



Material Flow Solutions MultiLine



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Material Flow Solutions

Production efficiency depends on efficient material handling

On assembly lines, efficient material handling is crucial to productivity. Since transportation does not involve processing the item, transport times should be minimized. With properly planned material flows, buffer sizes are minimized and thus the WIP (work in process) value reduced.

A properly planned manual transfer system is the ultimate solution for expanding companies, companies that need more capacity from the same floor space, companies that need better production organization or shorter changeover times, and those planning completely new facilities.

Using our extensive experience of designing material handling systems for a variety of industries, together with the client we will find the optimal solution suitable for its production space, phases and future prospects. Transfer units together with flow-through shelving solutions, combined with workstations with an extensive range of accessories, constitute comprehensive elements enabling excellent productivity.



The packing and shipment of products forms an important part of the industrial process. Operation is often automated as production volumes soar. By this stage, all of the required tasks and processes have already been properly designed, and all that is needed is a new, compact, space-saving transfer system. Standard modules are easy to integrate with existing packing equipment, keeping investment costs low.

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Transfer systems used in **mechanical assembly** often require durable components and sturdy structures because of heavy items and a demanding environment. Since dust, lubricants and other dirt lurk in the working environment, the equipment used must be properly tested and reliable under all circumstances. When workstations are well-planned and well-equipped, workflow becomes more effective and production is better organized, ensuring improved productivity.

Logistics assembly centers focus on warehousing, intake and outbound logistics and the administrative services in between. Transfer systems are required in support either of the final assembly or shipment. Since the size and weight of the items varies a great deal, the construction must be modular, easy to update and rapidly adjustable. Almost without exception, we can provide a low investment turnkey solution for such assembly centers, including any technical support required.



The **electronics assembly** industry is characterized by a large number of small, light components, requiring accurate, precise handling, precisely planned processes and tasks, and a short product lifecycle. Therefore workstations must be well organized and ergonomic. Product testing is often integrated with an electronics assembly line, so the transfer lines must meet ESD standards. The electronic products have a short lifecycle so production investments must also have a short payback time.

Modular structure helps during production changes

Changeover times are minimized with modular assembly lines e.g. when implementing a new configuration or completely new product. Furthermore, a manual transfer system offers a more flexible and cost-efficient solution than automated assembly systems. Product lifecycles are constantly shortening and production lines must adapt quickly and easily, often resulting in layout changes. This is especially true of subcontracting companies, whose future depends on flexible capacity, production turnaround times and adaptability to existing production systems, e.g. the implementation of lean manufacturing.



MultiLine Concept

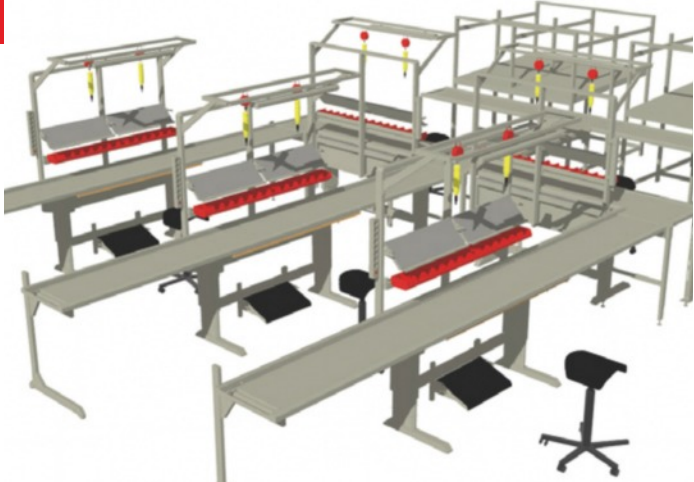
Material flow to effective workstations

In the assembly industry, workstations must be well planned and designed to meet the demanding needs of today's modern production environment. MultiLine is expressly designed as an accessory for Sovella workspace solutions. Its underlying concept is simple: by connecting workstations to a transfer line you can achieve a more **flexible and controllable material flow** between workstations without sacrificing characteristics such as usability or ergonomics.



Low investment costs

The MultiLine transfer system has two characteristics, to lower its investment costs. First, it is **integrated with an existing system**, complementing current processes and thereby avoiding the need for additional investments. Second, it is **built using standard parts** and design, which makes it **easy to adapt to any situation** and space. It can also be easily and quickly modified when the layout changes.



Optimised for WIP

The core of WIP logic (work in process) is made by the allocation of value to stored items between production phases. Money is wasted when in work products or components lie unused e.g. in a trolley used as a buffer. If a manual transfer line is used, only a small quantity of in work products lies waiting between production phases. This problem is amplified if a mistake made in one phase remains unnoticed until a trolley full of deficient components is brought to the next phase. In manual transfer solutions, since only a few faulty products can be produced before the mistake is noticed both the cost per mistake and the number of mistakes are greatly minimized.

