






Tool Changers Fast & Easy Changeovers

norgren.com/automationsolutions

Engineering
GREAT Solutions

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Engineering GREAT solutions

We deliver GREAT solutions for our customers tackling the world's most demanding engineering challenges.

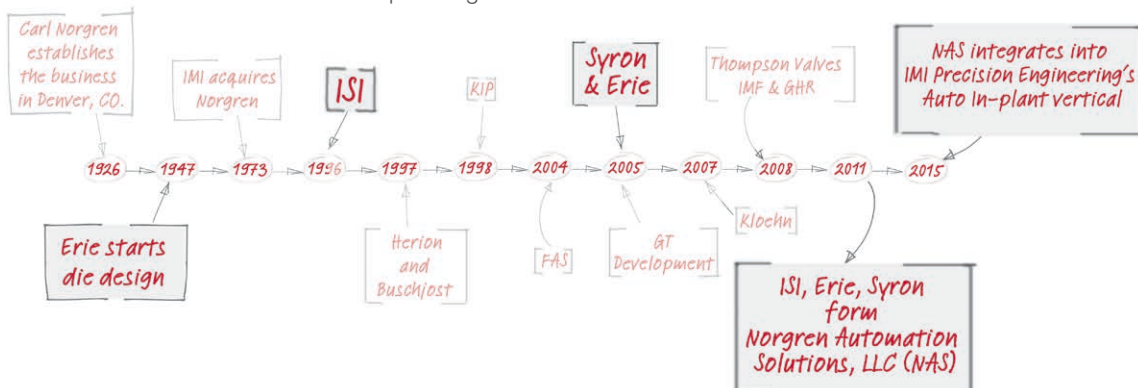
IMI Precision Engineering is a world leader in motion and fluid control technologies. Wherever precision, speed and engineering reliability are essential, we deliver exceptional solutions which improve the productivity and efficiency of our customers' equipment.

Part of IMI plc, (listed on the London Stock Exchange since 1966), IMI Precision Engineering has \$1,214m in sales generated from a sales and service network in 75 countries, as well as manufacturing capabilities in the USA, Germany, China, UK, Switzerland, Czech Republic, Mexico and Brazil. We support this with our global centers of technical excellence and facilities for CFD design and R&D testing. We employ a dedicated team of field engineers, sector specialists and key account managers – all committed to providing excellent service to our customers.

As a business, we aim to UNDERSTAND our customers' challenges. We then CONNECT our products, people and expertise in order to DELIVER exceptional service and solutions. Together these actions IMPROVE the performance of our customers' machinery.

We call this Engineering Great. We deliver it to customers through a world-class portfolio of high performance products, and strong partnerships for problem-solving utilizing our global network of support.

The Norgren Automation Solutions (NAS) Team creates capacity by designing and manufacturing automation and tooling that optimize production throughput in the press room and other material handling applications.





How we deliver value to our customers

Partnerships & problem solving

We have a global team of key account managers and over 400 highly experienced engineers – many with in-depth expertise of key industry sectors.

We recruit and develop the industry's top talent, offering the best training and exposure to world-class products and technologies with some of the world's leading businesses. The deep and combined experience this gives us means we have the skills, confidence and know-how to get closer to our customers, enabling us to understand their exact challenges and resolve them **precisely**.

Because of this our problem-solving is more effective, our solutions more targeted, our partnerships more productive.

High performance products

Our world-class products improve performance and productivity.

We have global manufacturing capability and technical centres of excellence, each dedicated to developing and rigorously testing new high performance products to meet **precise** industry and application needs. Helping improve performance and reduce downtime and energy consumption on production lines across the world, our world-class portfolio includes IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal. Having proven their value over years, they stand amongst the most trusted names in fluid and motion control. We are continuously adding to this portfolio through a programme of innovation and new product development.

Because of this, we're able help our customers solve the world's greatest engineering challenges – reliably, safely and efficiently.

Reliability

We deliver and support our high quality products through our global service network.

We have world-class manufacturing and sales and service operations in 75 countries, supported by investment in robust project management systems and lean localised production. Together, with our integrated supply chain, and the speed of our Express service we have the systems, processes and support to deliver quality products and aftersales service **precisely**, reliably, in full and on time, anywhere.



We get closer to our customers to understand their exact challenges

Our global reach

With established manufacturing facilities globally, we have the capability to cope with the most demanding of international projects. With a sales and service network in 75 countries, we have the reach and capability to ensure continuity of supply and local support where it is needed.



Sales & Service

📍 IMI Precision Engineering sales, manufacturing and technical centers

📍 Value Added Resellers/ Distributors



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Web: www.kamcosales.com

Mosier Fluid Power

2475 Technical Drive
Miamisburg, OH 45342

Tel: 800-232-0676
Email: sales@mosierohio.com

Motion Industries

1605 Alton Road
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Tel: 800-526-9328
Web: www.motionindustries.com

Nicholas Press Sales, Inc.

3077 Nationwide Parkway
Brunswick, OH 44212

Tel: 440-652-6604
Fax: 440-389-8666
Email: sales@nicholaspress.com
Web: www.nicholaspress.com

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118 Seaboard Lane #106
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Tel: 800-863-3164

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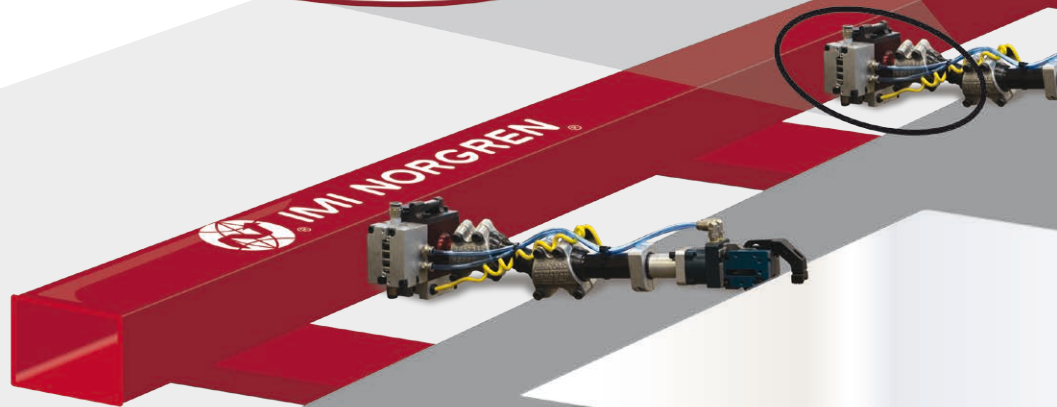
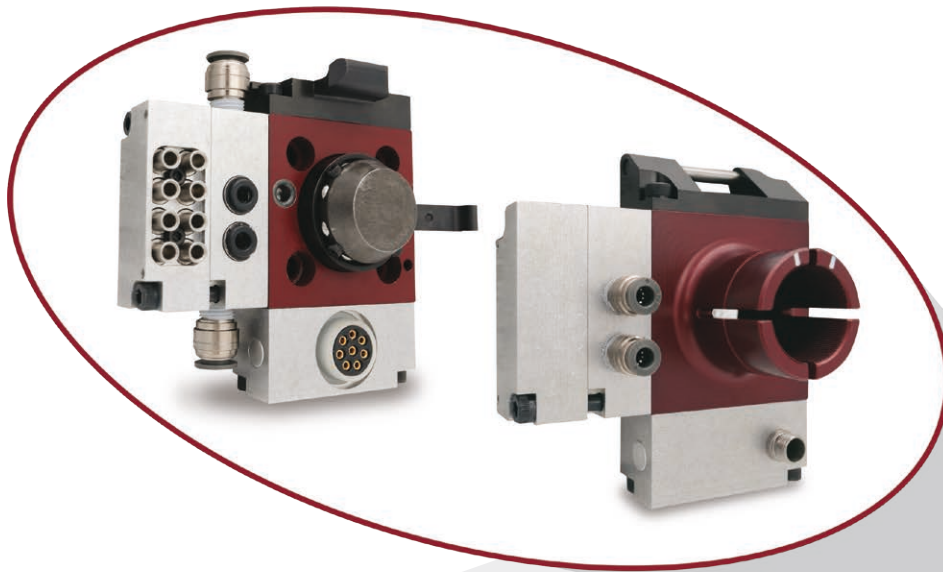
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Creating Capacity Since 1947

For over 65 years, Norgren Automation Solutions (NAS) has been a partner to automotive OEMs and Tier suppliers, solving pressroom automation problems and increasing press profitability. We focus on automation design, modular tooling and tooling integration for Tri-axis, Tandem and Crossbar presses, as well as welding operations.



> **Integrated Tooling (IT) and Automation**

World class press automation requires the integration of die and tooling designs from the earliest stages of part development. Our applications group designs, builds and installs highly productive tooling packages that increase press throughput, reduce setup time or downtime and improve ergonomics and safety.

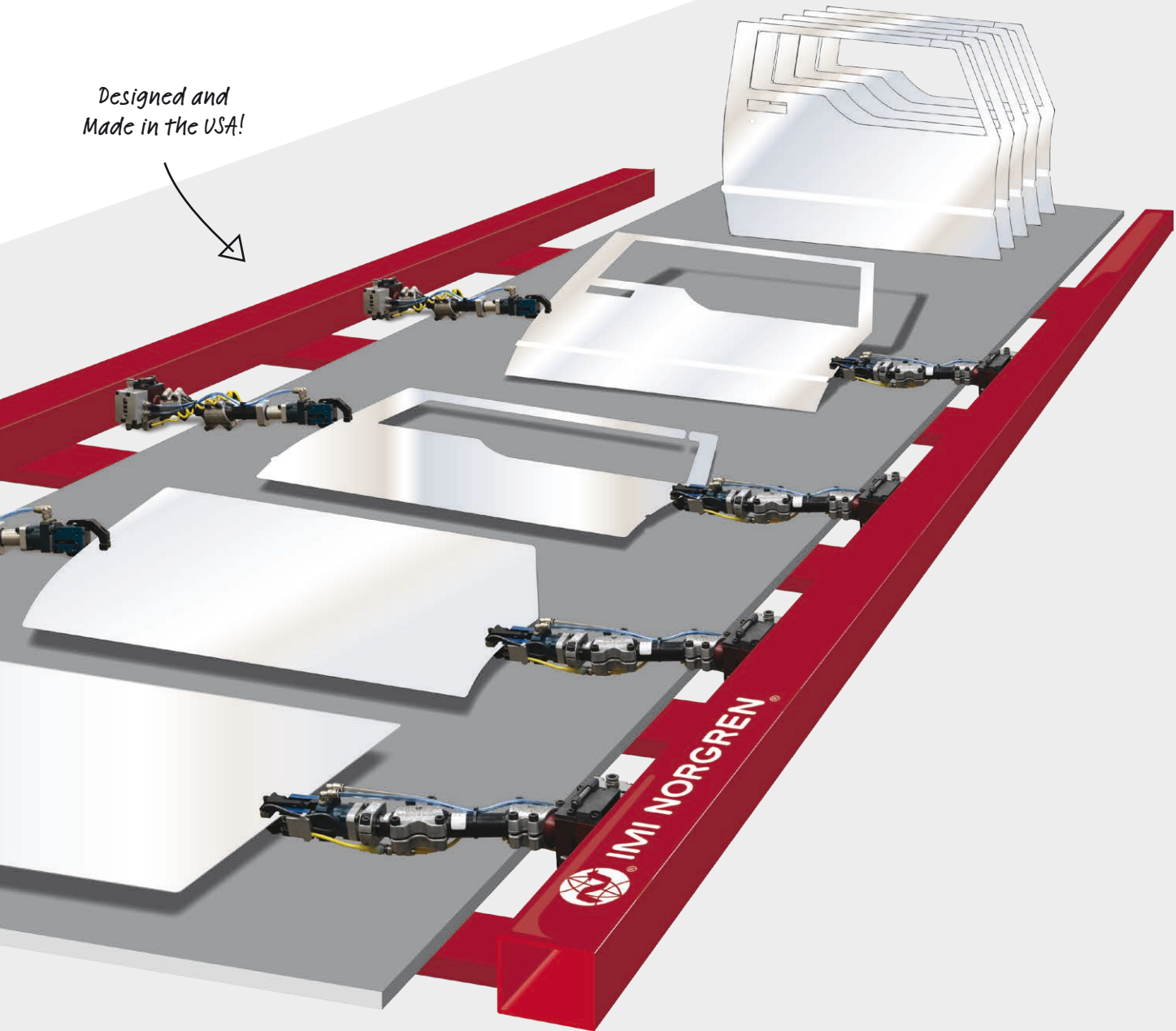
> **Made in the USA**

From front of line to end of line, our sensors, grippers, carbon fiber components, finger tooling and vacuum cup solutions are designed and built to last in the most challenging press environments all in the USA!

