






Safety Solutions For Packaging










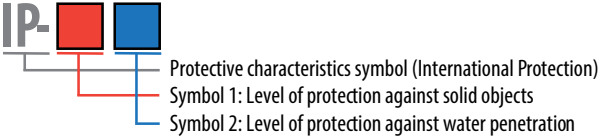
Hygienic Requirements










Mostly for the Food Market		
A3		Sanitary Standards, Inc. (3-A) is an association that performs a similar role to the EHEDG but for the US market, drafting directives for the hygienic processing and packaging of dairy products and other foodstuffs.
ECOLAB		Ecolab, Inc. is a leading global supplier of products and services within the field of industrial cleaning and hygiene, including the food processing sector. The company certifies long-term resistance to conventional cleaning agents and disinfectants.
EHEDG		The European Hygienic Engineering & Design Group (EHEDG) is a consortium made up of machine and component manufacturers and experts from the food industry, research institutes, and public health authorities that compiles directives for the hygienic processing and packaging of food, and develops tests used to check hygiene standards.
Diversity		Materials used for (machine) components are tested for resistance to cleaning agents and disinfectants produced by Diversey, and the relevant certificates are issued for individual components.
FDA		The Food and Drug Administration (FDA) is the US supervisory body for drugs and foodstuffs whose responsibilities include decreeing regulations on the use of substances in hygienic environments.

IP Rating Reference Guide

Ingress protection classifies and rates the degree of protection provided against intrusion, dust, accidental contact and water.

LevelA		mount of protection
0		No protection.
1		Solid objects 50 mm or larger in diameter (hand, etc.) do not penetrate.
2		Solid objects 12.5 mm or larger in diameter do not penetrate.
3		Wires or other solid objects 2.5 mm or larger in diameter do not penetrate.
4		Wires or other solid objects 1 mm or larger in diameter do not penetrate.
5		An amount of dust sufficient to interfere with normal operation of the device or create a safety problem does not enter.
6		Dust does not enter.



Level		Amount of protection	Test procedure
0	No special protection.	No protection against water penetration.	No test.
1		Suffers no damaging effects from vertically dripping water.	Placed under vertically dripping water from a drip-ping tester for 10 minutes.
2		Suffers no damaging effects from water dripping no more than 15° out of plumb.	Placed at an inclination of 15° under dripping water from a dripping tester for 10 minutes (2.5 minutes in each direction).
3		Suffers no damaging effects from water sprayed from an angle up to 60° from plumb.	Using the tester at right, the device is sprayed from each side up to an angle of 60° from plumb for 10 minutes).
4		Suffers no damaging effects from water sprayed from all directions.	Using the tester at right, the device is sprayed from all directions for 10 minutes.
5		Suffers no damaging effects from and direct jet spray from all directions.	Using the tester at right, each square meter of the case is sprayed from all directions for 1 minute, for a total of at least 3 minutes.
6		Suffers no damaging effects from strong and direct jet spray from all directions.	Using the tester at right, each square meter of the case is sprayed from all directions for 1 minute, for a total of at least 3 minutes.
7		Water does not penetrate when the device is submerged for a specified amount of time at a specified pressure.	The device is submerged for 10 minutes at depth of 1 m in water (if the height of the device is less than 850 mm).
8		The device can be used on a regular basis under water.	Decided by the manufacturer and the user of the device.
9K		Protected against high temperature.	High pressure water and steam.

Index – Primary Packaging

Liquid	Process		Machine Types
Solid		Liquid Filling	Rotary Bottle filler, Linear bottle filler, Tube filling machine, Aerosol filler, Vial filler.
		Capping, Closing or Seaming	Screw capping, Crown capping, Press-on lidding, Can seaming, Aerosol valve closing, Mascara closing, Can over capping, Finger pump placer.
		Assortment Packer or Tray Loading Unit	Vision-guided cross-flow, Delta Robot feed placer for stacking and placing products into lug-chain of flow-wrapper. Vision-guided inline-flow assortment packer and tray loader.
		Solid filling	Net weighing machine, gross weighing machine, linear/circular multi-head weighing machine, Auger filler, Volumetric cup filler, Count filler.
		Vertical / Horizontal Form Fill & Seal	Flow wrapper, form fill and seal, Aseptic carton packaging, Pouch, Stick FFS, Bags packaging, stretch film and seal.
		Thermoform, Fill & Seal of Blistering	Tray sealer, fill & seal; Tray thermoform, fill & seal; Cup thermoform, fill & seal; Blister thermoform, fill & seal; Modified atmosphere packaging TFFS

Index – Secondary Packaging

Process		Machine Types
	Label, Code or Sleeve Applicator	Glue labelling, Heat seal labelling, Pre-gummed label applicators, Tag labelling, Hot foil labelling, Wet ink coding machines, Continuous steam ink-jet coding, Laser coding, Shrink sleeve applicator, Temper evident sleeve application.
	Carton Erector	Carton blank erecting, Tray erecting, Rotary carton feeder, Rotary pick & place feeder / inserter / lid fitter / tray denester.
	End-load or Side-load Cartoner	Tray erect, load & seal, Carton form, load & seal, Sleeve wrapping, Horizontal end-load cartoner, Horizontal cartoner.
	Top-load or Wrap-around Cartoner	Vertical cartoner, Top-load cartoner, Inline-flow Delta Robot carton loader, Multi-axis pick & place robotic cartoner, Pre-made bag-in-box cartoner, Reel fed bag-in-box cartoner, Wrap-around cartooning, Wrap-around carton sleeving.
	Glue, Fold & Tuck Closing Unit	Carton closing, End flap carton closing, Three-flap carton closing.
	Shrink Wrapper	Shrink-wrap machines (tunnels), Stretch-wrap machines, Tray shrink machines, Stretch banding machines (stretch film bander), Spiral wrapping machines, and Sleeve wrapping machines.