Trolley used as a buffer



Manual transfer line



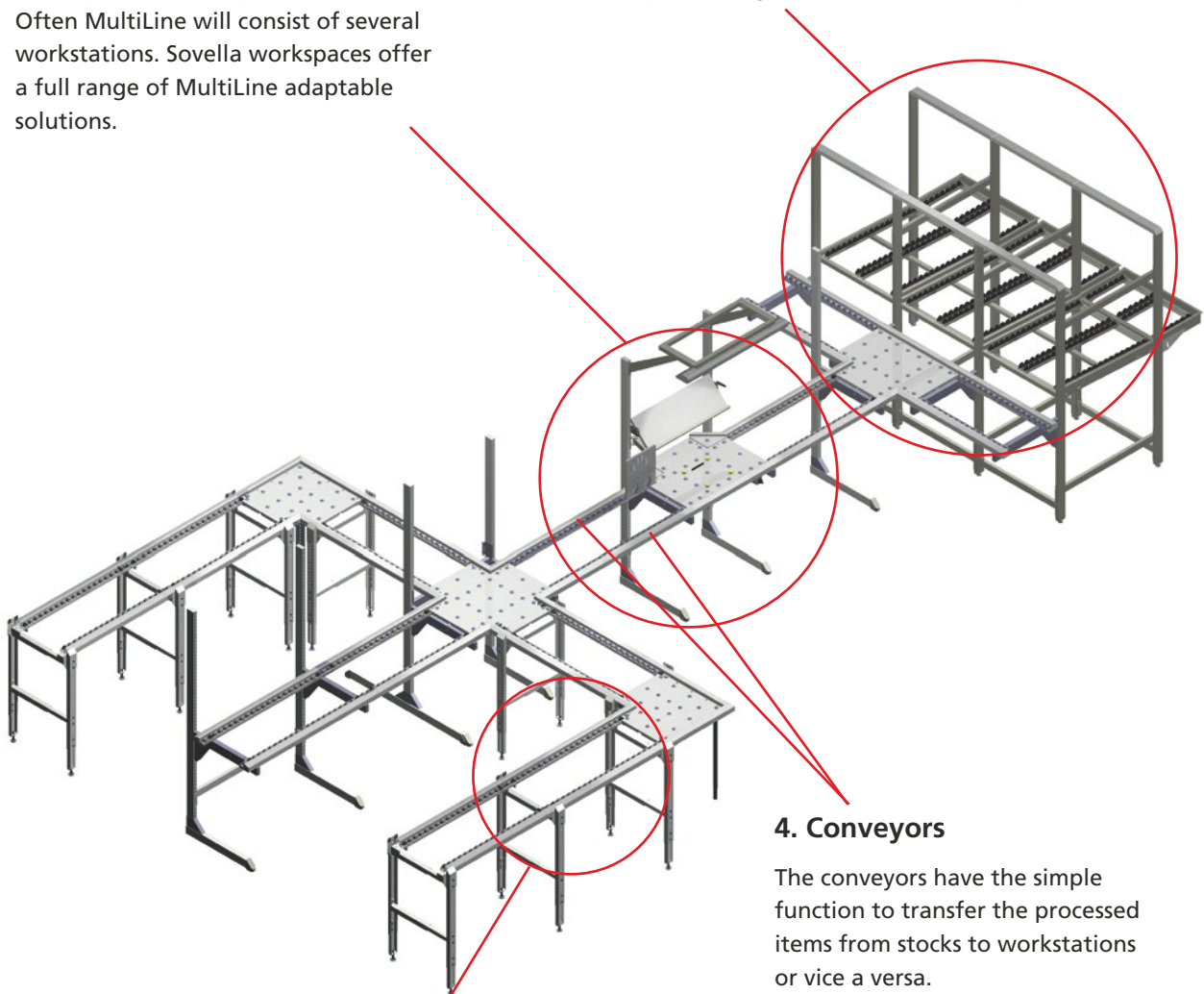
MultiLine is composed of

1. Workstations

The added value work is realized in different workstations on MultiLine production unit. Each workstation is built for the particular task that is accomplished in the production chain. Often MultiLine will consist of several workstations. Sovella workspaces offer a full range of MultiLine adaptable solutions.

2. Component stocks

In the production flow, the component stocks are often built with FIFO principle: the shelving product which arrives first also leaves first. When integrated to an assembly line, FlexFlow, Sovella's FIFO solution, functions as a compact storage or buffer for in work products.



3. Buffer stocks

The buffer stocks are created in the end of the line or in bottle necks of the process. Sovella proposes either FlexFlow with FIFO principle or a buffer stock can be built on line to store semi-finished or finished items.

4. Conveyors

The conveyors have the simple function to transfer the processed items from stocks to workstations or vice versa.

MultiLine Modular Concept

MultiLine's standardized sections

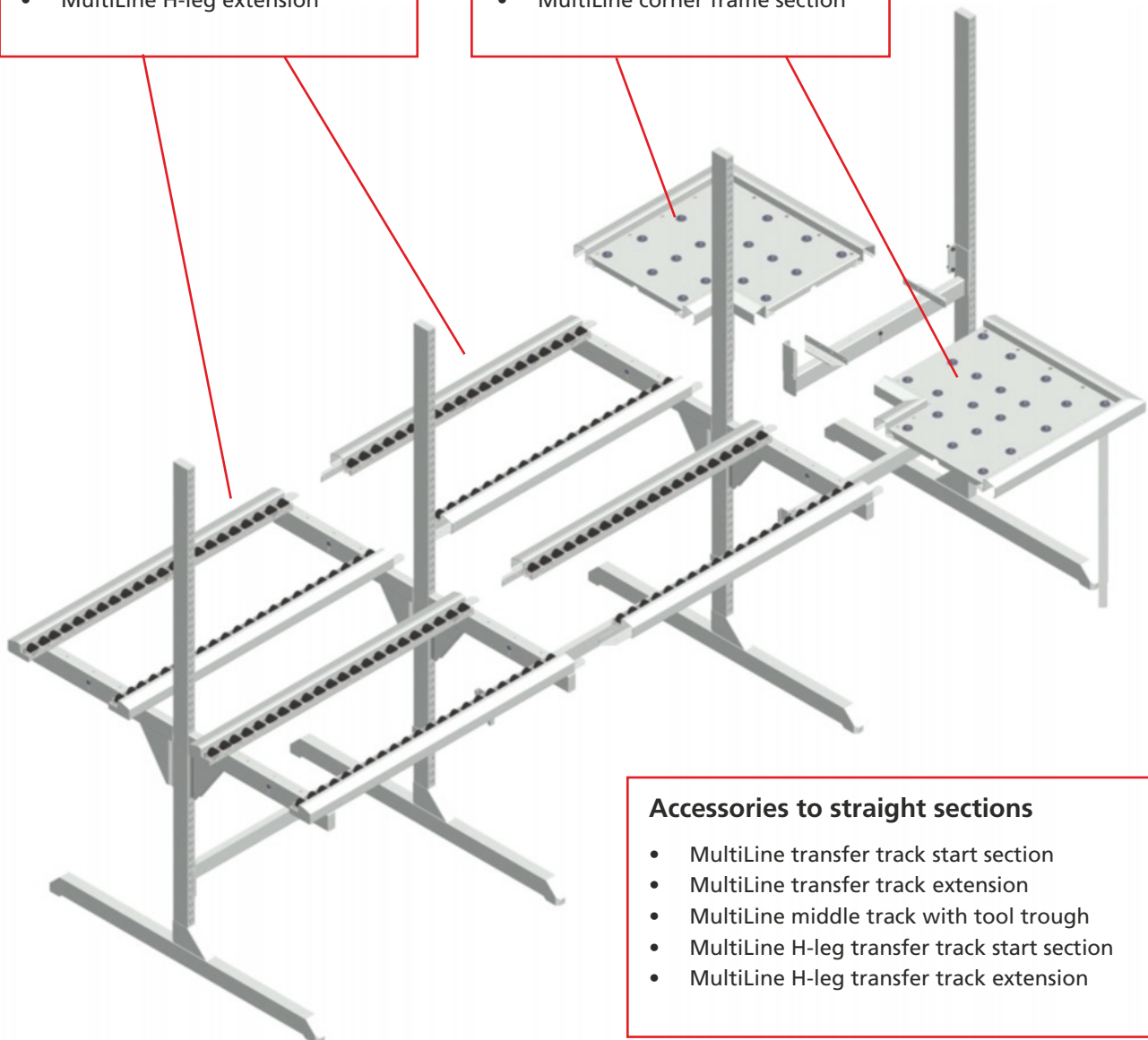
MultiLine is composed of standardized sections that can be put together to form a structured production unit. MultiLine sections consists of the straight conveyors and corner or crossing parts to allow the optimum allocation of the space in the factory lay out. MultiLine straight sections can also be equipped with transfer tracks to return of the pallet and middle tracks for heavier loads.