> **Engineering Solutions**

Engineering GREAT solutions for our customers is at the heart of everything we do. We help customers gain an advantage through increased output or capacity, reduced energy usage, and lower cost of ownership.

*Designed and
Made in the USA!*





TOOL CHANGER COMPARISON CHART

- Compare and contrast IMI Norgren Tool Changers to determine what's best for your application

TOOL CHANGER COMPARISON CHART

● Table I: The table below shows the differences between EZR/EZA, LRR/LRA and TRR/TRA



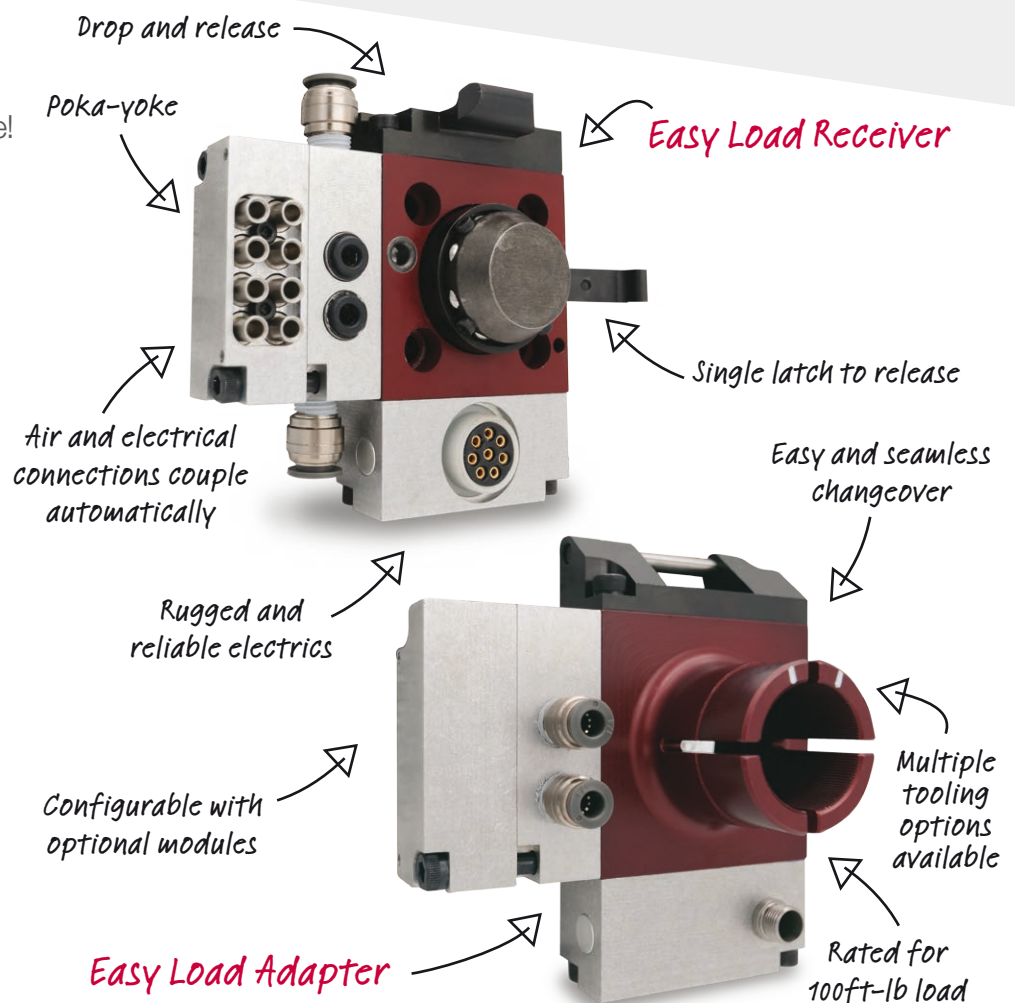
Functions	Easy Load	LRR/LRA	TRR/TRA
Applications	Tri-axis, Tandem, Crossbar Press, Dedicated rails, other robotic application	Tri-axis Press, Dedicated rails	Crossbar Press Tri-axis Press
One-touch installation (no manual connection of air, electric or mechanical coding)	●	●	●
Mounted to face of rail	●	●	●
Mounted to top of rail	●	●	●
Low profile	●	●	●
Compact size	Small	Medium	Medium
Various tooling style options	●	●	●
Configurable electrics, air, and mechanical coding	●	●	●
Drop and release tool installation	●	●	●
Compatible with different tooling options	●	●	●
Safety hook to prevent operator injuries	●	●	●
Ergonomic handle for tool disconnect	●	●	●
Price	\$\$	\$	\$\$

Example




EASY LOAD TOOL CHANGER

- Easy and simple to use- just align the handle to the hook, then drop and release!
- Face-mounted quick change tooling system
- Lightweight and compact size
- Reduce change over time with ability to connect two fingers at a time
- Improved ergonomics and safety
- Steel locating pins secure fingers in place



Fast Find Guide

● Easy Load

<p>Easy Load Receiver EZR</p>  <p>Page 16</p>	<p>Easy Load Adapter EZA</p>  <p>Page 18</p>
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EASY LOAD RECEIVER

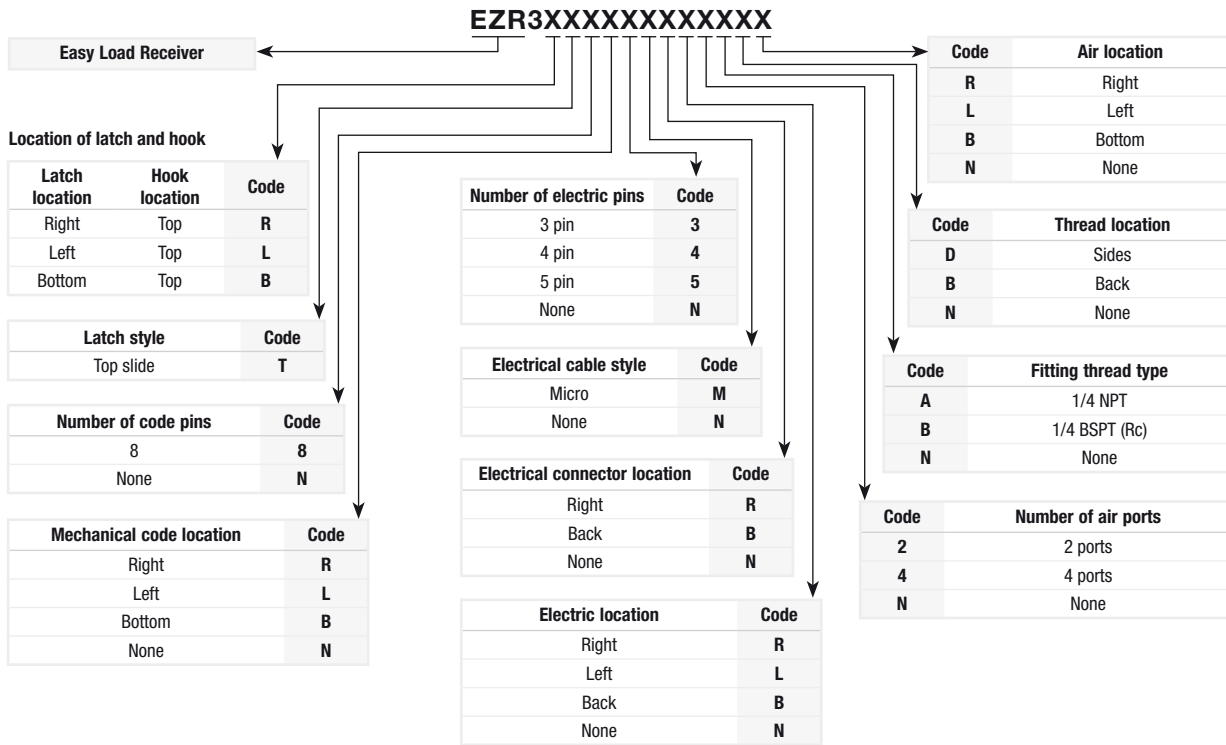
EZR3XXXXXXXXXXXX



- Rated for 100 ft-lbs dynamic load
- Simple and safe with hook alignment, then attach using drop and release mechanism
- Mounted with M8 bolts on industry standard 45 mm bolt pattern
- Allows loading of up to two fingers at a time
- Air, electrical and mechanical code connections couple automatically-no manual connections required
- Safety catch feature to prevent the tool from falling into automation during a failure
- High flow air connections and durable electrical connections are available
- Holes provided on back for optional 8 mm dowels for precise locating