Index – Final Packaging - End Line

Process		Machine Types
	Erect, Form or Close	Shrink-wrap machines (tunnels), Stretch-wrap machines, Tray shrink machines, Stretch banding machines (stretch film bander), Spiral wrapping machines, Sleeve wrapping machines
	Case Packer	Tray / case erector, Case / tray forming, Tray denester / stacker, Crate stacking / unstacking, Division inserting machine, Partition placer and lid fitter, Case tapers (case sealer), Case strapping machines
	Palletizer / De-Palletizer	Drop packing, Top-load case packing, Side-load case packing, Bottom-load case packing, Crate packer, Wrap-around case packing, Wrap-around lidding machine

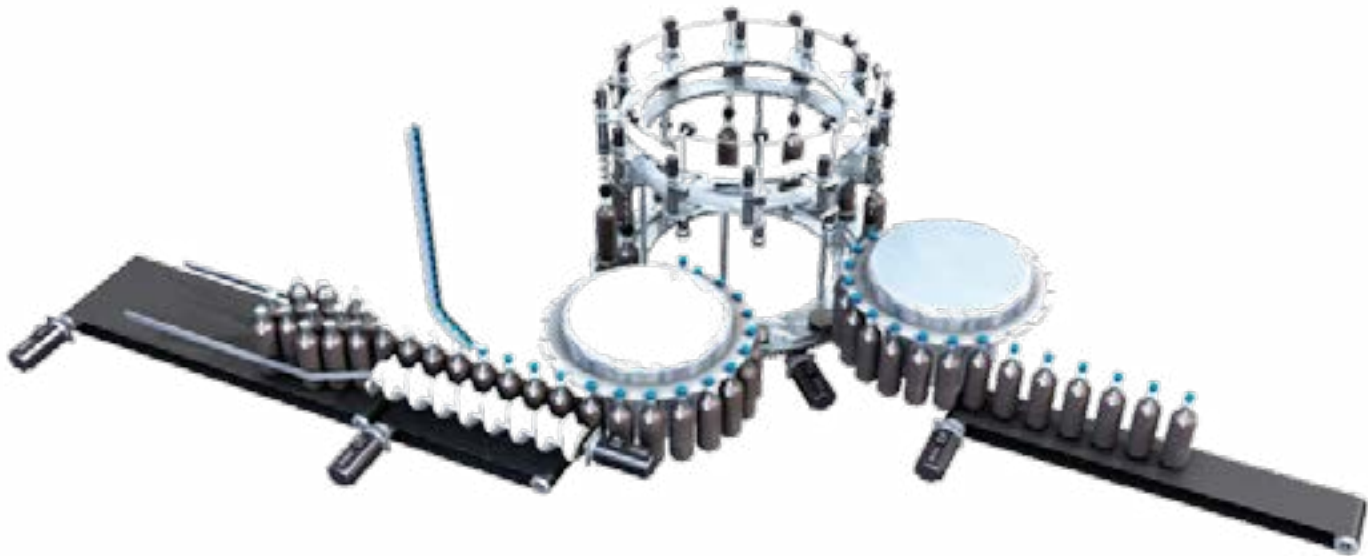
Primary Packaging: Liquid Filling









Machine Type:
Rotary Bottle filler, Linear bottle filler, Tube filling machine, Aerosol filler, Vial filler.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
SS2	Safety Stop 2 (SS2)
SDI	Safe Direction (SDI)
STO	Safe Torque Off (STO)

Primary Packaging: Capping, Closing or Seaming









Machine Type:
Screw capping, Crown capping, Press-on lidding, Can seaming, Aerosol valve closing, Mascara closing, Can over capping, Finger pump placer.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
SS2	Safety Stop 2 (SS2)
SDI	Safe Direction (SDI)
STO	Safe Torque Off (STO)

Primary Packaging: Assortment Packer or Tray Loading Unit









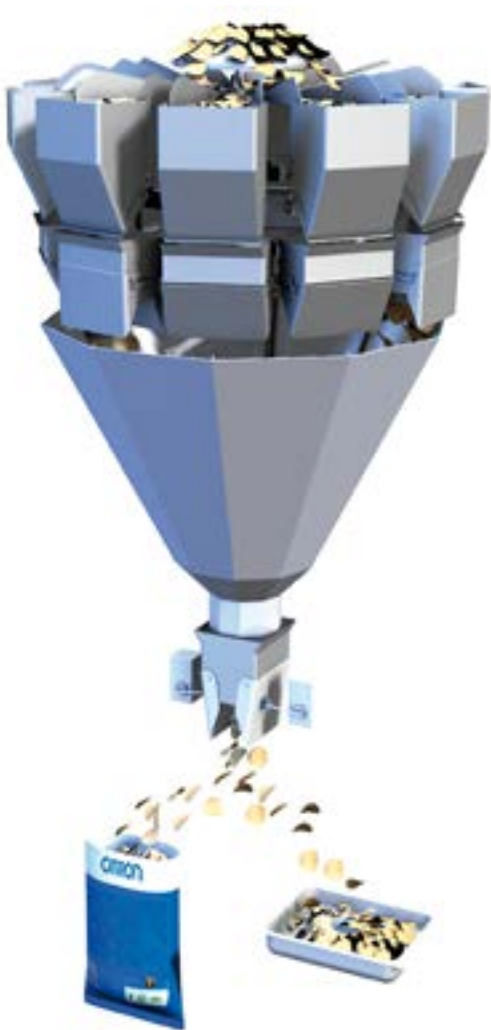
Machine Type:
Vision-guided cross-flow Delta Robot feed placer for stacking and placing products into lug-chain of flow-wrapper. Vision-guided inline-flow assortment packer and tray loader.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
SS2	Safety Stop 2 (SS2)
SDI	Safe Direction (SDI)
STO	Safe Torque Off (STO)

Primary Packaging: Solid Filling







Machine Type:
Net weighing machine, gross weighing machine, linear/circular multi-head weighing machine, Auger filler, Volumetric cup filler, Count filler.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
EDM	External Device Monitoring



Primary Packaging: Vertical & Horizontal Form Fill and Seal

Machine Type:
Flow wrapper, form fill and seal, Aseptic carton packaging, Pouch, Stick FFS, Bags packaging, stretch film and seal.







Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
SS2	Safe Stop 2 (SS2)
SDI	Safe Direction (SDI)
STO	Safe Torque Off (STO)
EDM	External Device Monitoring



Secondary Packaging: Thermoform, Fill & Seal of Blistering








Machine Type:
Tray sealer, fill & seal; Tray thermoform, fill & seal; Cup thermoform, fill & seal; Blister thermoform, fill & seal; Blow mould, form, fill & seal; Modified atmosphere packaging TFFS.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
STO	Safe Torque Off (STO)
EDM	External Device Monitoring

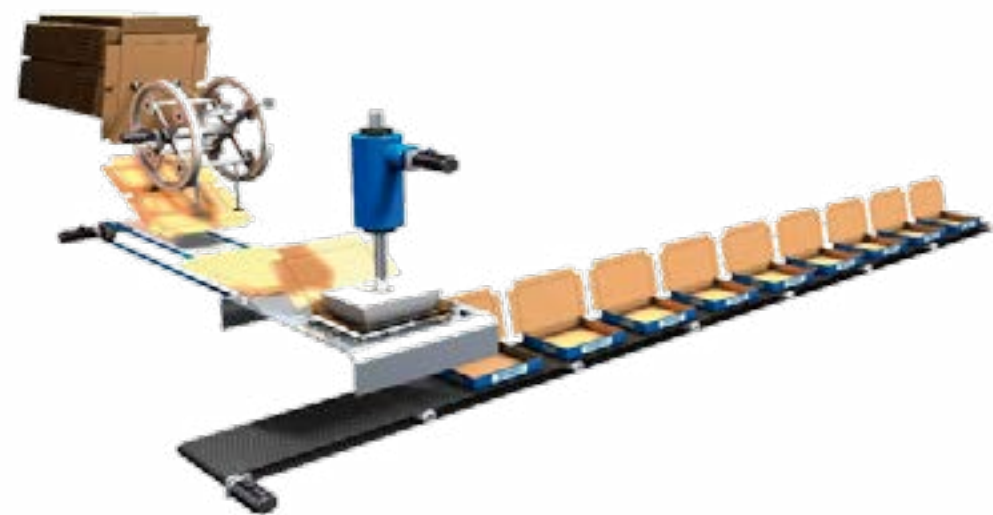
Secondary Packaging: Label, Code or Sleeve Applicator



Machine Type:
Glue labelling, Heat seal labelling, Pre-gummed label applicators, Tag labelling, Hot foil labelling, Wet ink coding machines, Continuous steam ink-jet coding, Laser coding, Shrink sleeve applicator, Temper evident sleeve application.

Safety Function	
	Guard Monitoring
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
EDM	External Device Monitoring

Secondary Packaging: Carton Case Erector









Machine Type:
Carton blank erecting, Tray erecting, Rotary carton feeder, Rotary pick & place feeder / inserter / lid fitter / tray denester.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Safety Light Curtains
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
STO	Safe Torque Off (STO)
EDM	External Device Monitoring

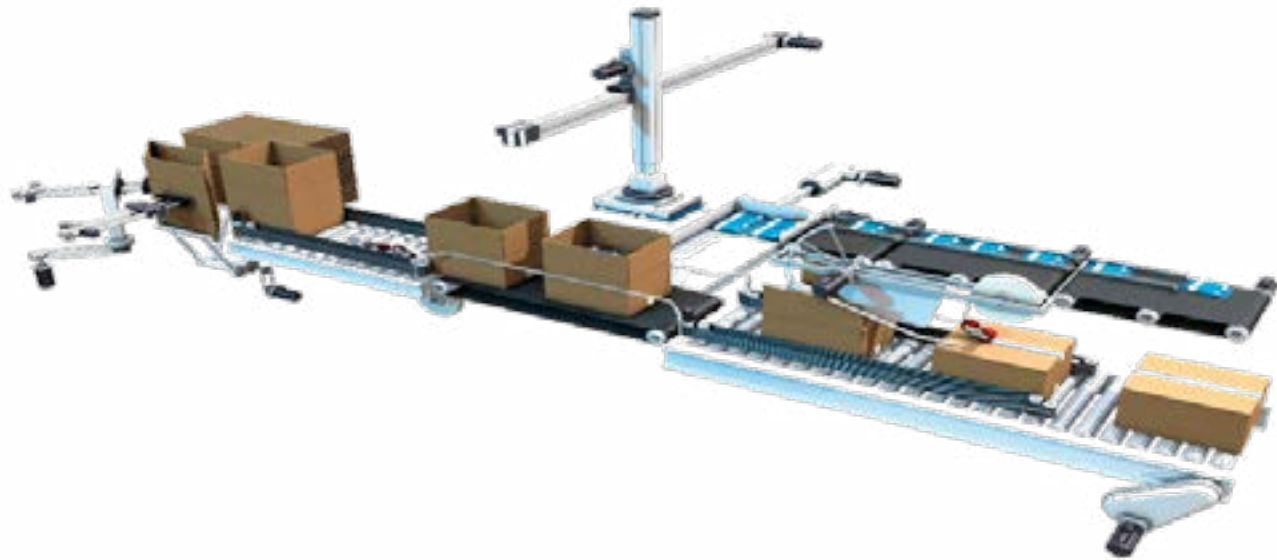
Secondary Packaging: End-load or Side-load Cartoner









Machine Type:
Tray erect, load & seal, Carton form, load & seal, Sleeve wrapping, Horizontal end-load cartoner, Horizontal cartoner.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Safety Light Curtains
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
SS2	Safety Stop 2 (SS2)
STO	Safe Torque Off (STO)
EDM	External Device Monitoring

