

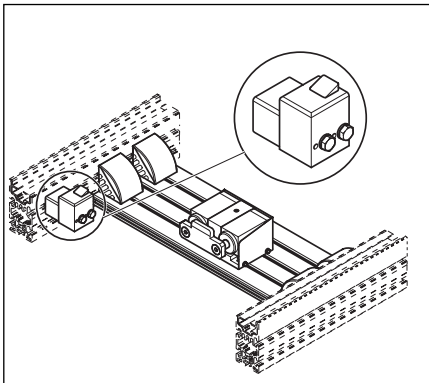
Traffic Control

Section 8—Traffic Control

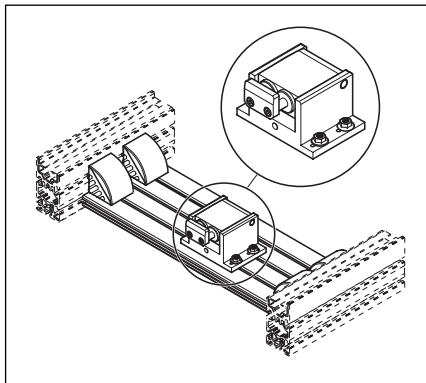
Controlling the flow of pallets to prevent excessive accumulation or maximize manual and automated workstation efficiency takes a variety of approaches. TS4plus offers several types of stop gates, as well as proximity switches and switch mounting kits, to provide the most effective traffic control system for your application.

Cushioned stop gates are used for all applications along a mainline conveyor line or transverse conveyor section.

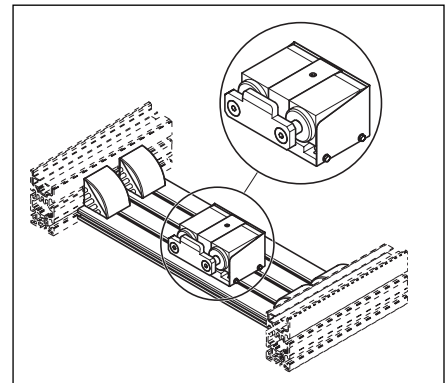
All TS4plus cushioned stops utilize infinitely adjustable, self-compensating pneumatic dampers to gently stop the workpiece pallet.



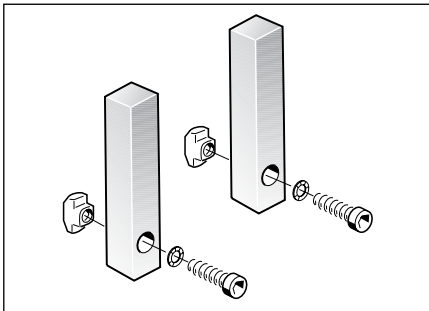
VE4-S/AR
Anti-rebound Stop
8-1



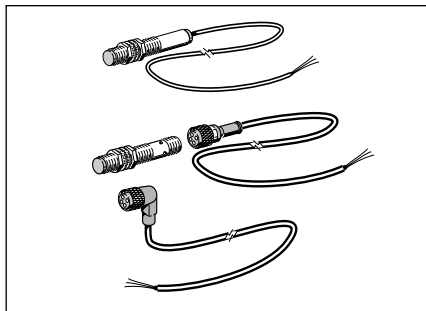
VE4-D100
Cushioned Stop Gates
8-2 to 8-3



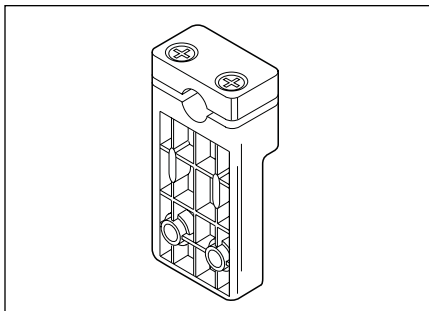
VE4-D250
Heavy Duty Cushioned Stop Gates
8-4 to 8-5