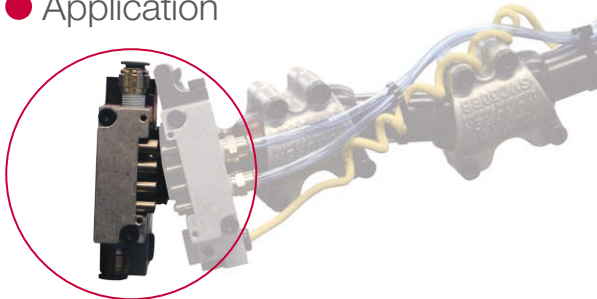


● Order information



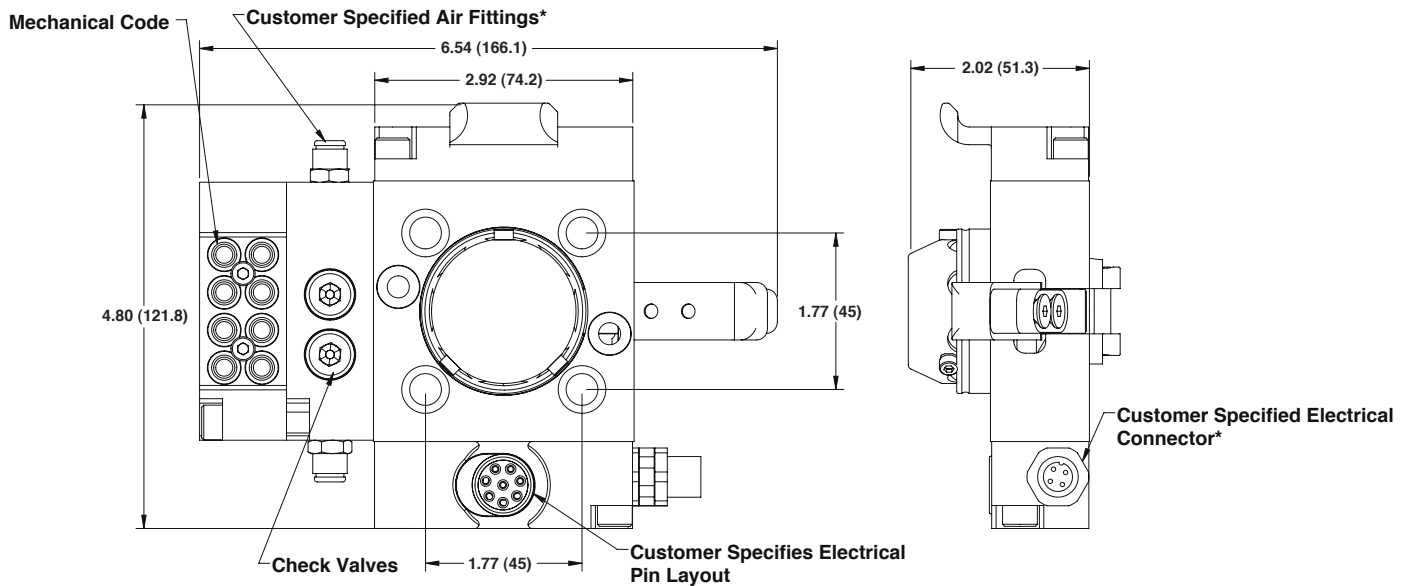
Contact your KAM or Inside sales at insidesales@imi-precision.com to confirm part number configurations.

● Application





● Dimensions inches (mm)



*Air and electrics on the Easy Load receiver can be set to side exit (as shown above) or rear exit.

● Part number rules

Rule #	If Statement	Then Statement or Example
1	Top is reserved for hook only and the hook is mandatory	
2	If handle is on the left	Then left is not an option for electric, air, and code modules
3	If handle is on the right	Then right is not an option for electric, air, and code modules
4	If handle is on the bottom	Then bottom is not an option for electric, air, and code modules
5	Code, if none is not selected for number of pins	Then none is not an option for location
6	Code, if none is selected for number of pins	Then none is the only option for location
7	Electrics, if none is not selected for # of pins	Then none is not an option for cable style, connector location, location on module
8	Electrics, if none is selected for # of pins	Then none must be selected for cable style, connector location, location on module
9	Air, if none is not selected for number of air ports	Then none is not an option for thread type, location on the module, location of module
10	Air, if none is selected for number of air ports	Then none must be selected for thread type, location on the module, location of module
11	If handle is on the right	
	And if electrics is right exit	
	And if electrics is on left side of receiver	
	And if air is selected	
	And if air is side exit	Then air can't be mounted on the bottom
12	If handle is on the left	
	And if electrics is right exit	
	And if electrics is on the bottom of receiver	
	And if air is selected	
	And if air is side exit	Then air can't be mounted on the right
13	Not more than 3 modules can be mounted on a single side	for example, you can have 2 air blocks and code, but not 2 air blocks and 2 electric blocks all on the left side

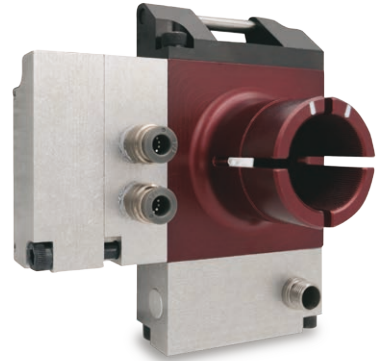
Note: Dimensions in inches (mm) are for reference only



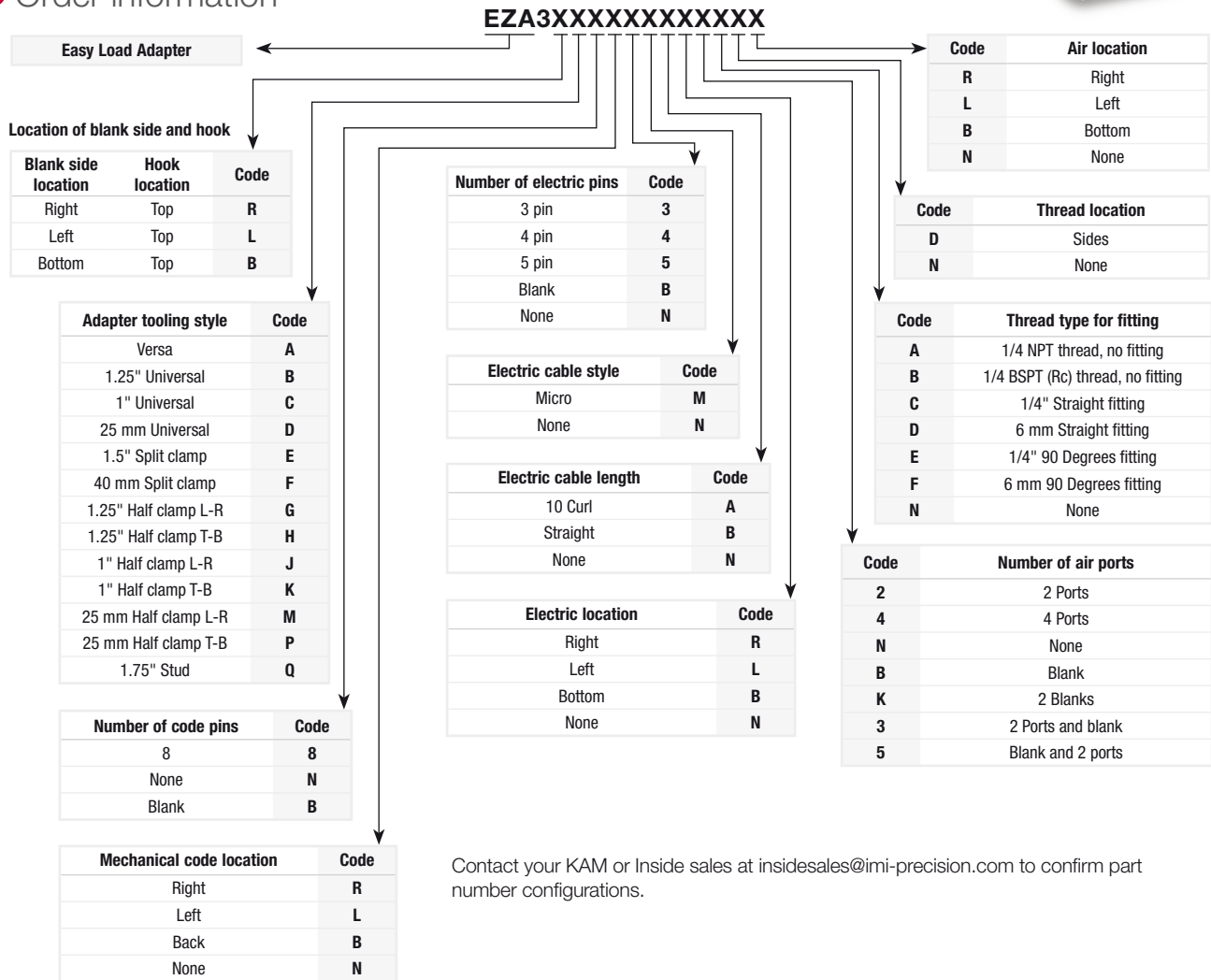
EASY LOAD ADAPTER

EZA3XXXXXXXXXXXX

- Compatible with Easy load receiver
- Rated for 100 ft-lbs dynamic load
- Drop and release mechanism for fast, easy loading
- Air, electrical and mechanical coding connections couple automatically when the adapter is inserted
- Staging position allows operation to load two tools at a time
- Safety catch feature to prevent the tool from falling by accident
- Electrical use industry leading 6-point contact gold plated pins and sockets for durability and reliability in even the harshest environment

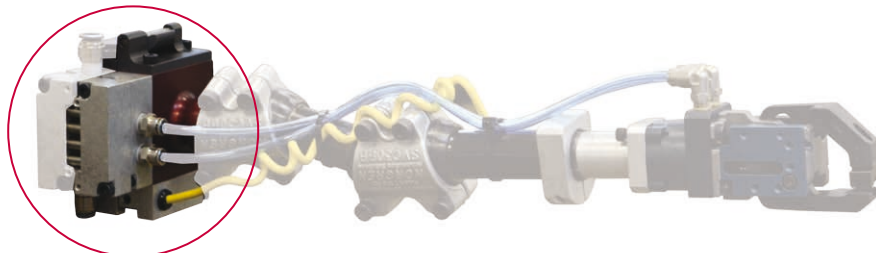


● Order information



Contact your KAM or Inside sales at insidesales@imi-precision.com to confirm part number configurations.