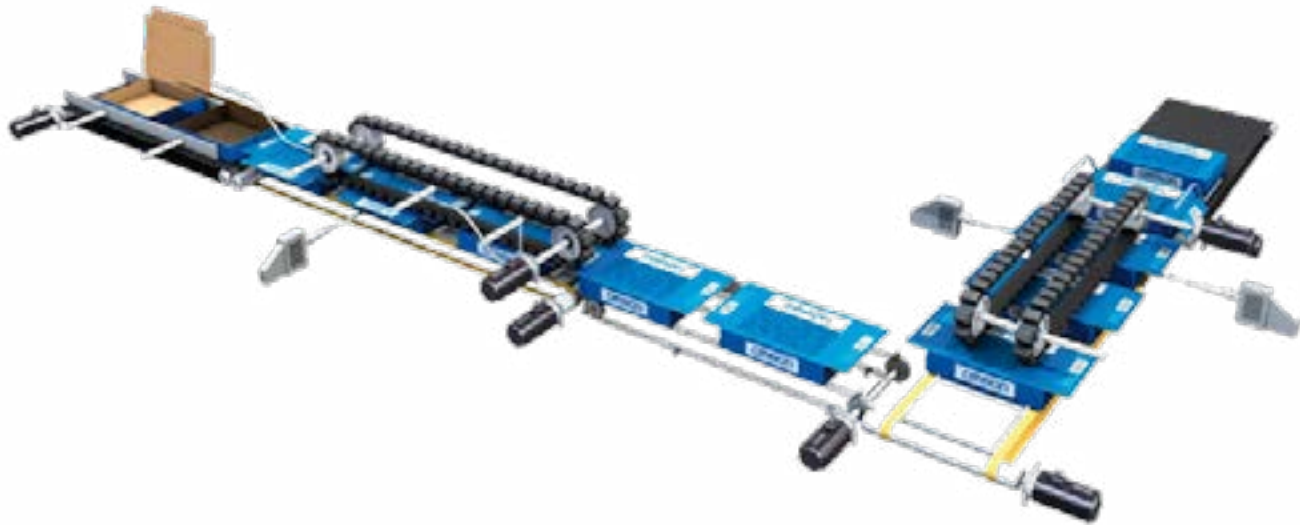
Secondary Packaging: Top-load or Wrap-around Cartoner









Machine Type:
Vertical cartoner, Top-load cartoner, Inline-flow Delta Robot carton loader, Multi-axis pick & place robotic cartoner, Pre-made bag-in-box cartoner, Reel fed bag-in-box cartoner, Wrap-around cartooning, Wrap-around carton sleeving.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
STO	Safe Torque Off (STO)
EDM	External Device Monitoring

Secondary Packaging: Glue, Fold & Tuck Closing Unit

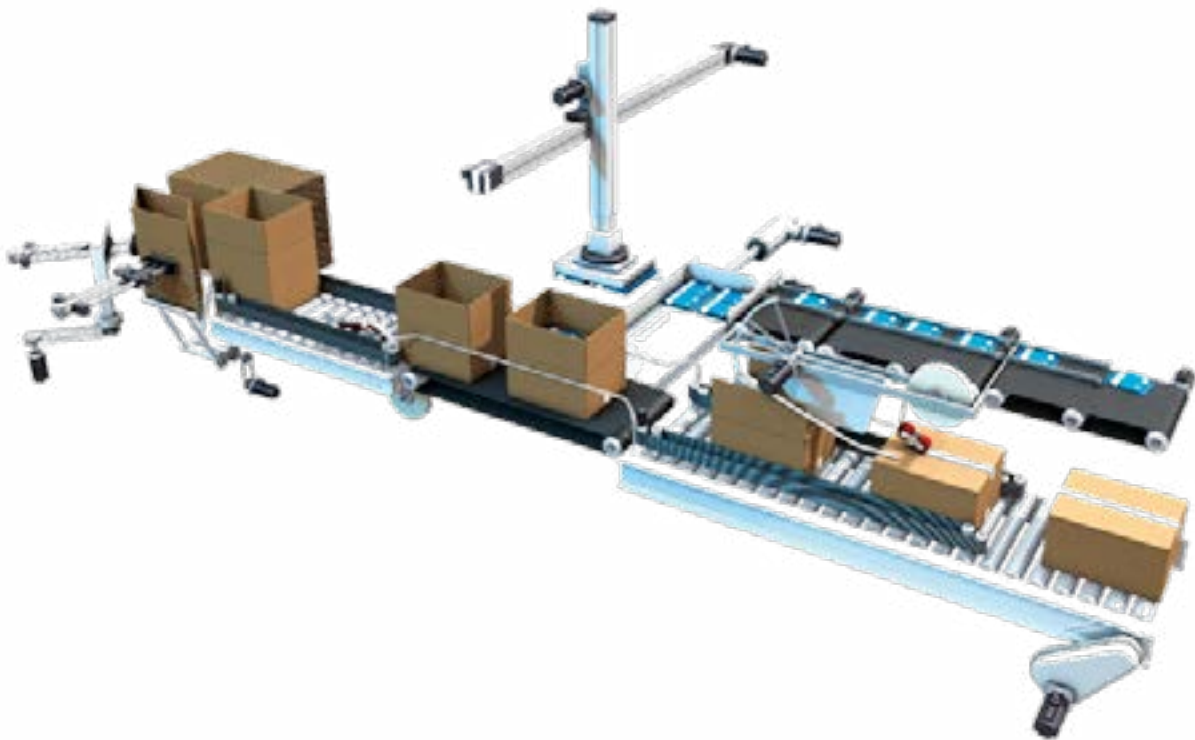


Machine Type:
Carton closing, End flap carton closing, Three-flap carton closing.







Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
STO	Safe Torque Off (STO)
EDM	External Device Monitoring

Secondary Packaging: Shrink Wrapper

Final Packaging - End Line: Erect, Form or Close



Machine Type:
Shrink-wrap machines (tunnels), Stretch-wrap machines, Tray shrink machines, Stretch banding machines (stretch film bander), Spiral wrapping machines, Sleeve wrapping machines.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
SLS	Safety Speed Limit (SLS)
STO	Safe Torque Off (STO)
EDM	External Device Monitoring








Machine Type:
Shrink-wrap machines (tunnels), Stretch-wrap machines, Tray shrink machines, Stretch banding machines (stretch film bander), Spiral wrapping machines, Sleeve wrapping machines.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Logic
STO	Safe Torque Off (STO)
EDM	External Device Monitoring

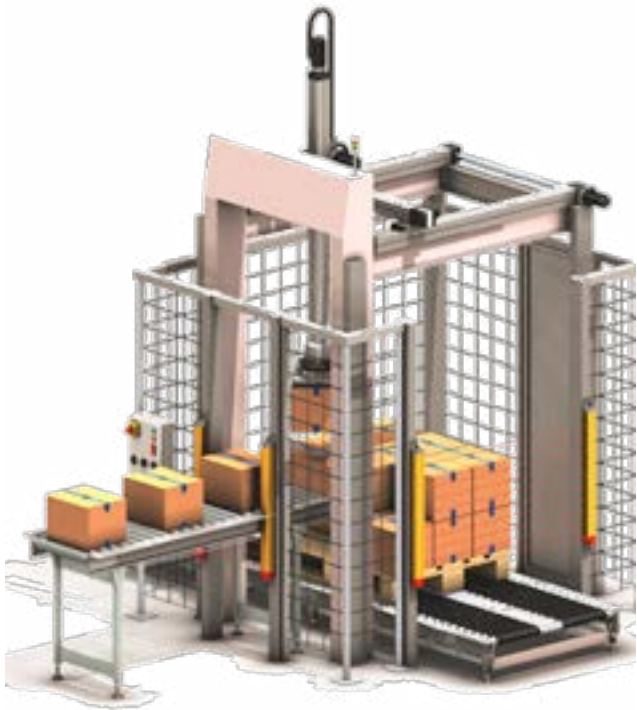
Final Packaging - End Line: Case Packer










Machine Type:
Tray / case erector, Case / tray forming, Tray de-nester / stacker, Crate stacking / unstacking, Division inserting machine, Partition placer and lid fitter, Case tapers (case sealer), Case strapping machine.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Light Curtain
	Safety Logic
STO	Safe Torque Off (STO)
EDM	External Device Monitoring








Final Packaging - End Line: Palletizer / De-Palletizer



Machine Type:
Drop packing, Top-load case packing, Side-load case packing, Bottom-load case packing, Crate packer, Wrap-around case packing, Wrap-around lidding machine.

Safety Function	
	Guard Monitoring
	Guard Interlocking (only if inertia)
	Jog or Enabling Switch
	Operating Mode Selector
	Emergency Stop
	Safety Light Curtain
	Safety Logic
STO	Safe Torque Off (STO)
EDM	External Device Monitoring

Suggested Product Families by Safety Function

Safety Function	Recommended Product Family	
	Guard Monitoring	D41D D40P
	Guard Interlocking (only if inertia)	D41L D41G D4SL-N
	Jog or Enabling Switch	A4EG
	Safety Light Curtains	F3SG-SRA F3SG-SRB
	Operating Mode Selector	A22TK
	Emergency Stop	A22N Rope Switches (ER series)
	Synchronize all movements, Safety Logic	NXSL5 NXSL3
SLS	Safety Speed Limit (SLS)	1SA
SS2	Safety Stop 2 (SS2)	
SDI	Safe Direction (SDI)	
STO	Safe Torque Off (STO)	
EDM	External Device Monitoring (EDM)	G7SA

ER Rope Pull Switch Series – Compact Design and Robust Housing

Key Features

- Models with rope span up to 200m
- Heavy-duty and vibration-tolerant housing
- Left-, right- and center-mounted switch available
- The RK Series rope tension kit comes with all required hardware for most installations
- Models with optional E-stop pushbutton and status indicators
- Models available for extreme low temperatures
- Different contact configurations available
- Rubber bellows contain UV inhibitor



Description	E-Stop	Cable Status Indicator	Contacts	Wiring Entry	Max. Rope Span	Part Number	Model
Compact body	Included	–	2N/C+1N/O	3 x 1/2 in. NPT	40 m / 131 ft.	44506-4120	ER5018-021NE
	–	–				44506-4020	ER5018-021N
			–	3 N/C		3 x M20	44506-4040
Left or right mounting	Included	–	2N/C+1N/O	3 x 1/2 in. NPT	80 m / 262 ft.	44506-5220	ER6022-021NE
		Included (24VDC)				44506-5420	ER6022-021NEL
Right operation mounting	Included	Included (24VDC)	4 N/C + 2 N/O	4 x 1/2 in. NPT	125 m / 410 ft.	44506-6520	ER1022-042NELR
Left operation mounting						44506-6420	ER1022-042NELL
Center mounting	Included	Included (24VDC)	4N/C+2 N/O	4 x 1/2 in. NPT	200 m / 656 ft.	44506-7420	ER1032-042NEL
		Included (120VAC)				44506-7421	ER1032-04NELAC

Accessories

Short Product Description	Description	Part Number
RK05	RK Rope Tension Kit, 5 m	44506-2705
RK10	RK Rope Tension Kit, 10 m	44506-2710
RK30	RK Rope Tension Kit, 30 m	44506-2730
RK50	RK Rope Tension Kit, 50 m	44506-2750
SM06-TG00	Tensioner Gripper, Stainless Steel	44506-4700
SM06-RPSS	Rope Pulley, Stainless Steel	44506-4780
SM06-SP50	Spring, Stainless Steel	44506-4750
SM06-SP30	Spring, Galvanized	44506-0730

G7SA Forcibly Guided Relay

Key Features

- Forcibly guided contacts
- Conforms to EN 50205
- 6A at 240VAC and 6A at 24VDC for resistive loads
- Reinforced insulation between inputs and outputs and poles
- 4- and 6-pole relays available
- Push-in Plus Technology - easy wiring