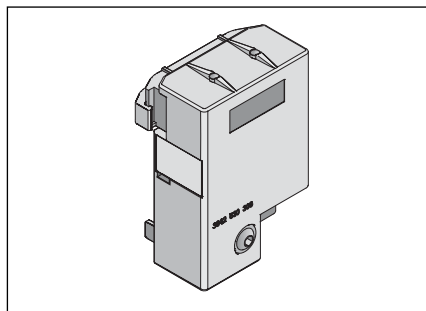
Safety Stop Kit
8-6



Proximity Switches
8-8



Proximity Switch Bracket
8-8



W1/M
Mini Rocker
8-9

Traffic Control

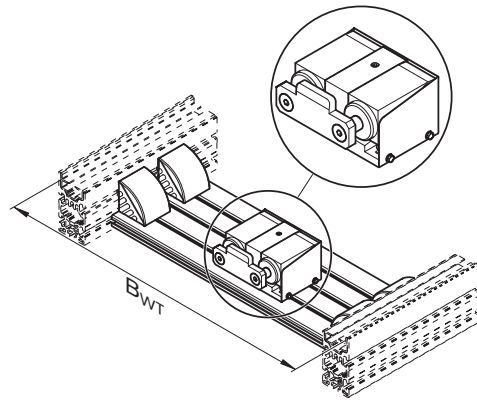
Anti-rebound Stop

Model VE4-S/AR

With the low coefficient of friction on TS4plus roller chain conveyors, workpiece pallets may rebound when pallet travel is halted by a stop gate or the stop rail on a Lift-Transfer Unit. Typically, rebound begins whenever pallet weight with payload exceeds 200kg or when transport speeds are 12m/min and higher. If required by the assembly process, the VE4-S/AR can be used to prevent pallet rebound.

In operation, as the workpiece pallet passes over the rebound stop, the latch lever is pushed down. Just as the pallet frame clears the rebound stop, the latch lever springs back, limiting any reverse movement of the workpiece pallet. The latch lever will engage the inner or outer frame rail of any TS4plus workpiece pallet and is reversible for left or right side mounting. The rebound stop mounts to the inner conveyor rail T-slot and includes all required mounting hardware.

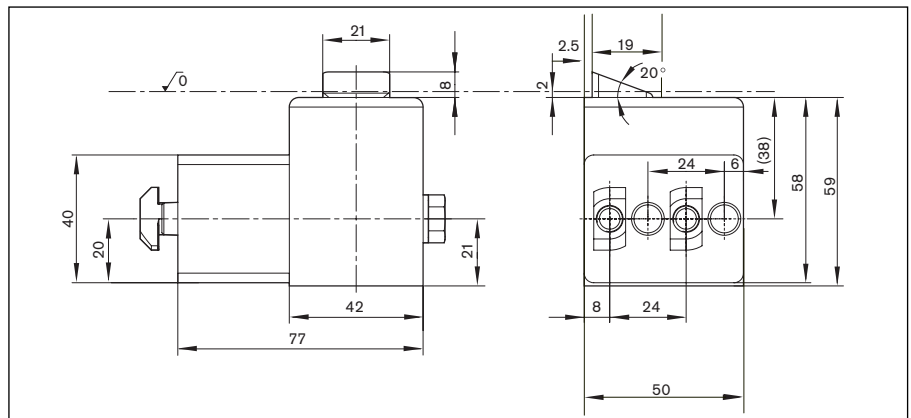
For reverse operation, a pneumatically actuated rebound stop is also available. The pneumatically actuated version is a single acting stop that utilizes a spring to perform the rebound (stopping) motion and a pneumatic actuation to perform the return (retracting) motion.



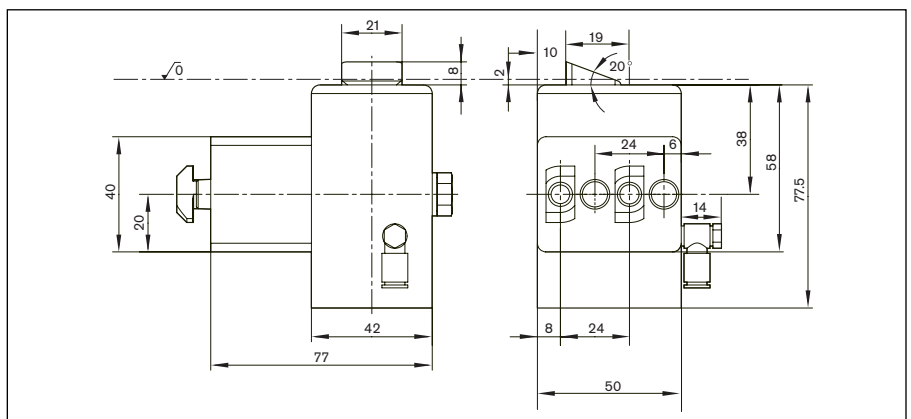
Ordering Information for Anti-rebound Stop VE4-S/AR