● Application

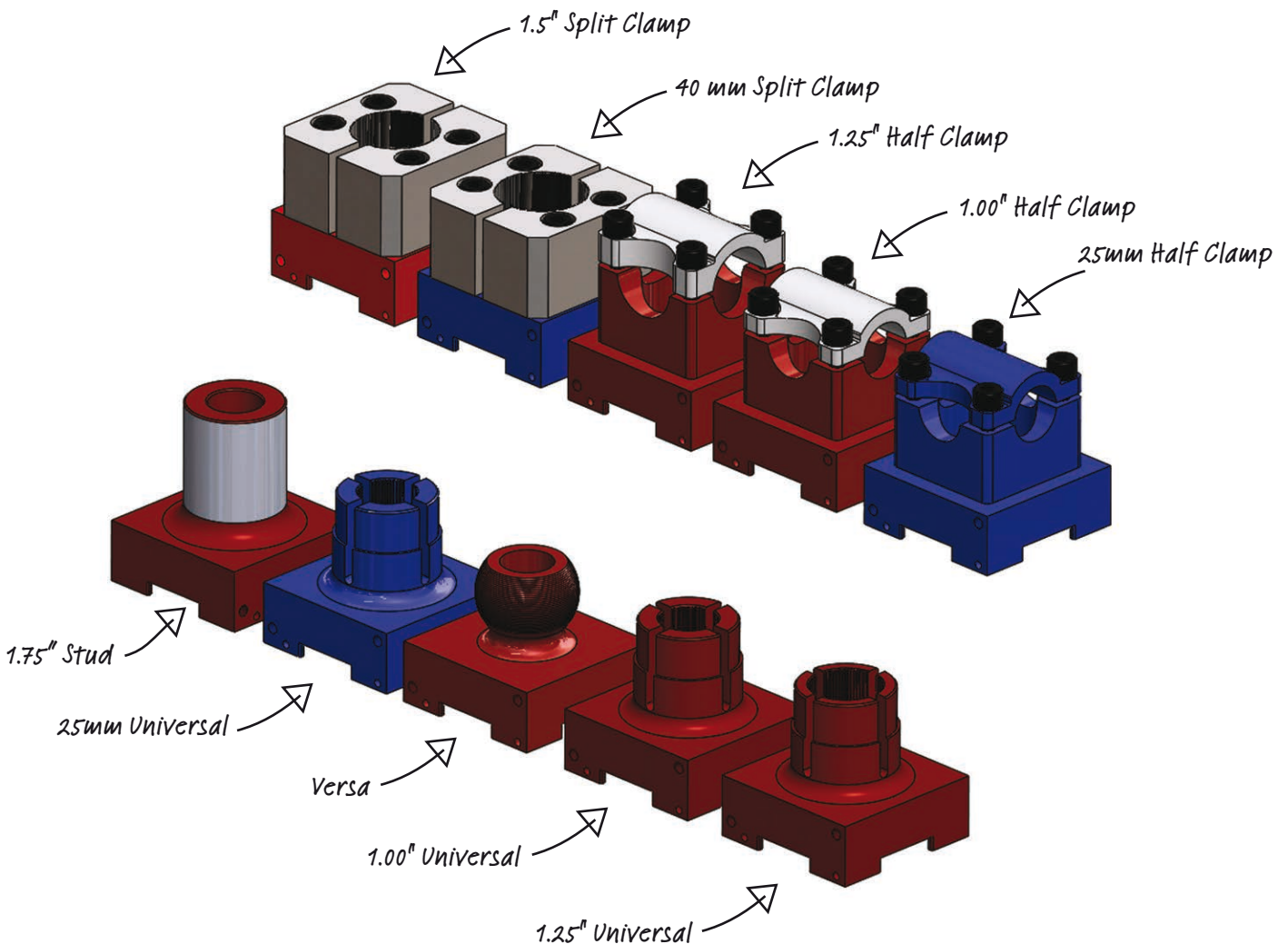




● Part number rules

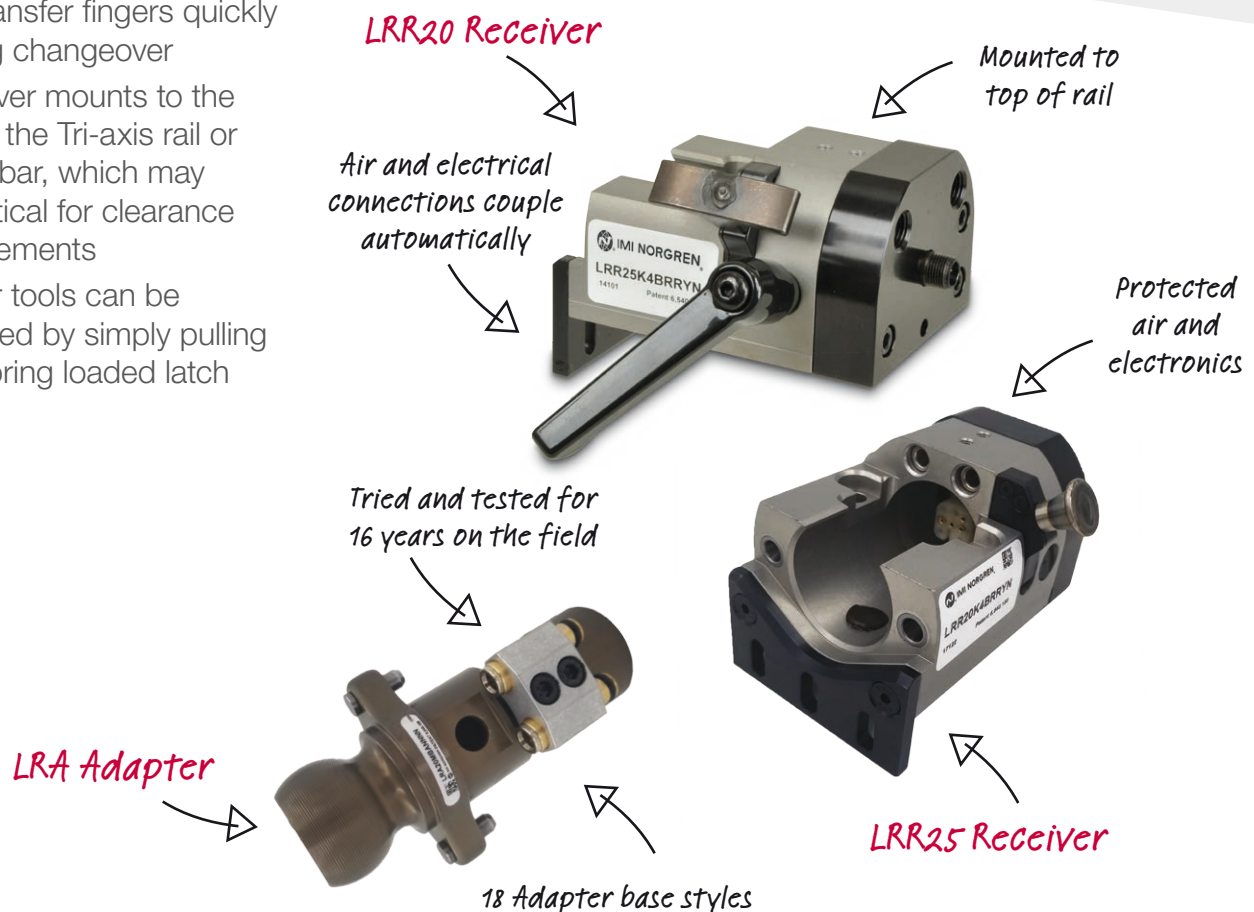
Rule #	If Statement	Then Statement or Example
1	Top is reserved for hook only and the hook is mandatory	
2	If the blank side is on the left	Then left is not an option for electric, air, and code modules
3	If the blank side is on the right	Then right is not an option for electric, air, and code modules
4	If the blank side is on the bottom	Then bottom is not an option for electric, air, and code modules
5	The blank side must be on the same side as the receiver handle to match	
6	Code, if none is not selected for number of pins	Then none is not an option for location
7	Code, if none is selected for number of pins	Then none is the only option for location
8	Electrics, if none is not selected for # of pins	Then none is not an option for cable style, connector location, location on module
9	Electrics, if none is selected for # of pins	Then none must be selected for cable style, connector location, location on module
10	Electrics, if blank is selected for # of pins	Then cable style = none, cable length = none, location of module can't be none
11	Electrics, if 5 is selected for # of pins	Then cable style must = straight
12	Electrics, if 5 is not selected for # of pins	Then cable style must not be straight
13	Air, if none is not selected for number of air ports	Then none is not an option for thread type, location on the module, location of module
14	Air, if none is selected for number of air ports	Then none must be selected for thread type, location on the module, location of module
15	Air, if blank is selected (b or k) for # of ports	Then thread type for fitting = none, location on the module = none, location of module can't be none
16	Not more than 3 modules can be mounted on a single side	for example, you can have 2 air blocks and code, but not 2 air blocks and 2 electric blocks all on the left side

● Appendix A: Easy Load adapter styles



LRR AND LRA TOOL CHANGER

- Provides flexibility to switch out transfer fingers quickly during changeover
- Receiver mounts to the top of the Tri-axis rail or Crossbar, which may be critical for clearance requirements
- Finger tools can be released by simply pulling the spring loaded latch



Fast Find Guide

● LRR and LRA

<p>LRR RAIL RECEIVER LRR</p>  <p>Page 22</p>	<p>LRA RAIL ADAPTER LRA</p>  <p>Page 25</p>
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LRR RECEIVER

LRR1XXXXXXXXXX



- Receiver mounts to top of transfer rail or bar
- Provides fast changeover of transfer finger tooling
- Steel locating pins of adapter slide into hardened steel bushings in the face of the receiver for maximum tooling stability
- Finger tools can be released by simply pairing the spring loaded latch – optional handle included but not required
- Internal electrics are protected from debris and oil, increasing durability and lifetime

Technical data

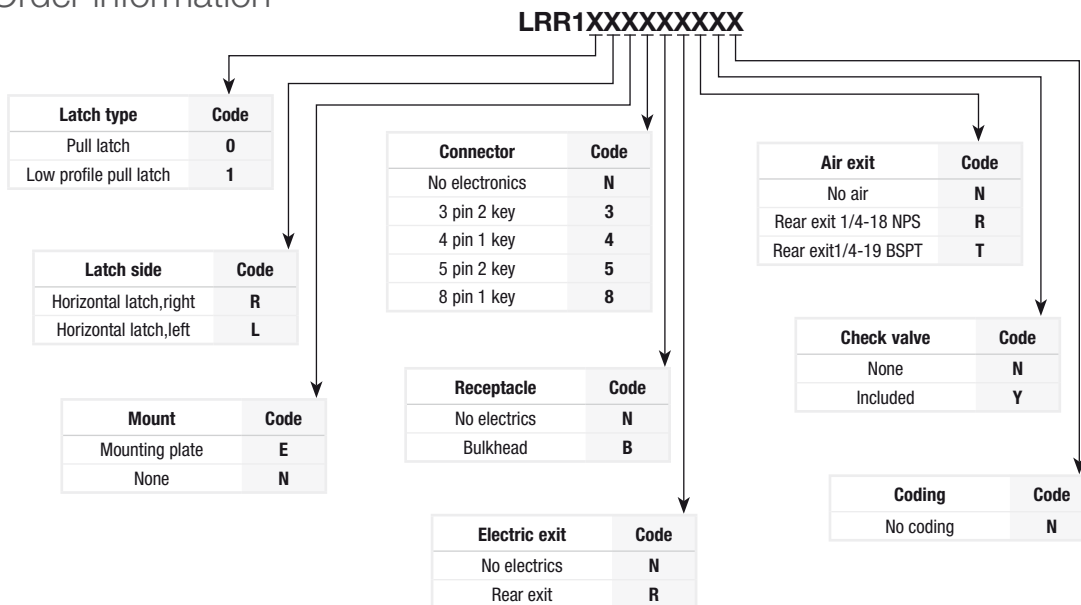
Weight:
1.64 lbs. (744 g)



Standard part numbers

Part number	Description		Electric connector type	Electric connector mount	Electric connector exit	Air exit	Number of Ports	With Mechanical Coding?
	Finger release latch type	Mount type						
LRR25K4BUUYC	T-latch	Short keyplate	4-pin	Bulkhead	Underside	Underside exit 1/4-18 NPS (2 ports)	2 port	Yes
LRR25K4BUU4C	T-latch	Short keyplate	4-pin	Bulkhead	Underside	Underside exit 1/4-18 NPS (2 ports)	4 port (english)	Yes
LRR25K4BUDYC	T-latch	Short keyplate	4-pin	Bulkhead	Underside	Underside exit 1/4-19 BSPP (2 ports)	2 port	Yes
LRR25K4BUDMC	T-latch	Short keyplate	4-pin	Bulkhead	Underside	Underside exit 1/4-19 BSPP (2 ports)	4 port (metric)	Yes