Terminal Type*	Poles	Contact Configuration	Coil rated voltage*	Part Number
PCB treminals	4 poles	DPST-NO, DPST-NC	24VDC	G7SA-2A2B DC24
		3PST-NO, SPST-NC		G7SA-3A1B DC24
	6 poles	3PST-NO, 3PST-NC		G7SA-3A3B DC24
		4PST-NO, DPST-NC		G7SA-4A2B DC24
		5PST-NO, SPST-NC		G7SA-5A1B DC24

Terminals

Mounting	Terminal Type	Poles	Led Indicator	Coil rated*	Part Number
Front mounting	Screw terminal	4 poles	Yes	24VDC	P7SA-10F-ND DC24
	Push-In Plus terminals				P7SA-10F-ND-PU DC24
	Screw terminal	6 poles	No		P7SA-14F
	Screw terminal		Yes		P7SA-14F-ND DC24
	Push-In Plus terminals				P7SA-14F-ND-PU DC24

*Note: Additional options available, refer to datasheet

A22TK Safety Key Selector Switch

Key Features

- Selector Switch for secure equipment activation during maintenance.
- 30 types of exclusive keys make it more difficult to disable.
- The trapped key of the D4JL Guard Lock Safety-door Switch has the same shape as the locking key of the D4SL-SK10-L K Slide Key Unit. Units can be combined to improve safety.
- Common to the switch part of Emergency Stop Switch A22E. (Non-lighted model only)



Key release position	Key position of NC contact closing	Contact Configuration	Key availability	Model*
		SPST-NC	Yes**	A22TK-2LL-01-K01
		DPST-NO + SPST-NC		A22TK-2LL-21-K01
		DPST-NC + SPST-NO		A22TK-2LR-12-K01

*These are preferred part numbers in stock, more contacts configuration, key release and key position of NC contact closing options available

**Two key are provided

Accessories

Description	Part Number
Key type compatible with door switches D4JL and selector switch A22TK*	D4JL-K1
	D4JL-K2
	D4JL-K3
Control Box, one hole and yellow box	A22Z-B10Y

*Thirty types of trapped keys can be manufactured. To unify keys when using D4JL and A22TK, specify the same key type.

A22NE-PD Emergency Stop

Key Features

- Install in 22mm or 25mm diameter panel cutout
- Push-In Plus terminal models available
- Lock Detection Contacts to detect improper installation and damage to lock lever
- IP65 and IP69K Rated models available
- Models with up to four contacts are available
- Lighted options available
- Pull Reset and Turn Reset options available
- 30mm, 40mm, 60mm Operator Heads available



Design Type	Operator Unit Size	IP Rating	Reset Function	Contact Configuration	Box Included	Model
Lighted, 24V	40mm	IP65	Turn-Reset	2NC	No	A22NE-M-P202-N
Non Lighted	40mm	IP65	Turn-Reset	2NC	Yes	A22NE-M-P202-N-B

Accessories

Description	Part Number
Control Box, one hole and yellow box	A22Z-B101Y
Legend Plates for Emergency Stop, 60 mm diameter, black letters on yellow background, EMERGENCY STOP is indicated on the plate	A22Z-3466-1

A4EG Enable Switch

Key Features

- In addition to the standard models, the lineup also includes models with an emergency stop switch and models with a momentary operation switch.
- An optional Holding Key (sold separately) provides a versatile method for selecting modes.
- Equipped with conduit connector.



Monitor Switch	Pushbutton	Model
1 NC (grip)	None	A4EG-C00041
None	Emergency Stop Switch (2NC)	A4EG-BE2R041
None	Momentary operation switch (2NO)	A4EG-BM2B041

Accessories

Description	Part Number
Rubber Cover for replacement	A4EG-OP1
Mounting Bracket for Enable switch	A4EG-OP2
Holding Key	A4EG-OP3

1SA, Safe Motion Servo Drives and Motors

- Key Features
- EtherCAT based motion with built in advanced safety features
 - SIL 3 PLe level safety for de
 - Safe stop features: STO, SOS, SS1 And SS2
 - Safe motion features: SLS, SLP and SDI
 - Safe brake control (SBC) for external safety rated brake control



RPM	Capacity	Torque	Motor	Drive	Motor	Drive
			200 VAC		400 VAC	
3000	.2 kW	0.637	R88M-1AM20030T-[x]*S2	R88D-1SAN02H-ECT	-	-
3000	.4 kW	1.27	R88M-1AM40030T-[x]*S2	R88D-1SAN04H-ECT	-	-
3000	.75 kW	2.39	R88M-1AM75030T-[x]*S2	R88D-1SAN08H-ECT	R88M-1AL75030C-[x]*S2	R88D-1SAN10F-ECT
3000	1 kW	3.18	R88M-1AL1K030T-[x]*S2	R88D-1SAN10H-ECT	R88M-1AL1K030C-[x]*S2	R88D-1SAN10F-ECT
3000	1.5 kW	4.77	R88M-1AL1K530T-[x]*S2	R88D-1SAN15H-ECT	R88M-1AL1K530C-[x]*S2	R88D-1SAN15F-ECT
3000	2 kW	6.37	R88M-1AL2K030T-[x]*S2	R88D-1SAN20H-ECT	R88M-1AL2K030C-[x]*S2	R88D-1SAN20F-ECT
3000	2.6 kW	8.28	R88M-1AL2K630T-[x]*S2	R88D-1SAN30H-ECT	-	-
3000	3.0 kW	9.55	-	-	R88M-1AL3K030C-[x]*S2	R88D-1SAN30F-ECT
1500	1.5 kW	9.55	R88M-1AM1K515T-[x]*S2	R88D-1SAN15H-ECT	R88M-1AM1K515C-[x]*S2	R88D-1SAN15F-ECT
1500	2.7 kW	17.2	R88M-1AM2K715T-[x]*S2	R88D-1SAN30H-ECT	-	-
1500	3.0 kW	19.1	-	-	R88M-1AM3K015C-[x]*S2	R88D-1SAN20F-ECT