Anti-rebound Stop	3842 530 968
Pneumatic Anti-rebound Stop	3842 532 329

Dimensional Data Anti-rebound Stop VE4-S/AR



Dimensional Data for Pneumatic Anti-rebound Stop VE4-S/AR



Traffic Control

Cushioned Stop Gates

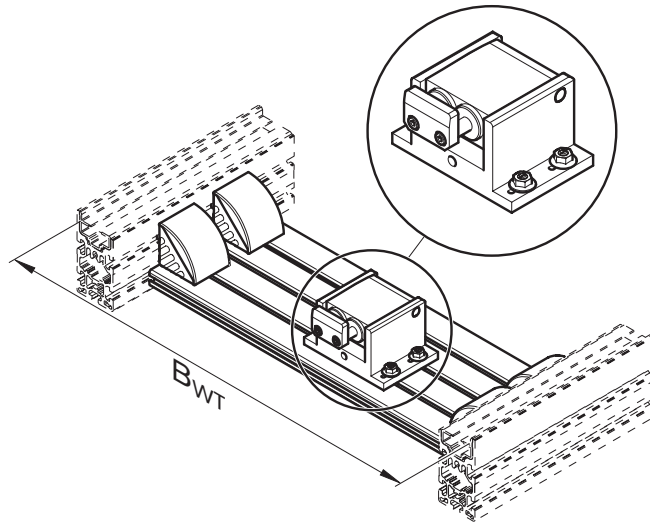
Model VE4/D100

Center-mount cushioned stop gates are used to stop and separate workpiece pallets on the conveyor. They are pneumatically reset and mounted between the conveyor section by attaching the mounting plate with gussets to the inner T-slot of the conveyor rails.

Cushioned stop gates are available for mounting to either ST4 mainline conveyor sections or to BS4 transverse conveyor sections. NOTE: Different part numbers exist for each style and line width.

The VE4/D100 cushioned stop gate is designed for pallet loads between 5kg and 100kg. When delivered, cushioned stop gates are configured to stop the pallet on the leading edge. However, they can be converted at any time (with no additional parts needed) to stop the pallet on its trailing edge. Damping effect for various payload and speed combinations is set via an adjustment screw.

All required mounting hardware is included. Cushioned stop gates include 8 mm pushlock pneumatic fittings and require 4–6 bar of filtered, oiled or unoled, compressed air.



Ordering Information for Cushioned Stop Gates, VE4/D100

Line Width (B _{WT}) in mm	Conveyor Section Type	Part Number
443	ST4	8981 022 133
643	ST4	8981 022 134
843	ST4	8981 022 135
1043	ST4	8981 022 136
1243	ST4	8981 022 137
443	BS4	8981 022 138
643	BS4	8981 022 139
843	BS4	8981 022 140
1043	BS4	8981 022 141
1243	BS4	8981 022 142

Traffic Control

Cushioned Stop Gates

Stop Load Ratings for VE4/D100

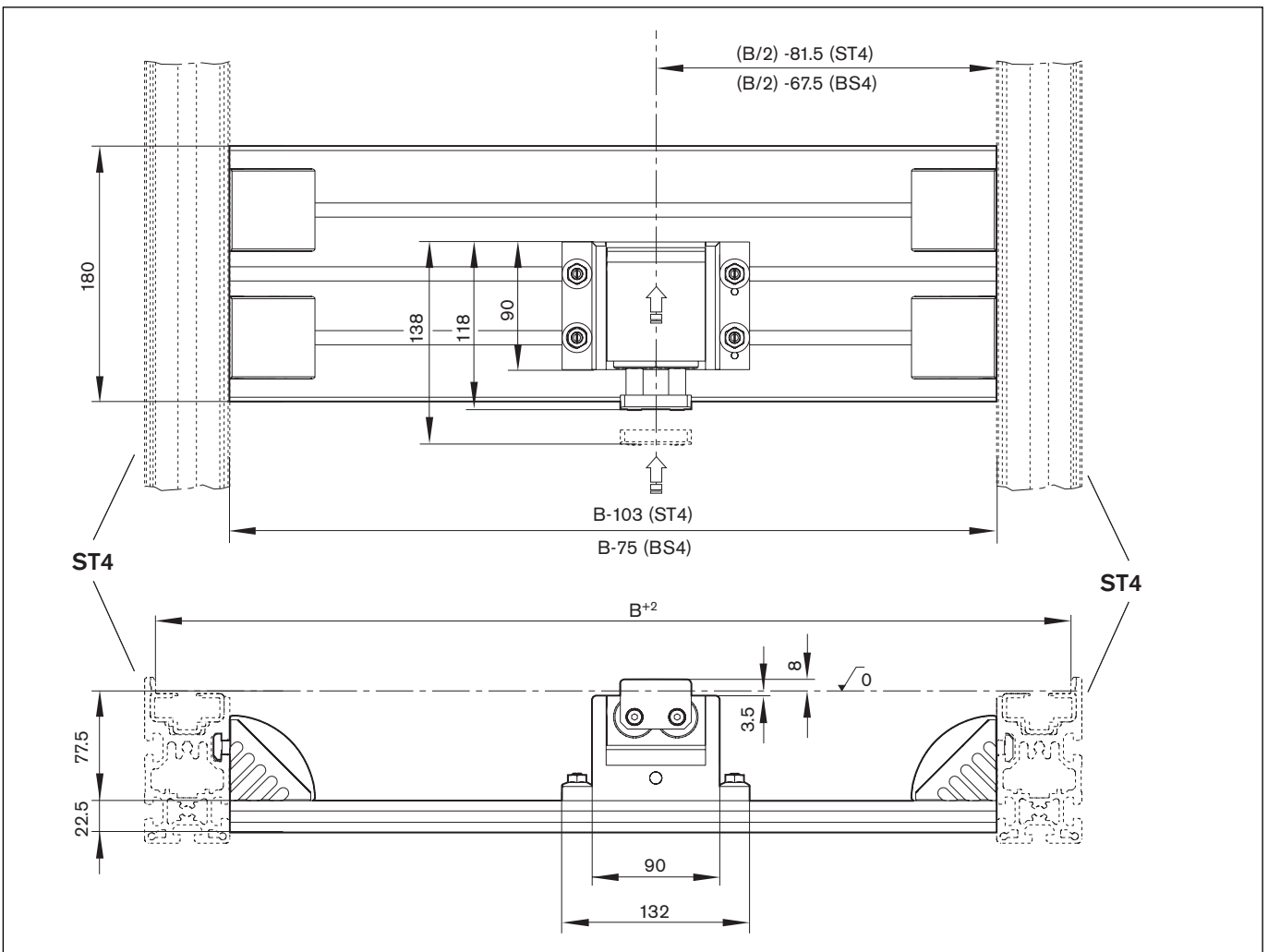
6 m/min	9 m/min	12 m/min	15 m/min	18 m/min
100 Kg	100 Kg	100 Kg	95 Kg	90 Kg