Straight sections

- MultiLine start section 1-sided
- MultiLine extension 1-sided
- MultiLine start section 2-sided
- MultiLine extension 2-sided
- MultiLine H-leg start section
- MultiLine H-leg extension

Corner/crossing sections

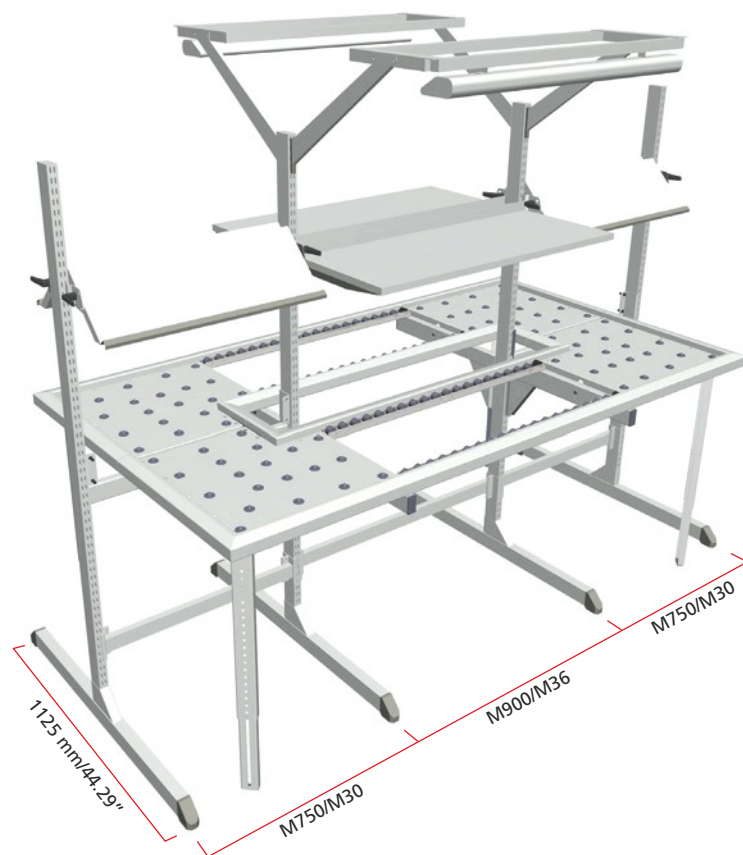
- MultiLine L-corner section
- MultiLine L-curve section
- MultiLine X-crossing section
- MultiLine T-crossing section
- MultiLine rotate platform
- MultiLine corner frame section



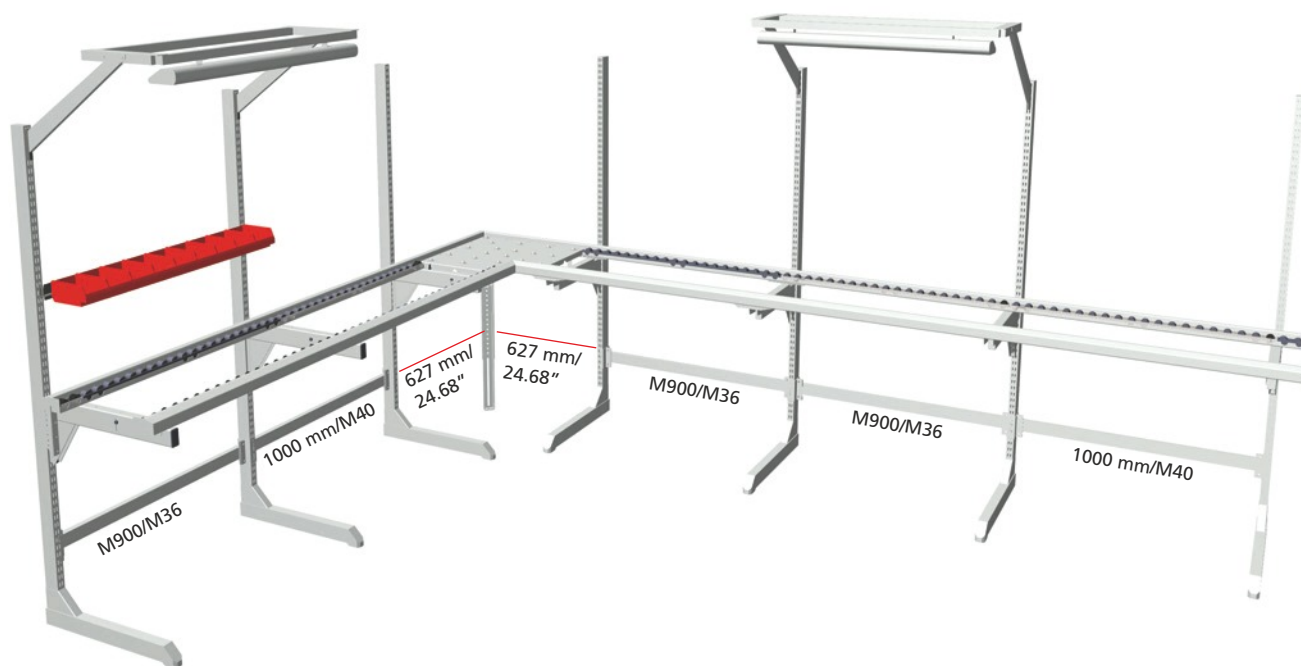
Accessories to straight sections

- MultiLine transfer track start section
- MultiLine transfer track extension
- MultiLine middle track with tool trough
- MultiLine H-leg transfer track start section
- MultiLine H-leg transfer track extension