	Cables	Power Cables, with or without brake	Extension Cables
200 V	3,000-r/min 200 W, 400 W, 750 W	R88A-CX1A***BF-A	R88A-CX1AE***BF-A
200V	3,000-r/min 1 kW	R88A-CX1B***BF-A	R88A-CX1BE***BF-A
200V	3,000 RPM 1.5 kW 1,500 RPM Servomotors of 1.5 kW	R88A-CX1C***BF-A	R88A-CX1BE***BF-A
400 V	3,000 RPM 750 W, 1 kW, 1.5 kW, 2 kW, 3 kW 1,500RPM 1.5 kW, 3 kW		
200 V	3,000 RPM 2 kW, 2.6 kW 1,500 RPM 2.7 kW	R88A-CX1D***BF-A	R88A-CX1DE***BF-A
		1, 2, 3, 5, 10, 15 and 20 meter lengths	10 and 20 meter lengths

D41D - High-Coded Non-Contact Safety Door Switch

- Type 4 High-coded door switch, RFID
- Easy and quick automatic paring with Individual coding, single or multiple teaching type
- Three sizes of actuator, including flat and miniature to fit in narrow spaces or inside corners
- Symmetrical design for left and right mounting
- Approach direction can be either from the front or side
- Extensive diagnostic via a three-color LED indicators and diagnostic output
- Up to 31 safety door switches from D41 Series can be connected



Sensor	Part Number	Coding Level	Connector
Sensor	D41D-1CD-N1	High, Individual coding	M8 connector
	D41D-2CD-025N2	High, Individual coding with no limitation	M12 with 250 mm cable
	Part Number	Type	Dimensions
Actuator ¹	D41D-A1	Standard	W x D x H= 39 x 29.5 x 18 (mm)
	D41D-A2	Flat	W x D x H= 60 x 16 x 6.8 (mm)
	D41D-A3	Miniature	W x D x H= 22 x 9 x 7 (mm)
1. Actuators sold separately			

Accessories

	Part Number	Description
Cables	D41D-8P5-CFM8-702M	Cable, 2m, M8 connector, IP67
	D41D-8P5-CFM8-705M	Cable, 5m, M8 connector , IP67
	D41D-8P5-CFM8-710M	Cable, 10m, M8 connector , IP67
	D41L-8P5-CFM12-905M	Cable, 5m, M12 connector, IP69
	D41L-8P5-CFM12-910M	Cable, 10m, M8 connector, IP69
Sealing Kits	D41D-SK	Seal mounting holes. Contains: 4 flat plugs and 4 plugs with rim for high screw head
Mounting Kits	D41D-MS	Contains: 2 mounting plates and 4 ferrule plugs

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

D41G - Type 4 High-Coded Guard Lock Switch

- Type 4 High-coded door switch, RFID
- Easy and quick automatic pairing with individual coding, single or multiple teaching type
- Power to lock and power to unlock versions available
- OSSD configuration for guard monitoring only or guard and lock monitoring
- Extensive diagnostic via a three-color LED indicators and diagnostic output
- Easily mounted to standard aluminum profile systems
- Up to 31 devices connected in series



	Part Number	Lock and Release	Teaching	OSSD Configuration	Connection Method
Sensor ¹	D41G-1YDA-N2	Power to unlock	Individual coding, single teaching	Guard monitoring and lock monitoring	M12 connector
	D41G-2YDA-N2	Power to unlock	Individual coding, multiple teaching		
	D41G-2YDG-N2	Power to lock			
	D41G-2YDG-N2	Power to lock			
	D41G-2YDG-T1	Power to lock			
	D41G-2ZDA-T1	Power to unlock		Only guard monitoring	Screw Terminal

1. Actuators sold separately

Accessories

	Part Number	Description
Cables	D41L-8P5-CFM12-905M	Cable, 5m, M12 connector, IP69
	D41L-8P5-CFM12-910M	Cable, 10m, M8 connector, IP69

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

F3SG-SR - Machine Guard Safety Light Curtain

- Three-color Area Beam Indicators (ABIs) enable easy alignment and quick troubleshooting
- Up to 30m protection range (25mm resolution and up)
- IO-Link communication capability helps improve preventive maintenance programs
- Advanced programming features (muting, blanking, pre-reset, warning zone, etc.) are available on all models.
- IP67G rating is standard, with IP69K option available (F3SG-SRB only)



Resolution	Protective Height (mm)	Area Beam Indicators	Part Number
14 mm	160	No	F3SG-4SRB0160-14
	320		F3SG-4SRB0320-14
	400		F3SG-4SRB0400-14
	480		F3SG-4SRB0480-14
	560		F3SG-4SRB0560-14
	640		F3SG-4SRB0640-14
	720		F3SG-4SRB0720-14-F
	1200		F3SG-4SRB1200-14
25 mm	360		F3SG-4SRB0360-25-F
	440		F3SG-4SRB0440-25-F
	600		F3SG-4SRB0600-25-F
	680		F3SG-4SRB0680-25-F
	760		F3SG-4SRB0760-25-F
	840		F3SG-4SRB0840-25-F
	920		F3SG-4SRB0920-25-F
	1000		F3SG-4SRB1000-25-F
	1200		F3SG-4SRB1200-25
	1440		F3SG-4SRB1440-25
	1520		F3SG-4SRB1520-25
	1600		F3SG-4SRB1600-25
	1840		F3SG-4SRB1840-25
14 mm	400	Yes	F3SG-4SRA0400-14
	560		F3SG-4SRA0560-14
	720		F3SG-4SRA0720-14-F
	880		F3SG-4SRA0880-14-F
	1200		F3SG-4SRA1200-14
25 mm	280		F3SG-4SRA0280-25-F
	440		F3SG-4SRA0440-25-F
	600		F3SG-4SRA0600-25-F
	760		F3SG-4SRA0760-25-F
	920		F3SG-4SRA0920-25-F
	1200		F3SG-4SRA1200-25
	1600		F3SG-4SRA1600-25
	1760		F3SG-4SRA1760-25

NX-SL5 - Safety Controller

- A versatile safety controller, with EtherCAT and EtherNet/IP capabilities, for integrated or stand-alone solutions, making machine safety design, installation, and maintenance easier
- Enable flexible manufacture by supporting different safety networks,CIP Safety and FSoE. Enable a hybrid system, when combining the NX-SL5 with the NX-102.
- Sysmac Studio offers a set of unique functions to make functional safety management easier as Safety Signature Check and Online Function Verification. In addition, reduce the design cycle with automatic programming and simple automatic test.