Accumulation Load Ratings for VE4/D100

6 m/min	9 m/min	12 m/min	15 m/min	18 m/min
1000 Kg	800 Kg	500 Kg	300 Kg	200 Kg

NOTE: Once a cushioned stop gate has been compressed by a workpiece pallet, "Accumulation" refers to any subsequent pallets that queue up behind the first pallet.

Dimensional Data for VE4/D100



Traffic Control

Heavy Duty Cushioned Stop Gates

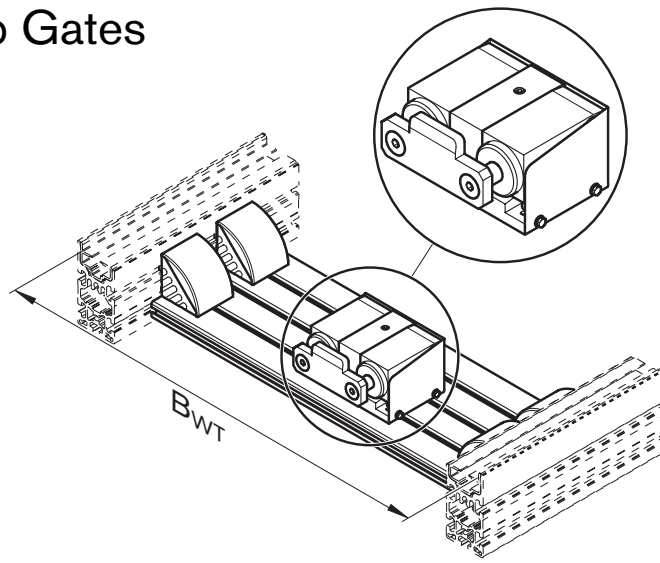
Model VE4/D250

Heavy Duty center-mount cushioned stop gates are used to stop and separate workpiece pallets on the conveyor. They are pneumatically reset and mount between the conveyor section by attaching the mounting plate with gussets to the inner T-slot of the conveyor rails.

Cushioned stop gates are available for mounting to either ST4 mainline conveyor sections or to BS4 transverse conveyor sections. NOTE: Different part numbers exist for each style and line width.

The VE4/D250 cushioned stop gate is designed for pallet loads between 30kg and 250kg. When delivered, cushioned stop gates are configured to stop the pallet on the leading edge. However, they can be converted at any time (with no additional parts needed) to stop the pallet on its trailing edge. Damping effect for various payload and speed combinations is set via an adjustment screw.

All required mounting hardware is included. Cushioned stop gates include 8mm pushlock pneumatic fittings and require 4–6 bar of filtered, oiled or unoled, compressed air.