Example 1



Example 2

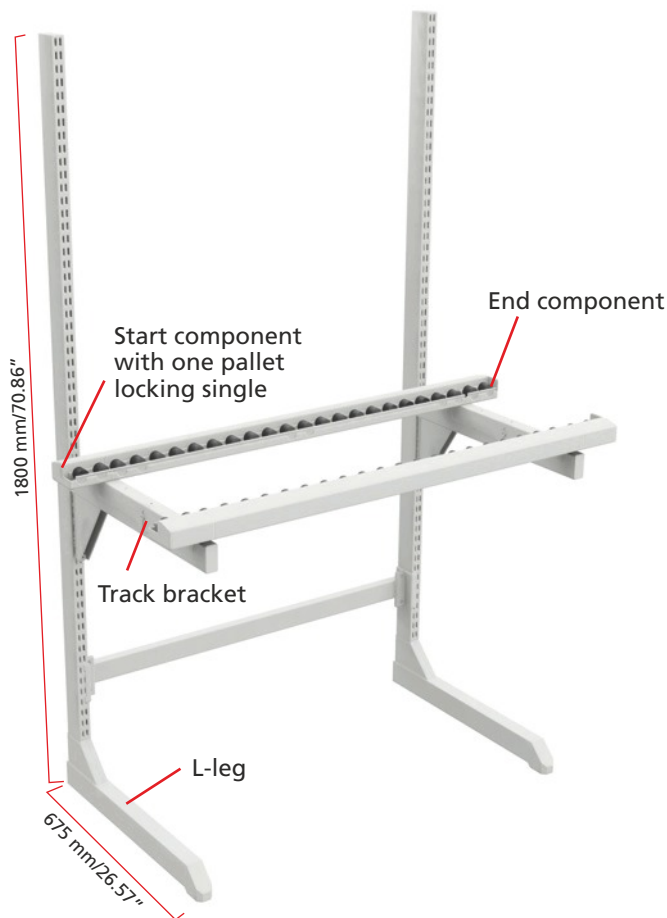


MultiLine Modules

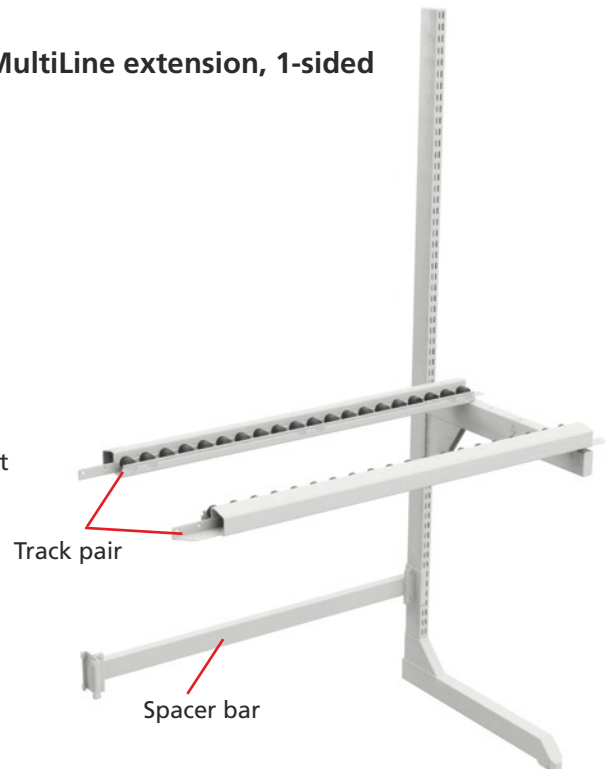
Straight sections

Each start section includes legs, brackets and start and end components. The extensions consists only one leg. The H-leg is mainly used for simple straight conveyors and it is easy to attach to already existing lines. The standard MultiLine unit is built on L-legs which allows the use of all Sovella workstation accessories. The straight sections use the standard Sovella module sizes (M750/M30, M900/M36, M1200/M48, M1350/M53, M1500/M60, M1800/M72), so the work station can be built directly on top of the MultiLine straight sections.

MultiLine start section, 1-sided



MultiLine extension, 1-sided



MultiLine start section, 1-sided

		Pallet depth mm		
		200	300	400
Length mm	Length inches	Pallet depth inches 7.87	11.81	15.74
M750	M30	855 35 201	855 35 301	855 35 401
M900	M36	855 35 202	855 35 302	855 35 402
1000	M40	855 35 203	855 35 303	855 35 403
M1200	M48	855 35 204	855 35 304	855 35 404
M1350	M53	855 35 205	855 35 305	855 35 405
M1500	M60	855 35 206	855 35 306	855 35 406
M1800	M72	855 35 207	855 35 307	855 35 407
2000	M80	855 35 208	855 35 308	855 35 408

