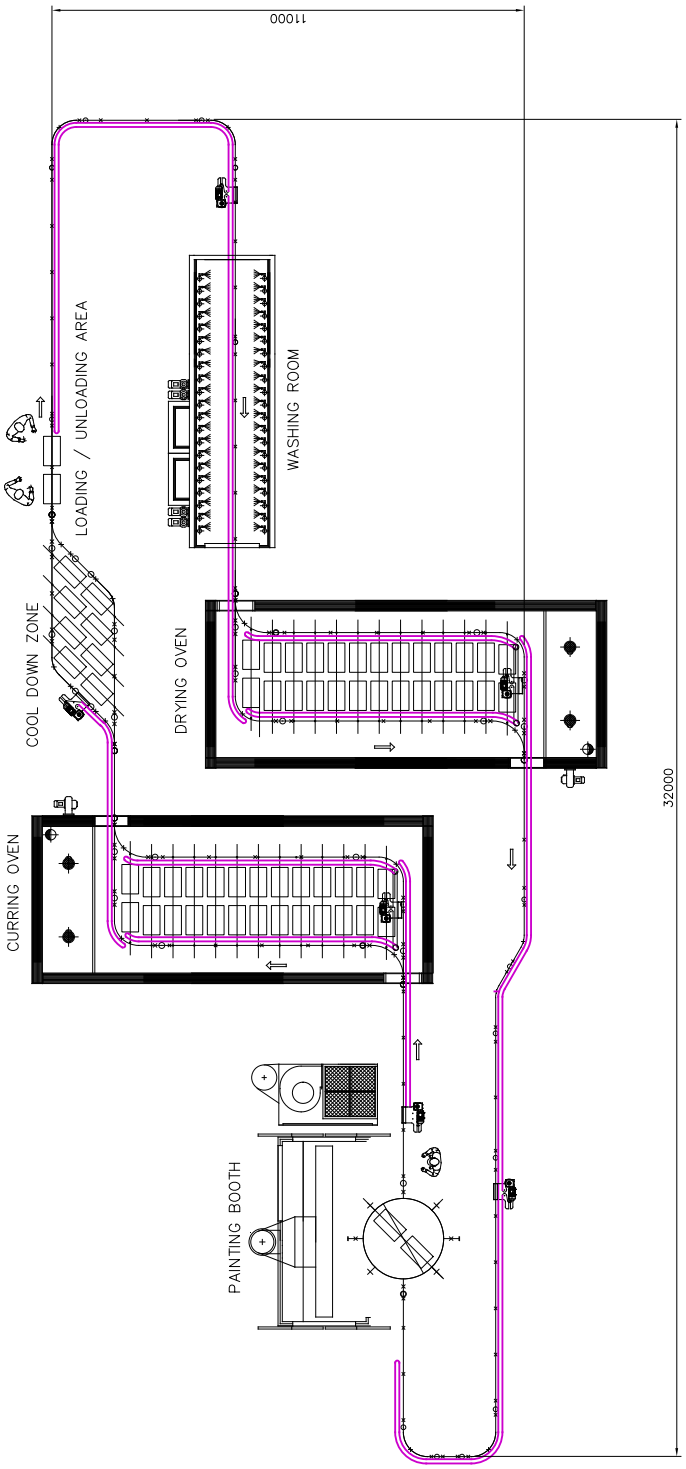
Painting parts / day: 210 pieces

NIKO power chain conveyors

Track Profile 26.000

NIKO Conveyor is considerably more efficient providing:

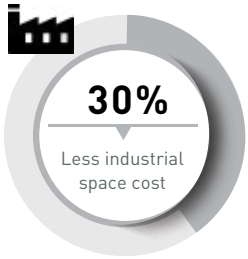
Power chain section



Required space: 3.980ft²

Operators: 3

Painting parts / day: 620 pieces



CASTING PARTS

NOTES


Turning your
business needs
in projects that
deliver the most.

NIKO...Quality in Motion

www.nikotrack.com

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- HEAVY DUTY SLIDING DOOR HARDWARE
- CONVEYOR SYSTEMS
- LIGHT CRANES
- CABLE TROLLEYS, FESTOON SYSTEMS & CONDUCTOR BARS
- PERSONAL FALL ARREST SYSTEMS (EN 795)
- ACCESSORIES FOR GATES AND DOORS