Ordering Information for Heavy Duty Cushioned Stop Gates, VE4/D250

Line Width (B _{WT})	Conveyor Section	Part Number
443	ST4	8981 022 143
643	ST4	8981 022 144
843	ST4	8981 022 145
1043	ST4	8981 022 146
1243	ST4	8981 022 147
443	BS4	8981 022 148
643	BS4	8981 022 149
843	BS4	8981 022 150
1043	BS4	8981 022 151
1243	BS4	8981 022 152

Traffic Control

Heavy Duty Cushioned Stop Gates

Stop Load Ratings for VE4/D250

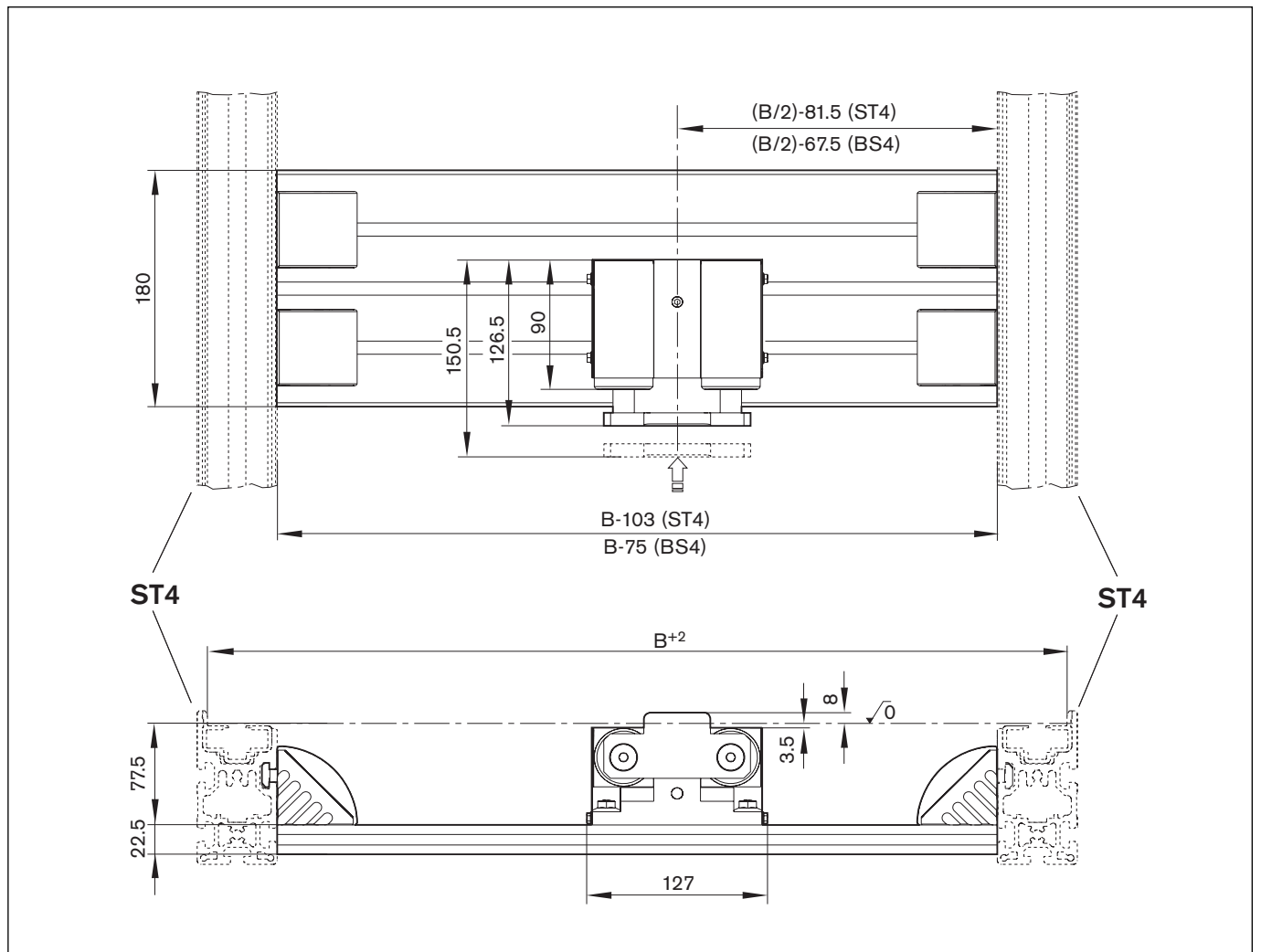
6 m/min	9 m/min	12 m/min	15 m/min	18 m/min
250 Kg	250 Kg	250 Kg	235 Kg	225 Kg

Accumulation Load Ratings for VE4/D250

6 m/min	9 m/min	12 m/min	15 m/min	18 m/min
2300 Kg	2000 Kg	1200 Kg	700 Kg	500 Kg

NOTE: Once a cushioned stop gate has been compressed by a workpiece pallet, "Accumulation" refers to any subsequent pallets that queue up behind the first pallet.