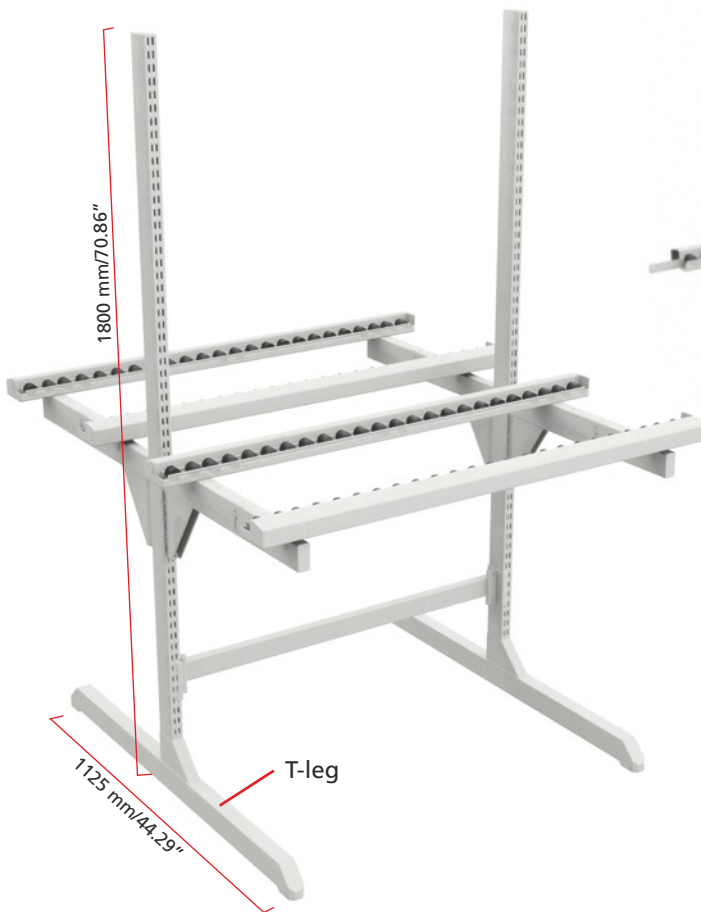
MultiLine extension, 1-sided

		Pallet depth mm		
		200	300	400
Length mm	Length inches	Pallet depth inches 7.87	11.81	15.74
M750	M30	856 35 201	856 35 301	856 35 401
M900	M36	856 35 202	856 35 302	856 35 402
1000	M40	856 35 203	856 35 303	856 35 403
M1200	M48	856 35 204	856 35 304	856 35 404
M1350	M53	856 35 205	856 35 305	856 35 405
M1500	M60	856 35 206	856 35 306	856 35 406
M1800	M72	856 35 207	856 35 307	856 35 407
2000	M80	856 35 208	856 35 308	856 35 408

Straight sections

The 2-sided section is used to save the floor space when the pallet return is needed or for a buffer stock to increase the production flow to its maximum. The double sided frame allows the whole production unit to be built of one frame using transfer modules on both sides of the frame.

MultiLine start section, 2-sided



MultiLine extension, 2-sided



MultiLine start section, 2-sided

		Pallet depth mm		
		200	300	400
Length mm	Length inches	Pallet depth inches 7.87	11.81	15.74
M750	M30	857 35 201	857 35 301	857 35 401
M900	M36	857 35 202	857 35 302	857 35 402
1000	M40	857 35 203	857 35 303	857 35 403
M1200	M48	857 35 204	857 35 304	857 35 404
M1350	M53	857 35 205	857 35 305	857 35 405
M1500	M60	857 35 206	857 35 306	857 35 406
M1800	M72	857 35 207	857 35 307	857 35 407
2000	M80	857 35 208	857 35 308	857 35 408

MultiLine extension, 2-sided

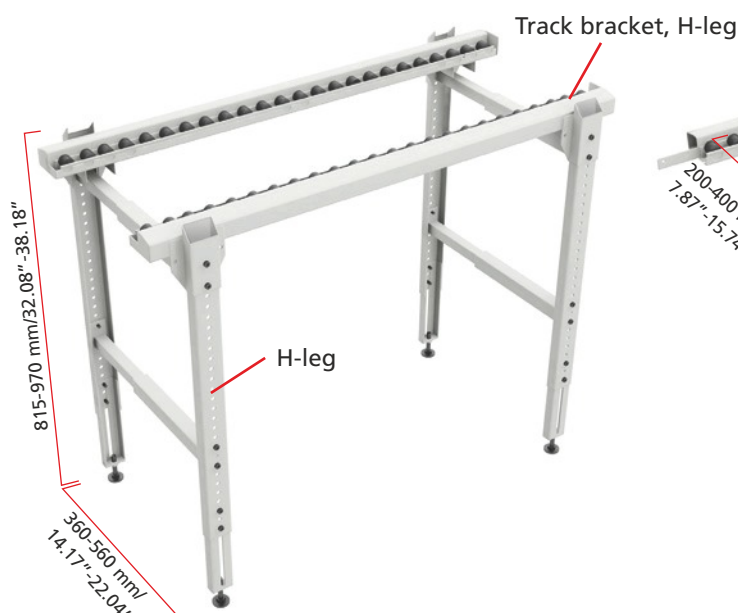
		Pallet depth mm		
		200	300	400
Length mm	Length inches	Pallet depth inches 7.87	11.81	15.74
M750	M30	858 35 201	858 35 301	858 35 401
M900	M36	858 35 202	858 35 302	858 35 402
1000	M40	858 35 203	858 35 303	858 35 403
M1200	M48	858 35 204	858 35 304	858 35 404
M1350	M53	858 35 205	858 35 305	858 35 405
M1500	M60	858 35 206	858 35 306	858 35 406
M1800	M72	858 35 207	858 35 307	858 35 407
2000	M80	858 35 208	858 35 308	858 35 408

MultiLine Modules

Straight sections

The H-leg allows a stepless depth adjustment for conveyor tracks between 200 and 400 mm (7.87" and 15.74").