Product	Description	Model
NX-SL5 Safety Controller Units	Safety PLC, up to 1024 safety I/O and 128 safety connections	NX-SL5500
	Safety PLC, up to 2032 safety I/O and 254 safety connections	NX-SL5700

Product	Type	Protocol	Am. of Ports	Number of Networks	Safety Inputs	Safety Outputs	Test Outputs	Model
Communication & Remote Safety I/O Units	Network Coupler	EtherNet/IP	3	2				NX-CSG320
	Remote Module of safety I/Os	EtherNet/IP	2	1	12	4	12	GI-SMD1624
					12	-	12	GI-SID1224

Product	Type	No. of Points	Description	Model
Safety Input & Output Units	Input	4	4 safety input points (PNP) with 2 test outputs	NX-SIH400 Ver 1.1
		8	8 safety input points (PNP) with 2 test outputs	NX-SID800
	Output	2	2 safety outputs (PNP)	NX-SOH200
		4	4 safety outputs (PNP)	NX-SOD400

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

NX-SL3 - Safety Controller

- Effortless integration into the most common PLC’s platforms in the market, providing reliable safety solutions while supporting different configurations.
- Offer a direct connection to any PLC using an EtherNet/IP coupler, and build a stand-alone system. For larger projects, with a higher number of safety devices distributed over a larger area, using an EtherCAT coupler supports EtherCAT and FSoE.
- Sysmac Studio offers a set of unique functions to make functional safety management easier as Safety Signature Check and Online Function Verification. In addition, reduce the design cycle with automatic programming and simple automatic test.

Product	Type	Model
NX-SL3 Safety Controller Units	Safety PLC, up to 256 safety I/O and 32 safety connections *	NX-SL3300 Ver 1.1
	Safety PLC, up 1024 safety I/O and 128 safety connections *	NX-SL3500 Ver 1.1

* Only FSoE master connections supported

Product	Type	No. of Points	Description	Model
Safety Input & Output Units	Input	4	4 safety input points (PNP) with 2 test outputs	NX-SIH400 Ver 1.1
		8	8 safety input points (PNP) with 2 test outputs	NX-SID800
	Output	2	2 safety outputs (PNP)	NX-SOH200
		4	4 safety outputs (PNP)	NX-SOD400

Product	Communication Cycle	Protocol	Maximum number of NX I/O modules	Maximum Current I/O	Model
Network Couplers	250 to 4,000 us	EtherCAT Slave	63	4A	NX-ECC201
	125 to 10,000 us			10A	NX-ECC202
		NX-ECC203			
	4 to 1,000 us	EtherNet/IP Slave		NX-EIC202	

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

D40P - Non-Contact Safety Switches

- Hall effect technology provides solid state outputs for increased longevity
- LED indicates operation state
- Operates with all OMRON safety controllers and safety relays
- Connect up to 20 switches in series, up to PLd acc. EN ISO 13849-1



Body Size	Housing	Contacts	Cable Connection	Model
Elongated	Polyester Housing	2NC / 1NO	M12, 8 pin, fitted with 250 mm cable	D40P-LPC-21-M12
Small			M12, 8 pin, fitted with 250 mm cable	D40P-SPC-21-M12
Barrel			5 m pre-wired	D40P-BPC-21-05
Small	Stainless Steel	2NC / 1NO	5 m pre-wired	D40P-SMC-21-05
Small	Hygienic		M12, 8 pin, fitted with 250 mm cable	D40P-SHC-21-M12

Accessories

Type	Description	Model
Cables, M12 female - 8 pin to flying leads	5m	D40ML-CBL-M12-5M
Cables, M12 female - 8 pin to flying leads	10m	D40ML-CBL-M12-10M
T-Connector Connection Cable	T-Connector for M12 cable	D40P-8PTC-M12

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

D4SL-N - Guard Lock Safety Door Switch

- A wide variety of built-in switches can be used for various devices (4-, 5-, and 6-contact models are available)
- Removable terminal block for easy wiring and quick maintenance
- Key holding force of 1,300N
- Slide key available to prevent workers from becoming trapped inside the hazardous area
- Can be easily mounted on 40 × 40 mm aluminum frames



Type	Conduit Size	Contact Model	Head Material	Door Lock and Release	Indicator	Model
D4SL-N	1/2-14NPT *	2NC/1NO + 2NC/1NO	Metal	Mechanical lock/24VDC solenoid release	Yes	D4SL-N3NDA-D
	1/2-14NPT *	2NC/1NO + 2NC/1NO	Metal	24VDC solenoid lock/mechanical release	Yes	D4SL-N3NDG-D
	M20	3NC + 1NC/1NO	Resin	Mechanical lock/24VDC solenoid release	Yes	D4SL-N4GFA-D
	G1/2	2NC/1NO + 2NC/1NO	Resin	Mechanical lock/24VDC solenoid release	Yes	D4SL-N2NFA-D4

* M20, includes M20-to-1/2-14NPT conversion adapter.

Slides Key for D4SL

- Lockout Key to prevent workers from becoming trapped inside the hazardous area
- The plastic material makes the Slide Key suitable for lightweight doors



Description	Model
Slide Key Kit	D4SL-NSK10-LK
Slide Key with inner lever	D4SL-NSK10-LKH

Operation Keys for D4SL

Mounting Orientation	Special Function	Model
Horizontal	-	D4SL-NK1
Horizontal	Rubber cushions	D4SL-NK1G
Vertical	-	D4SL-NK2
Horizontal	Adjustable	D4SL-NK3

Note: Tables include representative part numbers. Bold models: Preferred Availability. Please consult the product page for more details.

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