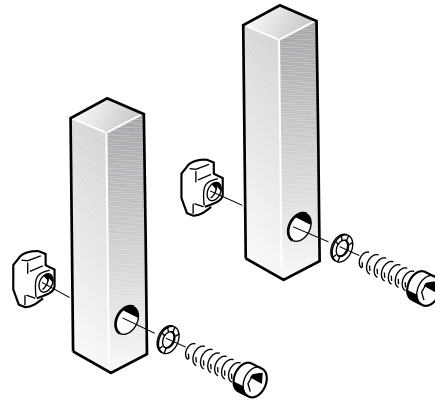
Dimensional Data for VE4/D250



Traffic Control

Safety Stop Kit

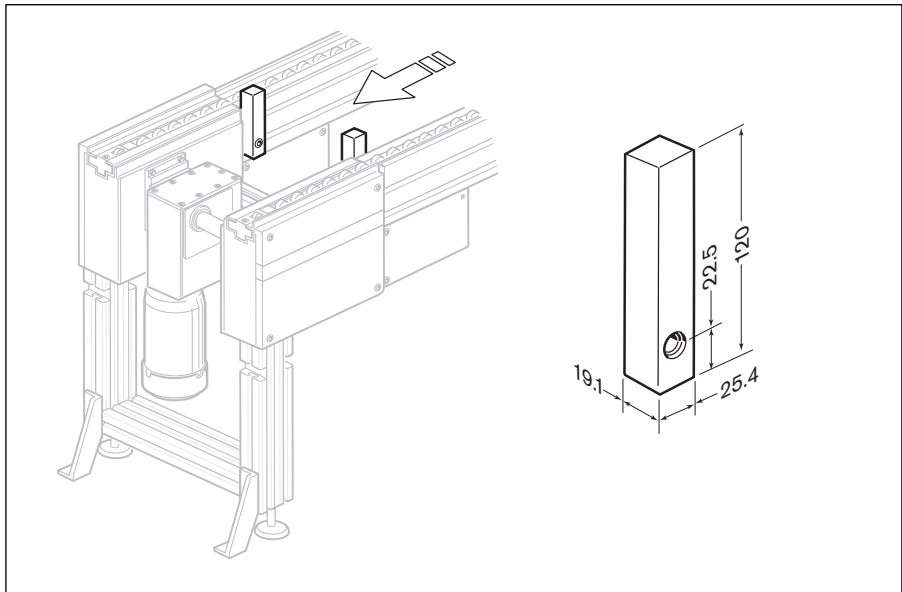
The optional safety stop kit is not required but can be used as a redundant safety feature for the control system. The safety stop will prevent the workpiece pallet from being pushed from the end of the conveyor in the event of a control system failure. The stops attach to the T-slot in the conveyor rail next to the drive unit. The kit includes two stops and the required mounting hardware.



Ordering Information for Safety Stop Kit

	Part Number
Safety Stop Kit (for all pallet sizes)	8981 020 069

Dimensional Data for Safety Stop Kit



Traffic Control

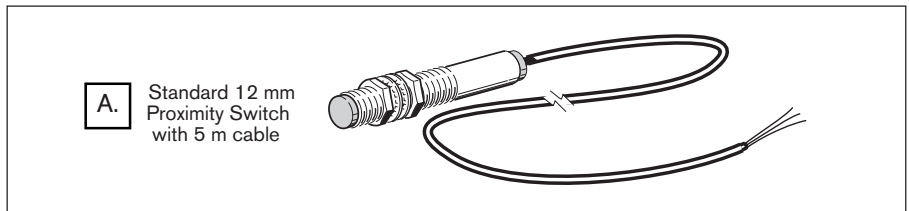
Proximity Switches

Proximity switches indicate workpiece pallet presence by detecting the exciter plates on the sides of workpiece pallets. These normally open, 24 VDC, short-circuit protected switches are PNP (sourcing) and have a 12 mm threaded body. Proximity switches operate at a 4 mm sensing range (unshielded) and have an LED indicator.