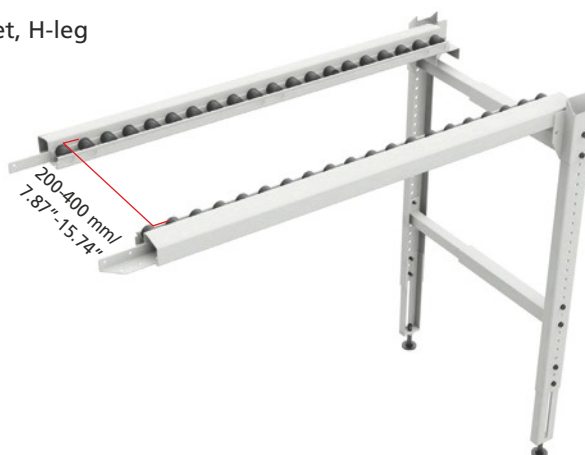
MultiLine H-leg start section



MultiLine H-leg start section

Length mm	Length inches	Order No
M750	M30	859 35 301
M1500	M60	859 35 306
2000	M80	859 35 308

MultiLine H-leg extension



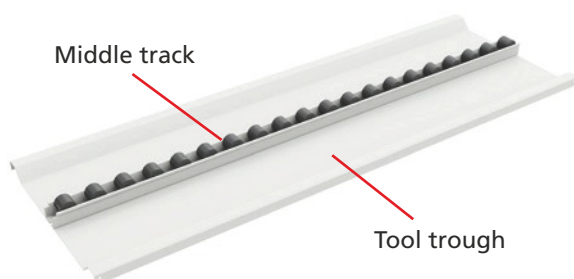
MultiLine H-leg extension

Length mm	Length inches	Order No
M750	M30	860 35 301
M1500	M60	860 35 306
2000	M80	860 35 308

Accessories to straight sections

The middle track increases the loading capacity of the track up to 15-27 kg (33-60 lbs.) depending on the pallet size. The middle track is held by a tool trough with space left over for tools. The tool trough provides easy access to tools and prevents components from falling through the work area.

MultiLine middle track with tool trough



MultiLine middle track with tool trough

		Pallet depth mm		
		200	300	400
		Pallet depth inches		
Length mm	Length inches	7.87	11.81	15.74
M750	M30	861 35 201	861 35 301	861 35 401
M900	M36	861 35 202	861 35 302	861 35 402
1000	M40	861 35 203	861 35 303	861 35 403
M1200	M48	861 35 204	861 35 304	861 35 404
M1350	M53	861 35 205	861 35 305	861 35 405
M1500	M60	861 35 206	861 35 306	861 35 406
M1800	M72	861 35 207	861 35 307	861 35 407
2000	M80	861 35 208	861 35 308	861 35 408

The transfer tracks can be installed as gravity conveyors as the track brackets can be attached at different height levels. The declination is stepless up to 3%. The track height is min. 800 mm/31.49" for L-leg when the transfer track is used. Use the brake clip for roller profiles to control the acceleration of the item (order no 852 546-00).

MultiLine transfer track start section



MultiLine transfer track start section

		Pallet depth mm		
		200	300	400
Length mm	Length inches	Pallet depth inches 7.87	11.81	15.74
M750	M30	862 35 201	862 35 301	862 35 401
M900	M36	862 35 202	862 35 302	862 35 402
1000	M40	862 35 203	862 35 303	862 35 403
M1200	M48	862 35 204	862 35 304	862 35 404
M1350	M53	862 35 205	862 35 305	862 35 405
M1500	M60	862 35 206	862 35 306	862 35 406
M1800	M72	862 35 207	862 35 307	862 35 407
2000	M80	862 35 208	862 35 308	862 35 408

MultiLine transfer track extension



MultiLine transfer track extension

		Pallet depth mm		
		200	300	400
Length mm	Length inches	Pallet depth inches 7.87	11.81	15.74
M750	M30	863 35 201	863 35 301	863 35 401
M900	M36	863 35 202	863 35 302	863 35 402
1000	M40	863 35 203	863 35 303	863 35 403
M1200	M48	863 35 204	863 35 304	863 35 404
M1350	M53	863 35 205	863 35 305	863 35 405
M1500	M60	863 35 206	863 35 306	863 35 406
M1800	M72	863 35 207	863 35 307	863 35 407
2000	M80	863 35 208	863 35 308	863 35 408

MultiLine H-leg transfer track start section



MultiLine H-leg transfer track start section

Length mm	Length inches	Order No
M750	29.52	870 35 201
M1500	59.05	870 35 206
2000	78.74	870 35 208

MultiLine H-leg transfer track extension



MultiLine H-leg transfer track extension

Length mm	Length inches	Order No
M750	29.52	871 35 201
M1500	59.05	871 35 206
2000	78.74	871 35 208

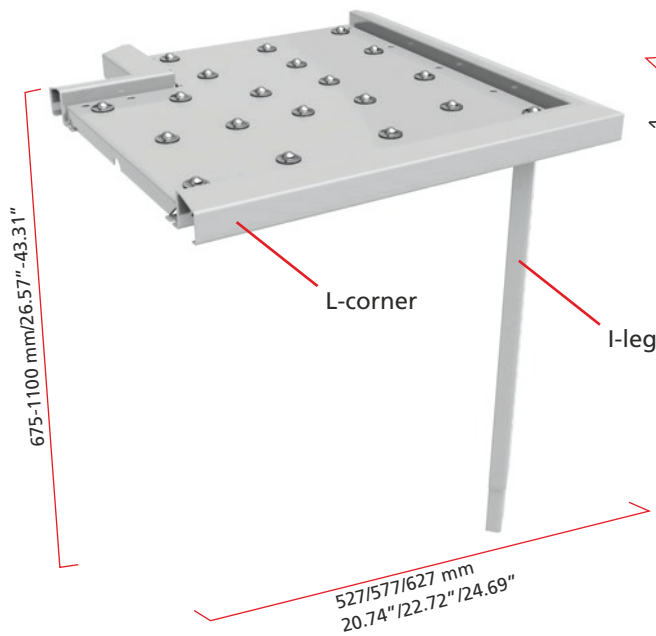
MultiLine Modules

Corner/crossing sections

Crossing modules increase production line flexibility and space optimization. Crossing modules also provide additional stock buffer options.