Order information

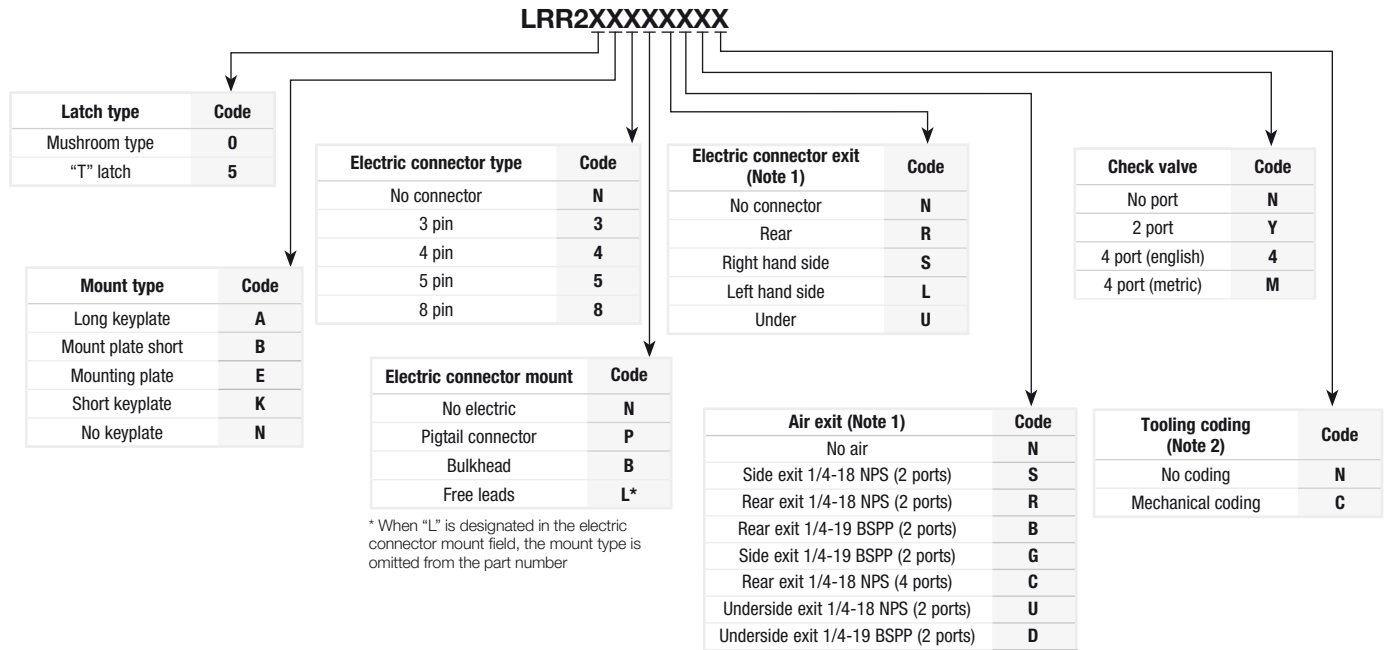


Contact your KAM or Inside sales at insidesales@imi-precision.com to confirm part number configurations.

For information about different adapter styles and tooling bars available for LRR10 and LRR11 receivers, please contact your KAM or Inside sales at insidesales@imi-precision.com.



● Order information

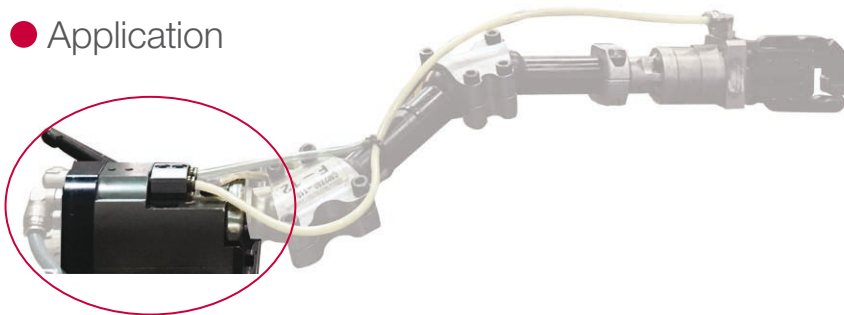


Note 1: The exit location of the electrical connector and pneumatic ports must be the same: at the rear, side or bottom of the receiver unit.

Note 2: Mechanical coding block is part of the assembled unit, but the actual code is not configured with the unit.

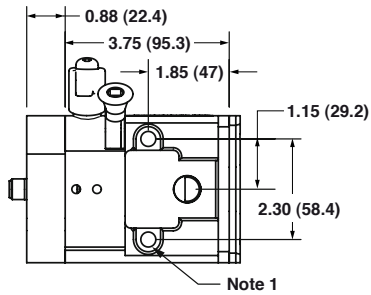
Contact your KAM or Inside sales at insidesales@imi-precision.com to confirm part number configurations.

● Application

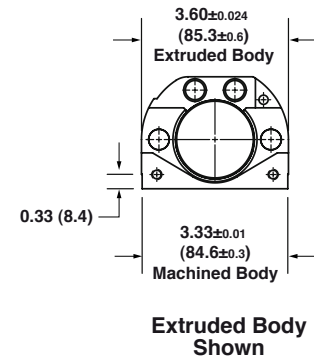
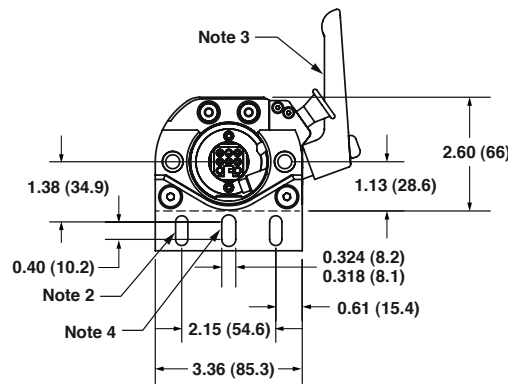
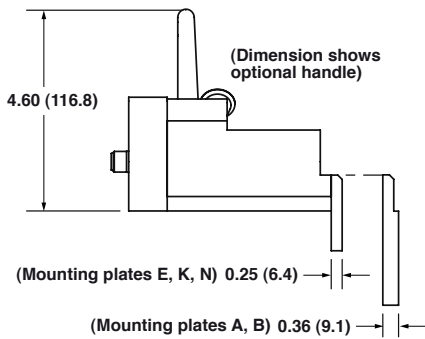
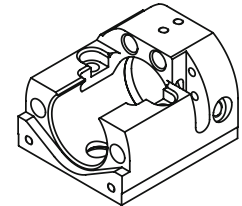




● Dimensions inches (mm)

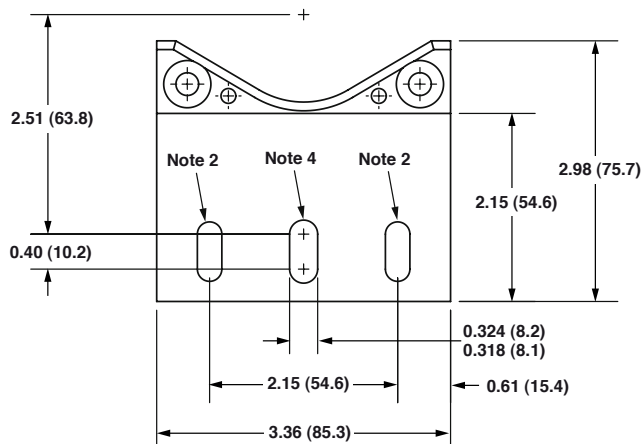


General Table	
Note 1:	For 2X 8 mm SHCS
Note 2:	For 2X 6 mm SHCS
Note 3:	Optional locking handle shipped loose for field installation if required
Note 4:	For 8 mm locating pin

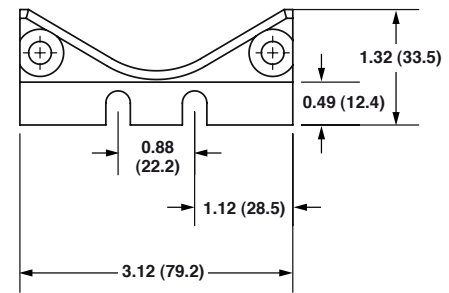


Short Mounting Plate (K)

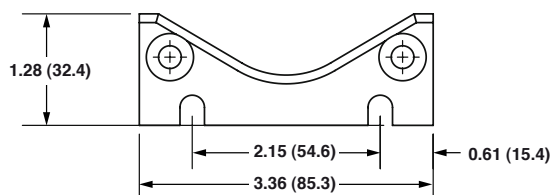
● Additional mounting plates



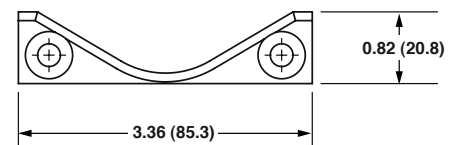
Long Mounting Plate (A)



Mounting Plate (B)



Mounting Plate (E)



No KeyPlate (N)

LRA ADAPTER

LRA20XXXXXX



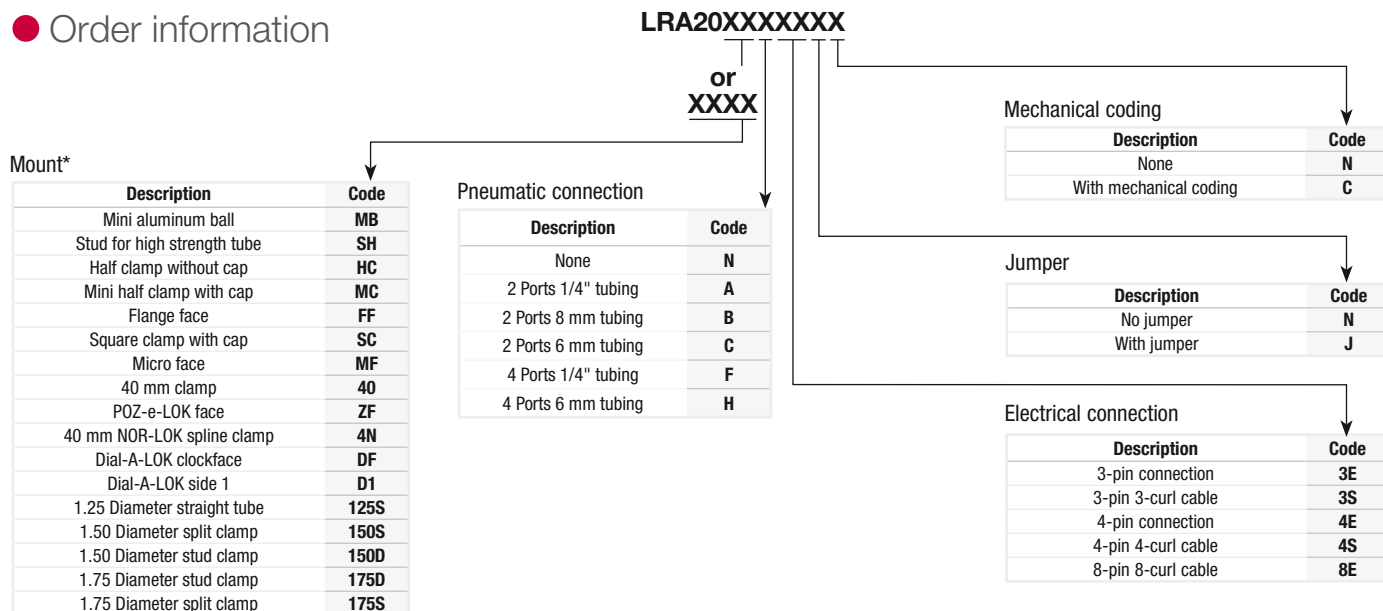
- Adapter compatible with LRR20 and LRR25 receivers
- Provides flexibility to switch out transfer fingers quickly during changeover
- Air and electrical connections couple automatically when the adapter is inserted