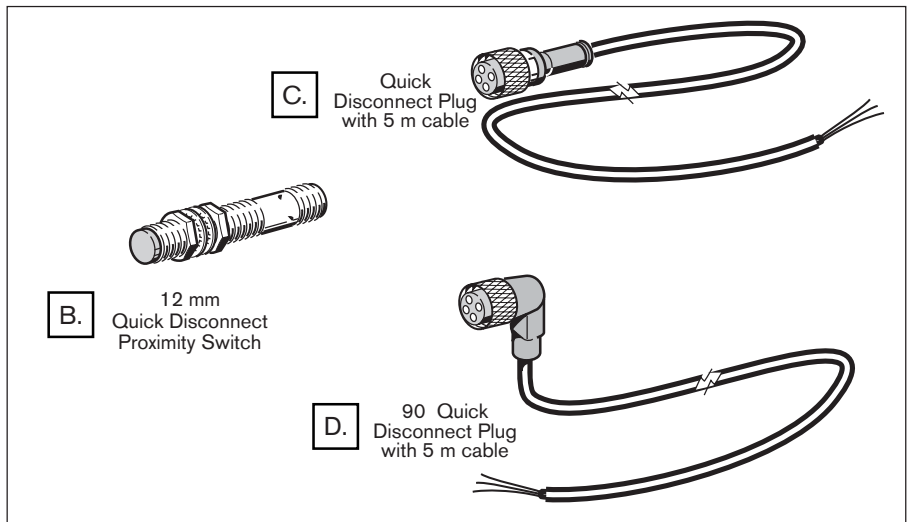
Two versions are available. The standard switch has five meters of three conductor cable attached. The quick disconnect switch provides for faster assembly and service when used with the disconnect plug and cable.

NOTE: Proximity switches are not included with modules that require them and must be ordered separately. In some cases, proximity switch use is optional, depending on the control system programming.

Standard Proximity Switches



Quick Disconnect Proximity Switches



Ordering Information Proximity Switches

	Description	Part Number
A	12mm, 10-30 VDC, normally open, Proximity Switch with 5m of 3 conductor cable, one	8981 004 462
B	12 mm 10-30 VDC, normally open, Quick Disconnect Proximity Switch, one	8981 533 326
C	Straight, Quick Disconnect Plug with 5m of 3 conductor cable, one	8981 008 498
D	90° Quick Disconnect Plug with 5m of 3 conductor cable, one	8981 013 317

Traffic Control

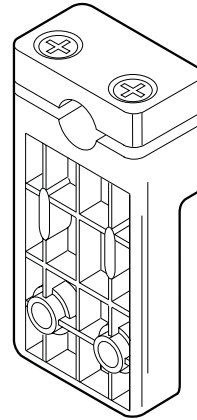
Proximity Switch Bracket

Model SH2/S

Proximity switch mounting kits are used to attach proximity switches to sense the discrete pallet position along the line for control purposes. The switch, sold separately, is typically used to provide a "pallet present" signal at stops, transfers, and positioning modules.

The proximity switch bracket is designed to be used with any 12 mm diameter proximity switch. The bracket is constructed of tough polyamide and includes all mounting hardware.

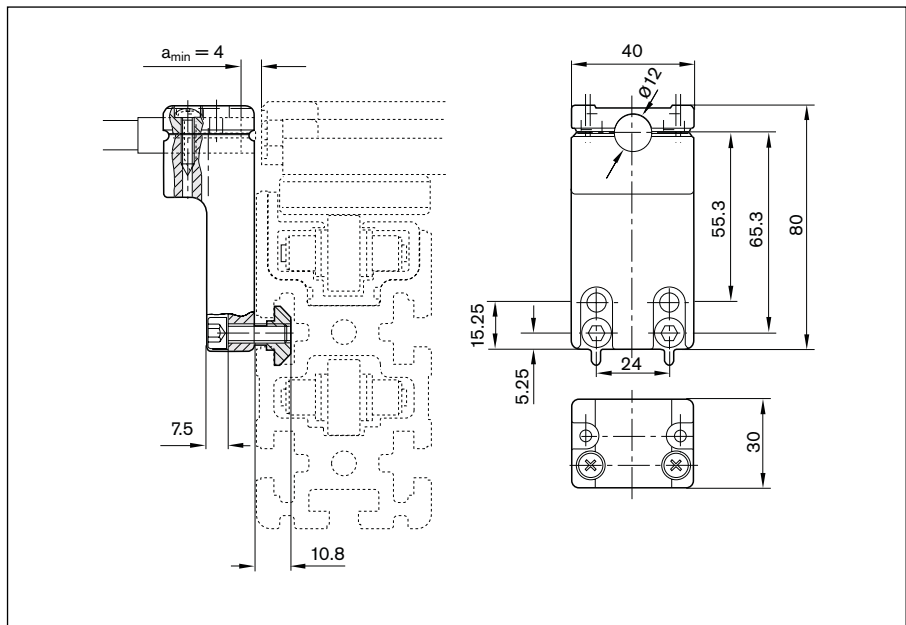
NOTE: Proximity switches must be mounted at a minimum distance of 4mm from the exciter plate, which is located on the corner bumper of the pallet.