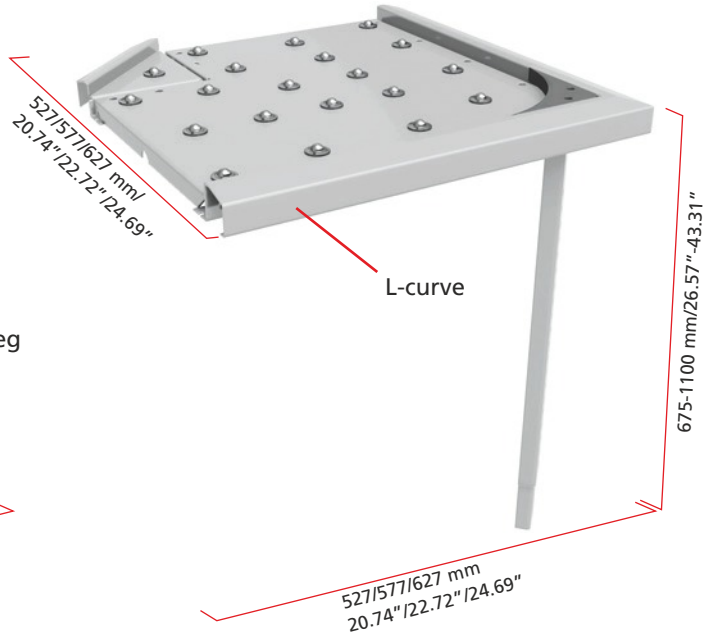
MultiLine L-corner section

The L-corner section makes the pallet turn 90 degrees in the corner.

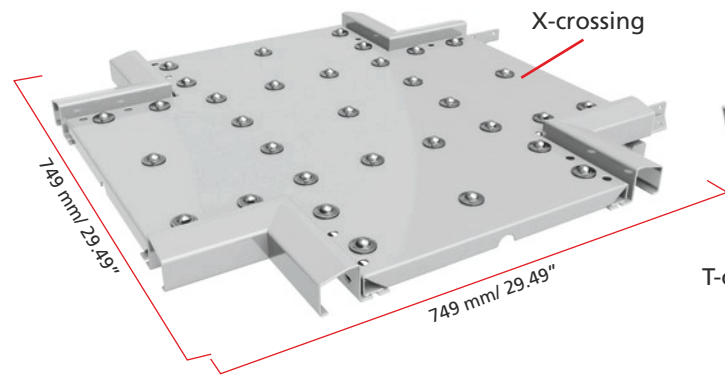


MultiLine L-curve section

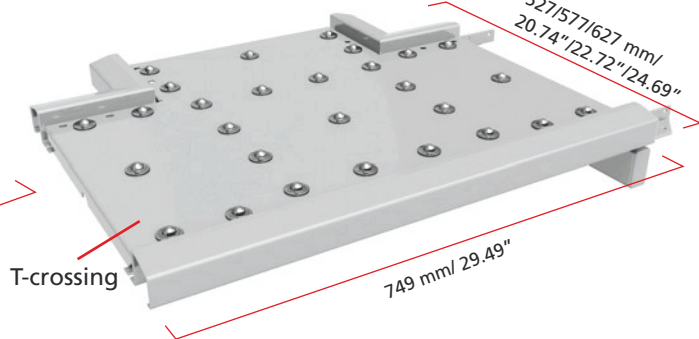
The L-curve keeps the direction of the pallet the same after the curve.



MultiLine X-crossing section



MultiLine T-crossing section



Corner/crossing sections

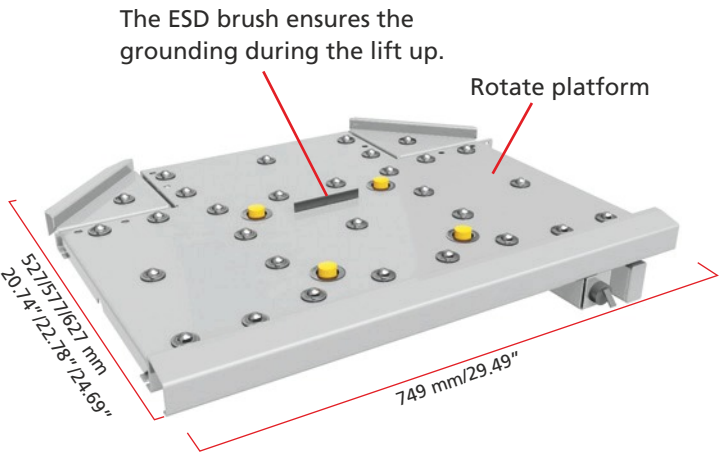
Depth mm	200	300	400
Depth inches	7.87	11.81	15.74
MultiLine L-corner section	865 35 201	865 35 301	865 35 401
MultiLine L-curve section	866 35 201	866 35 301	866 35 401
MultiLine X-crossing section	867 35 201	867 35 301	867 35 401
MultiLine T-crossing section	868 35 201	868 35 301	868 35 401
MultiLine rotate platform section	869 35 201	869 35 301	869 35 401
MultiLine corner frame section	864 35 201	864 35 301	864 35 401

The loading capacity for corner/ crossing section is 40 kg (88 lbs.).

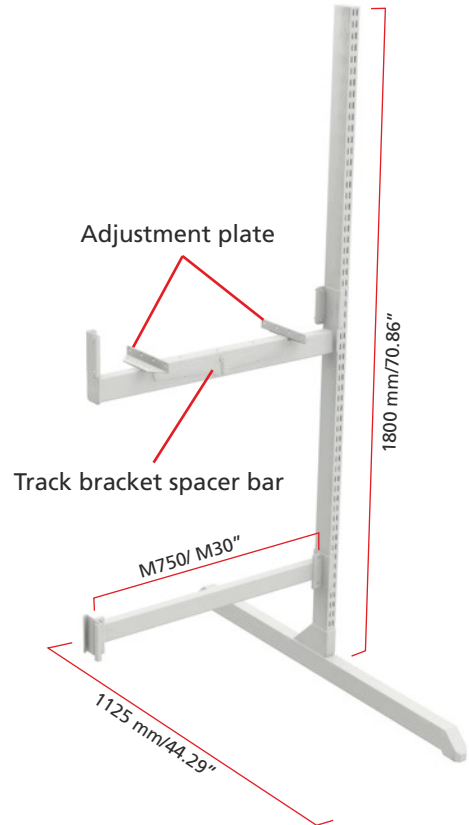
All corner/crossing sections are attached to the MultiLine corner frame section. One corner frame section can support one or two corner/crossing sections. The sections include the necessary brackets.

MultiLine rotate platform

With the addition of standard accessories from the Sovella product Catalog the rotate platform becomes a fully integrated workstation. The pallet is held with pop up pads to avoid moving during the assemble processes time. The pop up pads function with the pressurized air and need a pop-up pad utility kit 890 157-35.