Standard part numbers

Part number	Description				
	Mount*	Pneumatic connections	Electrical connections	With jumper	Mechanical coding
LRA20MCA4ENC	Mini half clamp with cap	2 Ports, 1/4" tubing	4-pin connection	None	Yes
LRA20MBA4ENC	Mini aluminum ball	2 Ports, 1/4" tubing	4-pin connection	None	Yes
LRA20125SA4ENC	1.25" Diameter straight tube	2 Ports, 1/4" tubing	4-pin connection	None	Yes
LRA20MCC4ENC	Mini half clamp	2 Ports, 6 mm tubing	4-pin connection	None	Yes
LRA20MBC4ENC	Mini aluminum ball	2 Ports, 6 mm tubing	4-pin connection	None	Yes
LRA20125SC4ENC	1.25" Diameter straight tube	2 Ports, 6 mm tubing	4-pin connection	None	Yes
LRA20MCF4ENC	Mini half clamp	4 Ports, 1/4" tubing	4-pin connection	None	Yes
LRA20MBF4ENC	Mini aluminum ball	4 Ports, 1/4" tubing	4-pin connection	None	Yes
LRA20125SF4ENC	1.25" Diameter straight tube	4 Ports, 1/4" tubing	4-pin connection	None	Yes

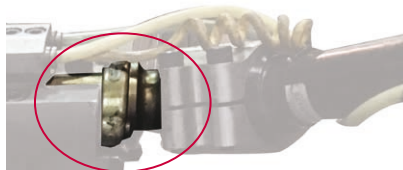
Order information



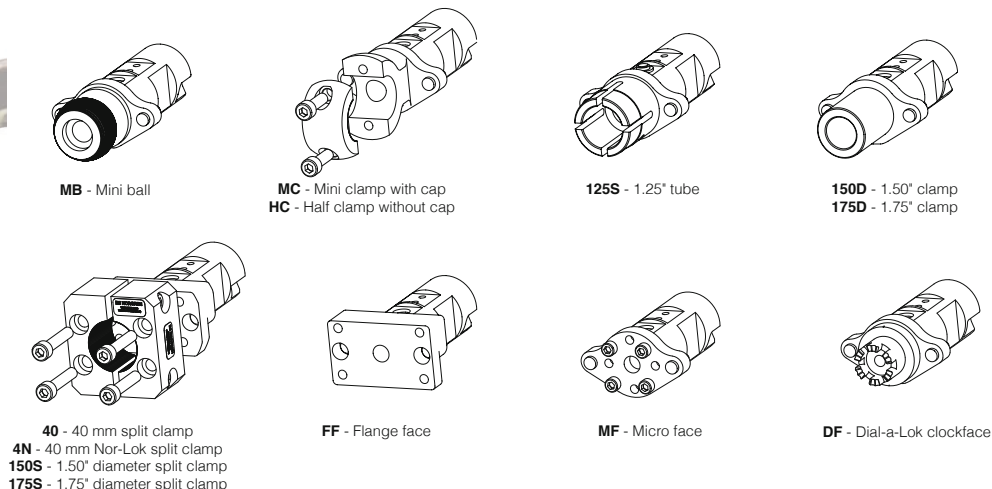
*See Diagram B (Adapter base styles) for reference

Contact your KAM or Inside sales at insidesales@imi-precision.com to confirm part number configurations.

Application

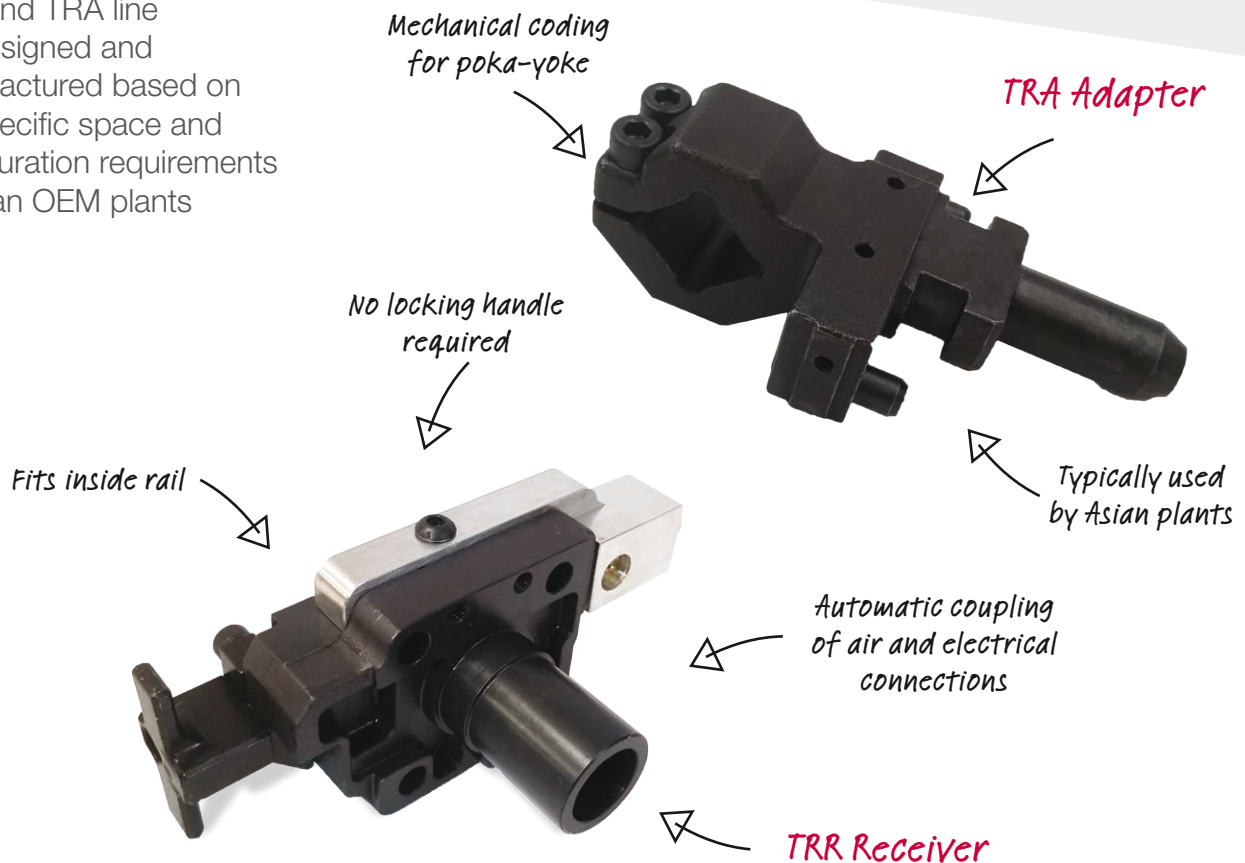


Appendix B: LRA adapter styles



TRR AND TRA TOOL CHANGER

- TRR and TRA line are designed and manufactured based on the specific space and configuration requirements of Asian OEM plants



Fast Find Guide

● TRR and TRA

TRR Rail Receiver TRR  Page 28	TRA Rail Adapter TRA  Page 29
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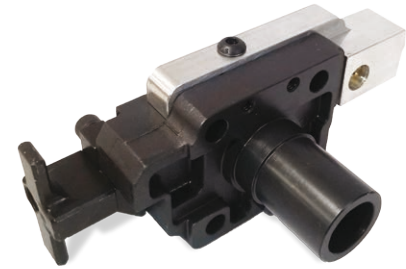
TRR RAIL RECEIVER

TRRXXXXXXXX

- Receivers attach to transfer feedbars as quick-change docking devices for transfer fingers
- Locating pins on the adapters are slide into the receiver face for maximum rotational stability
- Receiver and adapter are held by the receiver's simple one-touch latch – no locking handle required
- Finger can be released using a simple one touch pull latch – no locking handle required
- Quick-connect electrical connection available
- TRR10XXXXXX is a Toyota specific rail receiver- mounts to IMI Norgren's class A,B,C carbon fiber crossbars (TAT,TBT TCT, carbon fiber crossbars)

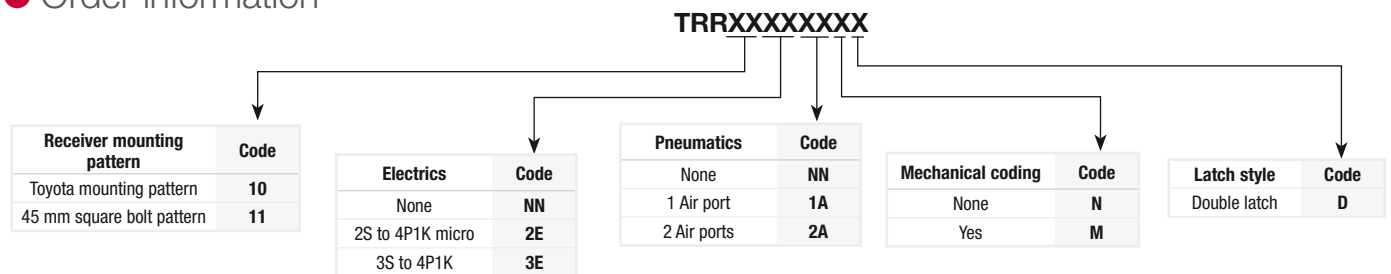
Technical Data

Weight:
1.11 kg



Note: only used with Asian OEM's

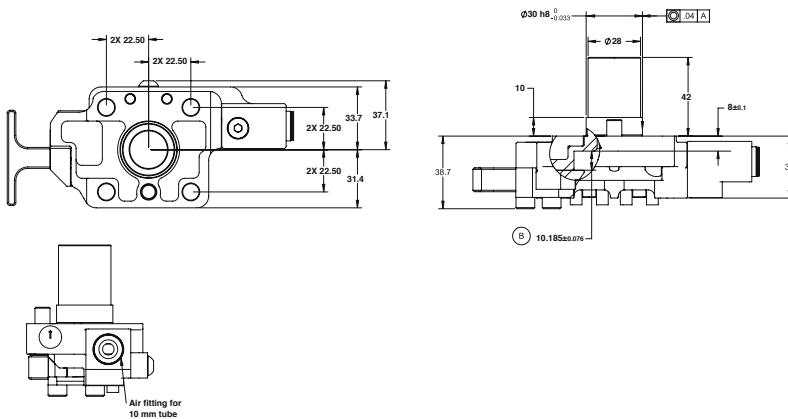
Order information



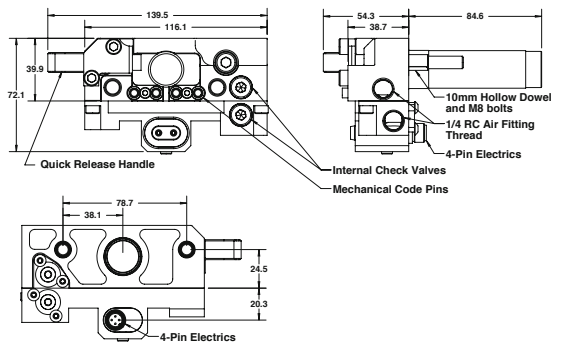
Contact your KAM or Inside sales at insidesales@imi-precision.com to confirm part number configurations.