Ordering Information for Proximity Switch Bracket SH2/S

Description	Part Number
Horizontal Proximity Switch Bracket with mounting hardware	3842 168 830

Dimensional Data for SH2/S



Traffic Control

Mini Rocker

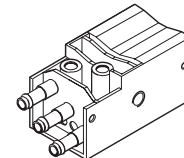
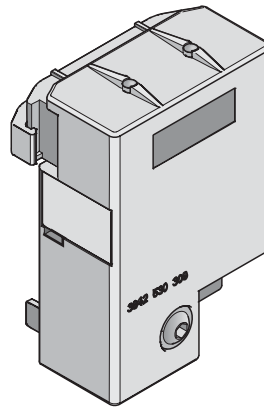
Model WI/M

The WI/M mini rocker stop provides an economical method of workpiece pallet detection. It can also be used (in conjunction with other components) to create an accumulation control kit.

When used for pallet detection, a 12mm threaded body proximity switch is required (ordered separately). The switch is activated when a workpiece pallet passes in front of the rocker. In this configuration, the WI/M has a monitoring area of 44mm.

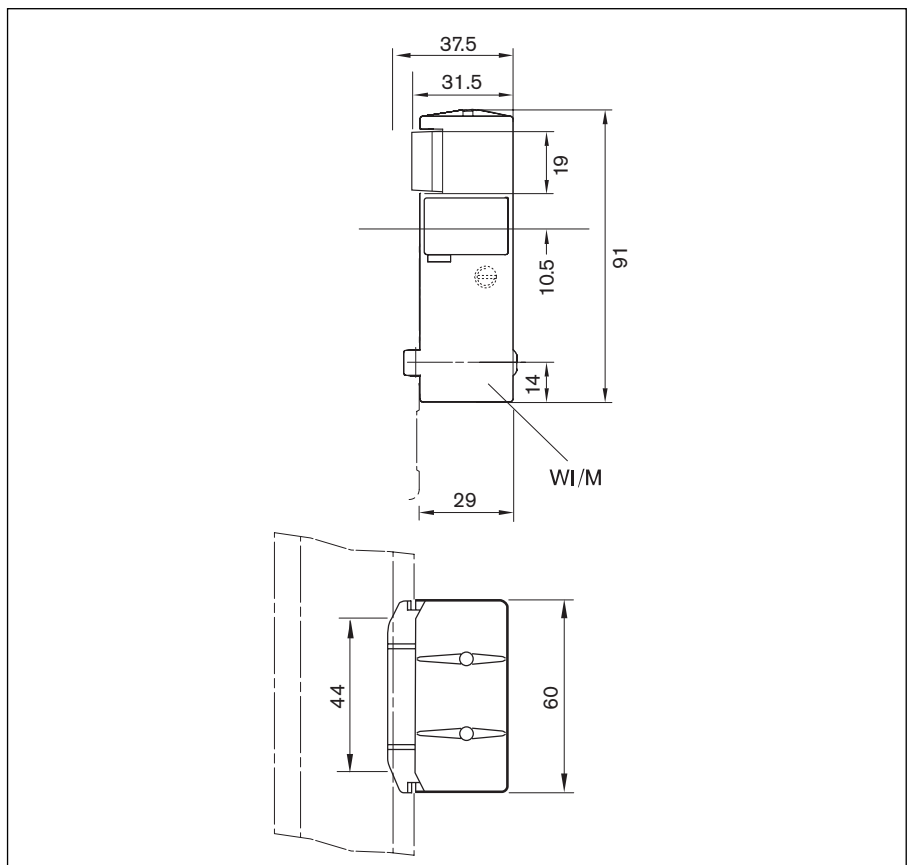
When used for accumulation control, the WI/M is combined with a pneumatic cylinder switch. In this configuration, the slide actuation is directly converted into a pneumatic signal. A pneumatic accumulation control kit can then be constructed with the use of a VE4 stop gate.

How an accumulation control kit works: when the rocker is in the rest position, air is directed to the stop gate and pallets freely pass through. When the rocker is actuated by a pallet, the air is disabled and the stop gate begins queuing pallets.



Pneumatic Cylinder Switch

Dimensional Data for WI/M



Ordering Information for Mini Rocker Stop, WI/M

Description	Part Number
WI/M Rocker Module (Fastening Hardware Included)	3842 530 797
Pneumatic Cylinder Switch	3842 532 151