MultiLine corner frame section



Pop-up pad utility kit

The pop-up pad utility kit (order No 890 157-35) is needed for the regular lubrication of the pop-up pads. It includes a pressure valve and a lubrication unit. The recommended pressurization is 3 bars (max 50 psi).



ESD pallets



ESD pallets

Size mm	200 x 200	300 x 300	400 x 400
Size inches	7.87 x 7.87	11.81 x 11.81	15.47 x 15.47
Order No	861 402-63	861 403-63	861 404-63
Load capacity kg	25	35	40
Load capacity lbs	55	77	88

Other pallet materials available as options, please contact sales support for additional information.

Multiline Part List

Multiline legs

	Height mm	Height inches	Order No
L-leg	1800	70.86	C 850 35 010
T-leg	1800	70.86	C 850 35 020
H-leg with track bracket pair	815-970	32.08-38.18	C 850 35 030
I-leg	625-1050	24.60-41.33	C 850 35 040

Multiline track brackets

	Depth mm	Depth inches	Order No
Track bracket	200	7.87	C 851 35 001
Track bracket	300	11.81	C 851 35 003
Track bracket	400	15.74	C 851 35 005
Track bracket, spacer bar	200	7.87	C 851 35 011
Track bracket, spacer bar	300	11.81	C 851 35 013
Track bracket, spacer bar	400	15.74	C 851 35 015
Track bracket, H-leg			890 290-35
Adjustment plate	200	7.87	890 205-35
Adjustment plate	300	11.81	890 206-35
Adjustment plate	400	15.74	890 207-35

Multiline tracks

	Modules mm	Modules inches	Length mm	Length inches	Order No
Track, pair	M750	M30	750	29.52	C 852 35 002
Track, pair	M900	M36	903	35.55	C 852 35 003
Track, pair	1000	M40	1000	39.37	C 852 35 004
Track, pair	M1200	M48	1200	47.24	C 852 35 005
Track, pair	M1350	M53	1350	53.14	C 852 35 006
Track, pair	M1500	M60	1500	59.05	C 852 35 007
Track, pair	M1800	M72	1806	71.10	C 852 35 008
Track, pair	2000	M80	2000	78.74	C 852 35 009

Multiline middle tracks

	Modules mm	Modules inches	Length mm	Length inches	Order No
Middle track	M750	M30	750	29.52	C 852 35 022
Middle track	M900	M36	903	35.55	C 852 35 023
Middle track	1000	M40	1000	39.37	C 852 35 024
Middle track	M1200	M48	1200	47.24	C 852 35 025
Middle track	M1350	M53	1350	53.14	C 852 35 026
Middle track	M1500	M60	1500	59.05	C 852 35 027
Middle track	M1800	M72	1806	71.10	C 852 35 028
Middle track	2000	M80	2000	78.74	C 852 35 029

Multiline tool troughs

	Modules mm	Modules inches	Depth mm	Depth inches	Order No
Tool trough	M750	M30	300	11.81	890 302-35
Tool trough	M900	M36	300	11.81	890 303-35
Tool trough	1000	M40	300	11.81	890 304-35
Tool trough	M1200	M48	300	11.81	890 305-35
Tool trough	M1350	M53	300	11.81	890 306-35
Tool trough	M1500	M60	300	11.81	890 307-35
Tool trough	M1800	M72	300	11.81	890 308-35
Tool trough	2000	M80	300	11.81	890 309-35
Tool trough	M750	M30	400	15.74	890 293-35
Tool trough	M900	M36	400	15.74	890 294-35
Tool trough	1000	M40	400	15.74	890 295-35
Tool trough	M1200	M48	400	15.74	890 296-35
Tool trough	M1350	M53	400	15.74	890 297-35
Tool trough	M1500	M60	400	15.74	890 298-35
Tool trough	M1800	M72	400	15.74	890 299-35
Tool trough	2000	M80	400	15.74	890 300-35

MultiLine spacer bars

	Modules mm	Modules inches	Order No
Spacer bar	M750	M30	851 483-35
Spacer bar	M900	M36	840 106-35
Spacer bar	1000	M40	854 860-35
Spacer bar	M1200	M48	854 861-35
Spacer bar	M1350	M53	854 862-35
Spacer bar	M1500	M60	854 863-35
Spacer bar	M1800	M72	854 864-35
Spacer bar	2000	M80	854 865-35

MultiLine crossings parts

	Pallet size mm	Pallet size inches	Order No
L-corner	200 x 200	7.87 x 7.87	C 852 35 141
L-corner	300 x 300	11.81 x 11.81	C 852 35 143
L-corner	400 x 400	15.74 x 15.74	C 852 35 145
L-curve	200 x 200	7.87 x 7.87	C 852 35 161
L-curve	300 x 300	11.81 x 11.81	C 852 35 163
L-curve	400 x 400	15.74 x 15.74	C 852 35 165
T-crossing	200 x 200	7.87 x 7.87	C 852 35 121
T-crossing	300 x 300	11.81 x 11.81	C 852 35 123
T-crossing	400 x 400	15.74 x 15.74	C 852 35 125
X-crossing	200 x 200	7.87 x 7.87	C 852 35 101
X-crossing	300 x 300	11.81 x 11.81	C 852 35 103
X-crossing	400 x 400	15.74 x 15.74	C 852 35 105

Rotate platforms

	Pallet size mm	Pallet size inches	Order No
Rotate platform, with pop-ups	200 x 200	7.87 x 7.87	C 852 35 201
Rotate platform, with pop-ups	300 x 300	11.81 x 11.81	C 852 35 203
Rotate platform, with pop-ups	400 x 400	15.74 x 15.74	C 852 35 205

Start and end-components

	Order No
Start-component, with pallet locking single	890 315-35
End-component	890 316-35

Spare parts for rotating plate

	Order No
1 Pop-up pad utility kit, incl. pressure valve and lubrication unit	890 157-35
2 Rocking lever	914 605-00
3 Panel valve SV-3-M5	914 608-00
4 Manual valve bracket	890 319-35
5 Extra friction pop-up pad ESD-brush	914 612-00
6 Steel balls	900 580-00
	900 280-00

Other spare parts

	Order No
7 Pallet locking single	890 150-35
8 Brake, roller profiles	852 546-00