Dimensions in metrics

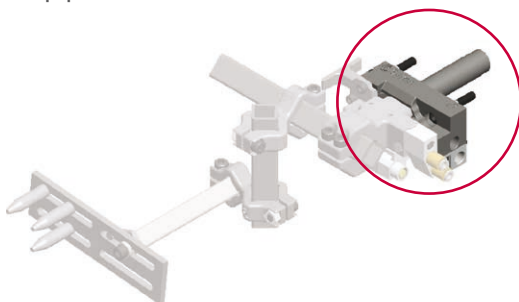
TRR10



TRR11



Application



Dimensions in mm are for reference only

TRA RAIL ADAPTER

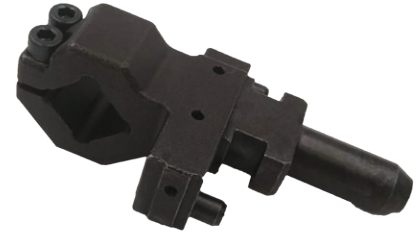
TRAXXXXXXXXXX



- Using a simple one-touch push, adapters connect to receivers, no lock down handle required
- Locating pins on the adapter slide into the receiver face to prevent tooling rotation
- Air and electrical connections couple automatically when the adapter is inserted
- Offer various tooling connection options

Technical Data

Weight:
1.29 kg



Order information

TRAXXXXXXXXXX

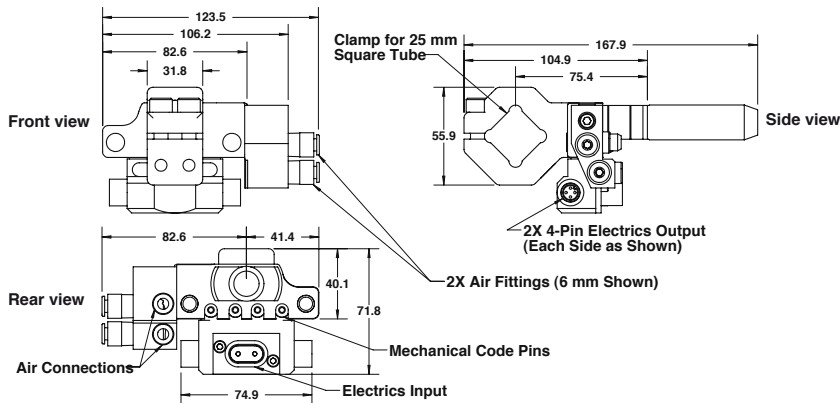
Toyota rail adapters	Code	Adapter style	Code	Electrics	Code	Pneumatics	Code	Mechanical coding	Code
One touch 25 mm square	10	25 mm Square vertical	1V	None	NN	No air ports	NN	None	N
One touch 20 mm round	11	25 mm Square vertical	1V	Left connector	1E	One 6 mm fitting	1A	4-pins (16 combinations)	M
One touch 30 mm square	12	25 mm Square horizontal	1H	Right connector	3E	Two 6 mm fittings	2A		
One touch 25 mm square retro	13			Dual connector	2E	One 10 mm fitting	1C		
One touch 1" round retro	20					Two 10 mm fittings	2C		
						One 1/4-R air port	1N		
						Two 1/4-R air ports	2N		

Note 1: TRA11 and TRA12 are not available in horizontal adapter style.

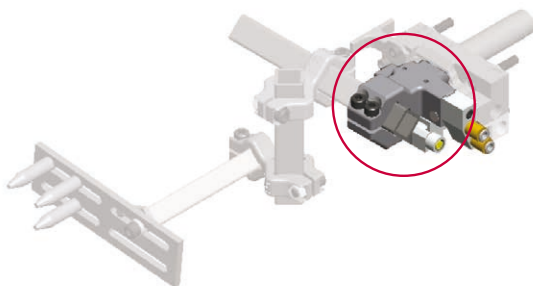
Note 2: TRA20 is not available in vertical adapter style.

Contact your KAM or Inside sales at insidesales@imi-precision.com to confirm part number configurations.

Dimensions in metrics



Application



TRA10



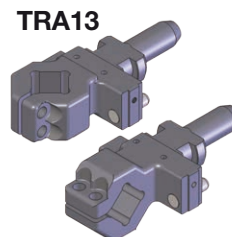
TRA11



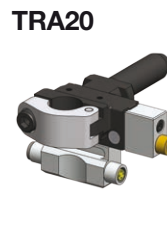
TRA12



TRA13



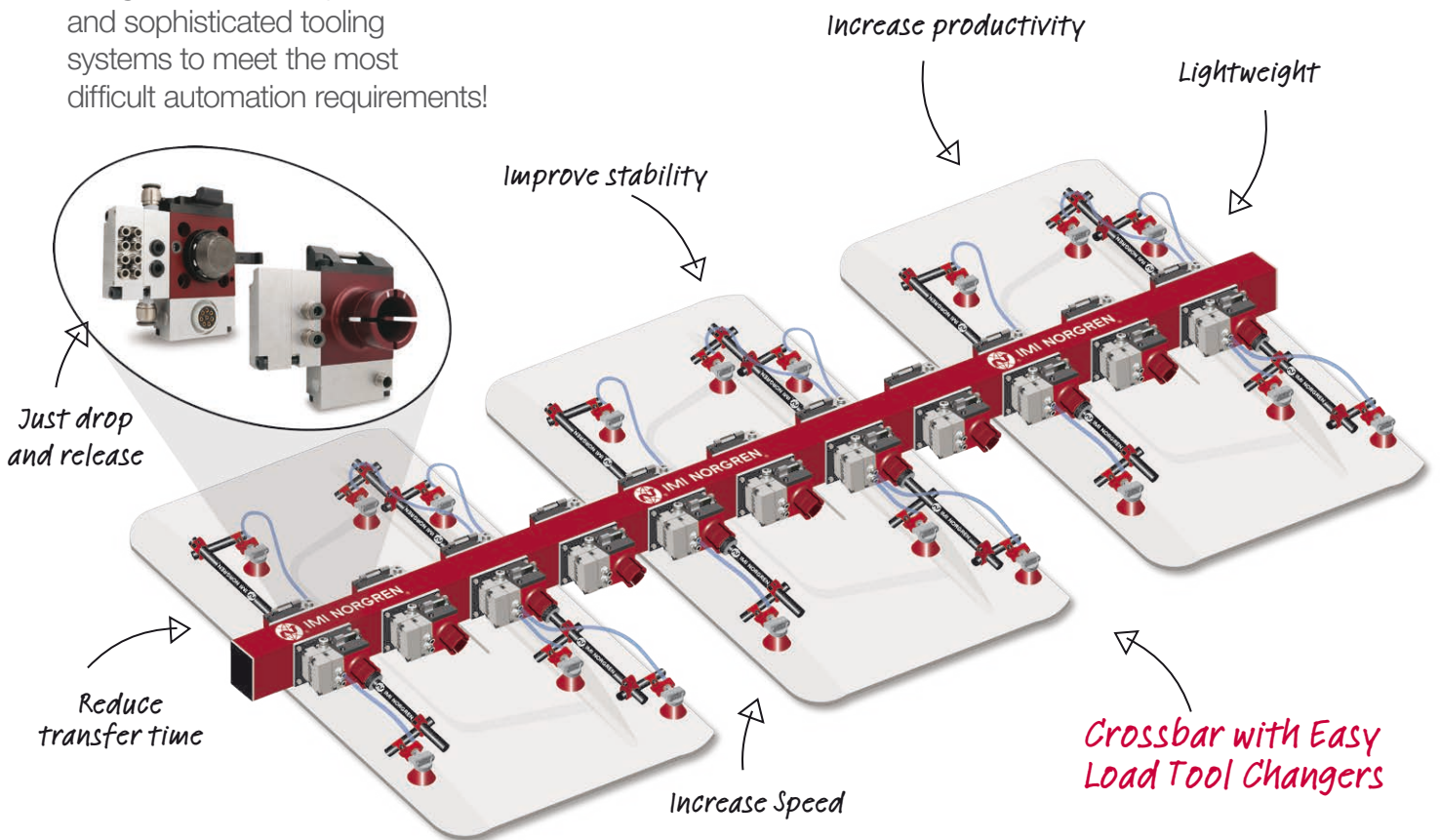
TRA20





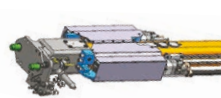
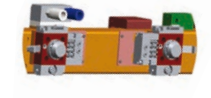
Dimensions in mm are for reference only

TOOL CHANGER CONCEPTS

- Whether it is a Tri-axis, Tandem or Crossbar application, we design and build very efficient and sophisticated tooling systems to meet the most difficult automation requirements!

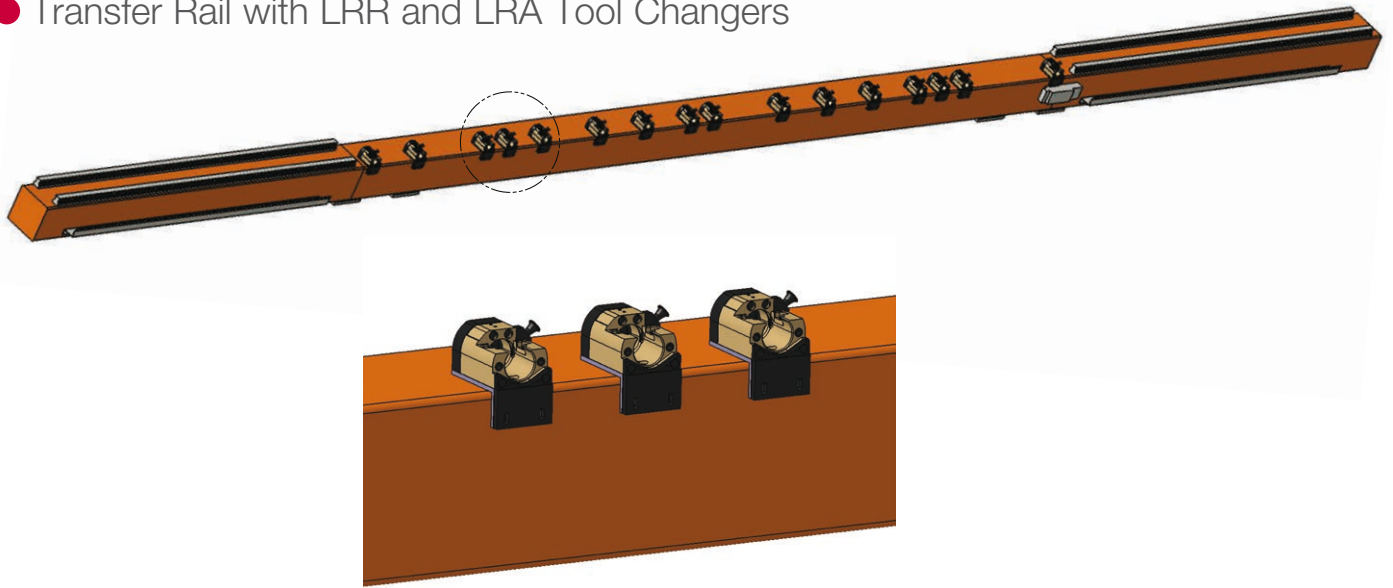


● TOOL CHANGER CONCEPTS

<p>Transfer Rail with LRR and LRA Tool Changers</p>  <p>Page 32</p>	<p>Global Boom with LRR and LRA Tool Changers</p>  <p>Page 32</p>	<p>Intergrated Spreader Crossbar with LRR and LRA Tool Changers</p>  <p>Page 33</p>	<p>Transfer Rail with Easy Load Tool Changers</p>  <p>Page 33</p>
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TOOL CHANGER CONCEPTS

● Transfer Rail with LRR and LRA Tool Changers



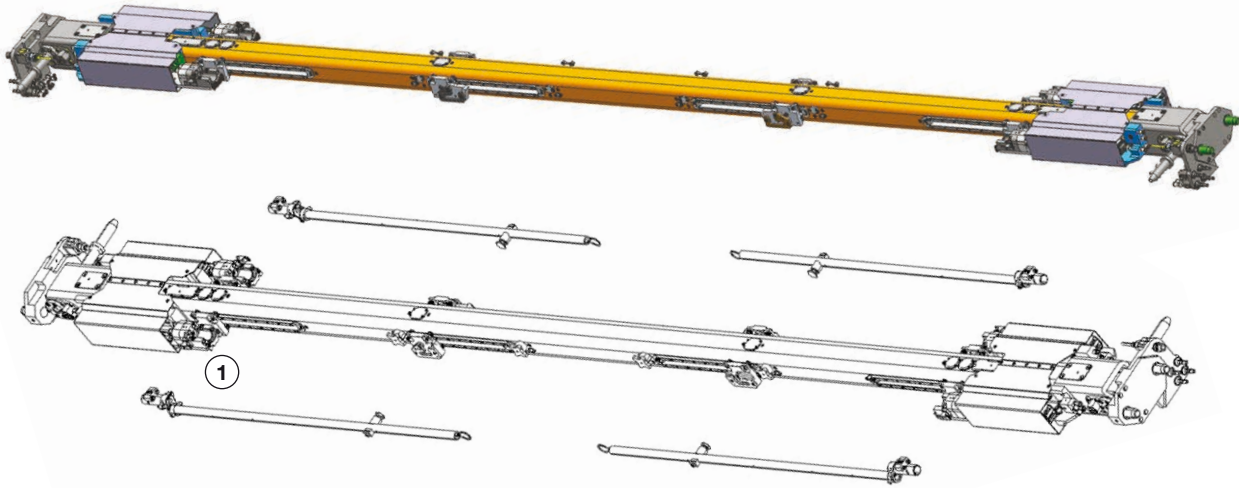
Item	Tool changer part number	Description	Page reference
1	LRR25ANNNYN	Rail Receiver Long Keyplate	23

● Global Boom with LRR and LRA Tool Changers



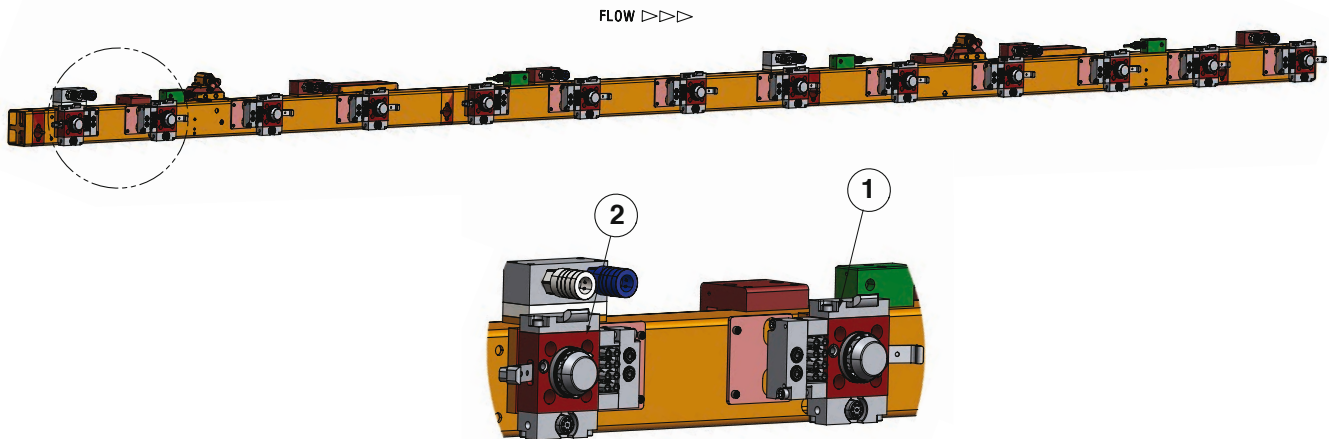
Item	Tool changer part number	Description
1	LRR30*	Global Boom Rail Receiver* * Contact your KAM or Inside Sales at insidesales@imi-precision.com for more information

● Intergrated Spreader Crossbar with LRR and LRA Tool Changers

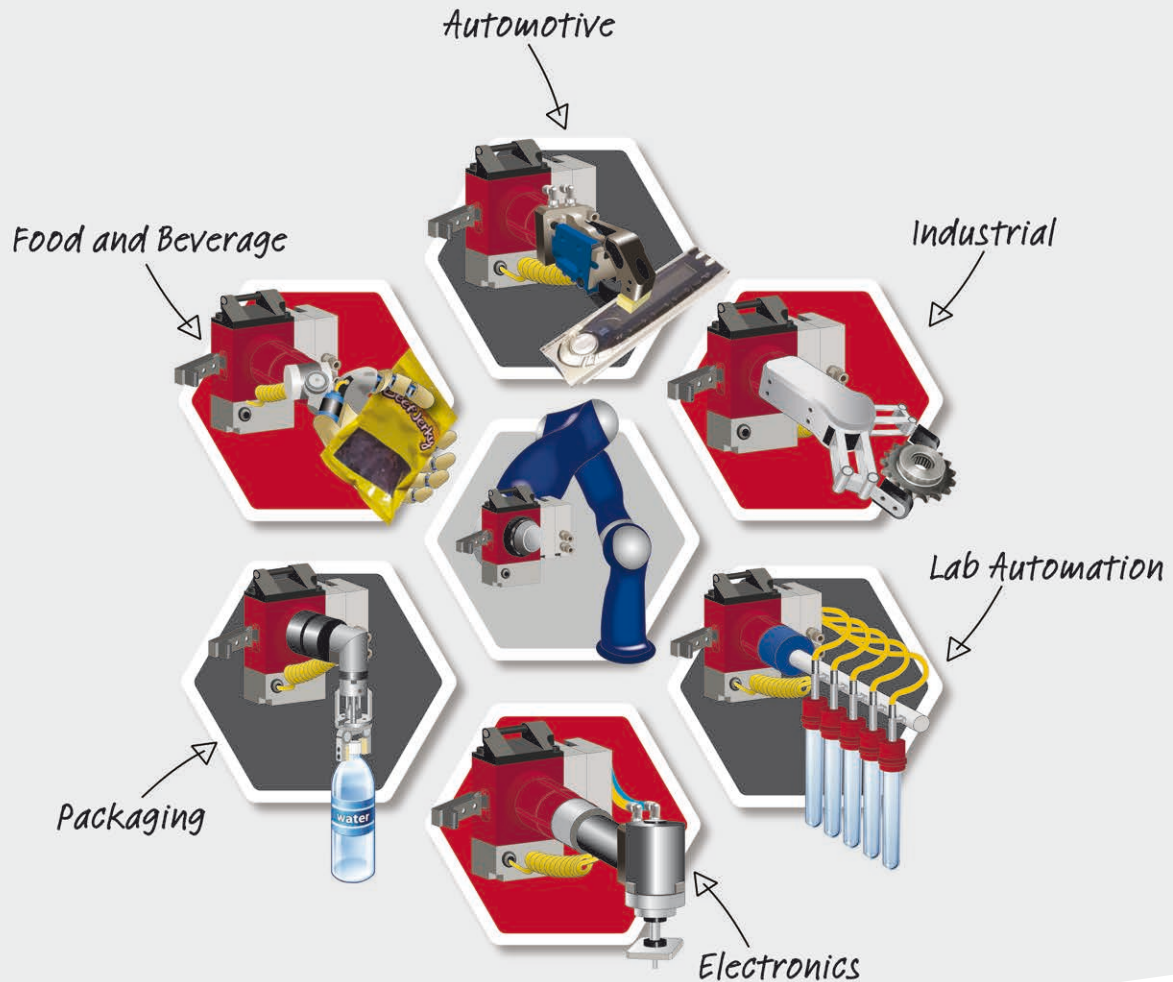


Item	Tool changer part number	Description	Page reference
1	LRR10LE3BRRYN	Rail Receiver 3 Pin 2 Key (LH)	22

● Transfer Rail with Easy Load Tool Changers



Item	Tool changer part number	Description	Page reference
1	EZR3L8R5MBB2ABR	Easy Load Receiver Handle Left	16
2	EZR3R8L5MBB2ABL	Easy Load Receiver Handle Right	16



Easily switch out the end effector to your robot!

IMI Norgren's new manual tool changer, the Easy Load, features a one-touch release for easy and quick connect or disconnect of end effectors. Increase the flexibility of your collaborative robot without sacrificing production time!

Contact us at NAS-Marketing@imi-precision.com for more information!

Engineering
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Warning

These products are intended for use in industrial systems only. Do not use these products where pressures and temperatures can exceed those listed under Specifications.

Before using these products with fluids other than those specified, for nonindustrial applications, life-support systems, or other applications not within published specifications, consult Norgren.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure modes.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided. System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products, or posted on the Norgren website under "Downloads." System designers should also provide for all OSHA requirements including Title 29 CFR 1910.147 Lockout/Tagout.

It should be recognized that warnings are valid for any product, regardless of manufacturer, and are not restricted to products manufactured by Norgren. Norgren's reputation for product quality and performance is well established. We feel we have the additional obligation to provide information or warnings to customers to assist them in applying our products in a reasonable and safe manner.

Proposition 65: These products may contain chemicals known to the state of California to cause cancer, or birth defects, or other reproductive harm.

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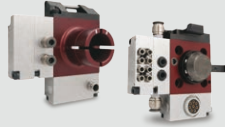
1

COMPARISON CHART



2

EASY LOAD TOOL CHANGER



3

LRR AND LRA TOOL CHANGER



4

TRR AND TRA TOOL CHANGER



5

TOOL CHANGER CONCEPTS



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