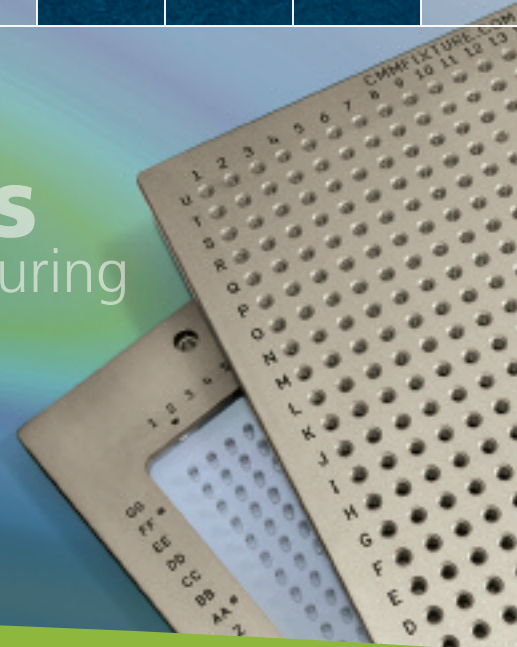


# R&R fixtures

CMM and vision fixturing



## Fixturing Problems?

R&R has the solution for either your CMM or vision system. We can improve your productivity, reduce fixturing cost, and help your company to be more competitive in today's world by using our R&R modular fixtures or by building a specialized fixture that is designed specifically for your part's application.

R&R Sales and Engineering can be your single source for CMM and vision fixturing. We have been dedicated to supplying fixturing to the metrology field for over 15 years. Our #1 goal is our customer's satisfaction by making sure that your CMM or vision system is as productive as it can be.

Through fixturing, R&R is continually working hard to increase productivity within the aerospace, automotive, appliance, electronics, industrial, medical, and numerous other industries worldwide. We strive to have the best solution for any fixturing problem.



# The Right Fixture at the Right Price

R & R HAS YOUR FIXTURING SOLUTION

**CMM** MODULAR FIXTURING FOR CMM MACHINES



**one solution**  
unlimited possibilities

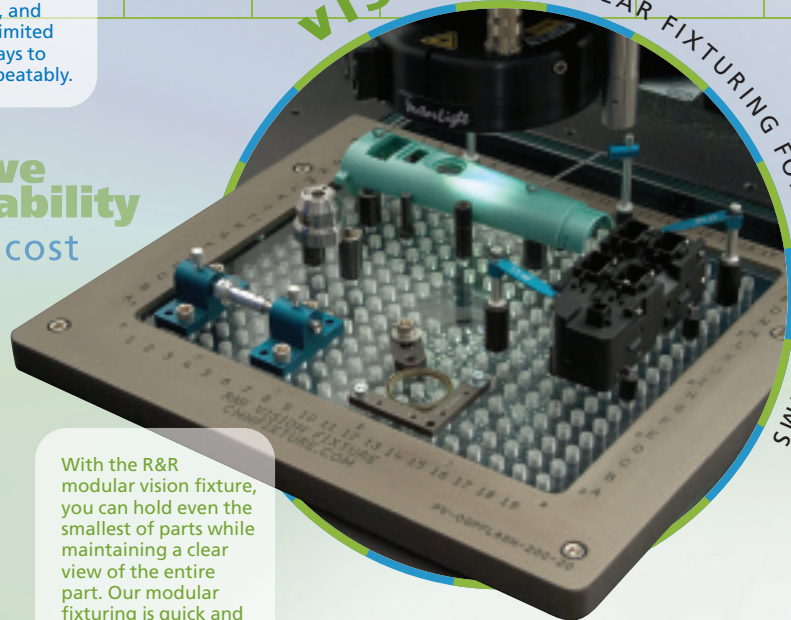
**large parts**  
or small parts

Our R&R modular CMM fixture is quick, easy to use, and modular enough to set up any part, no matter what shape, size or material. This helps eliminate downtime on your CMM, reduce fixturing cost, and allows an unlimited number of ways to hold parts repeatably.

**improve**  
repeatability  
reduce cost

**quick & easy**

**VISION** MODULAR FIXTURING FOR VISION SYSTEMS

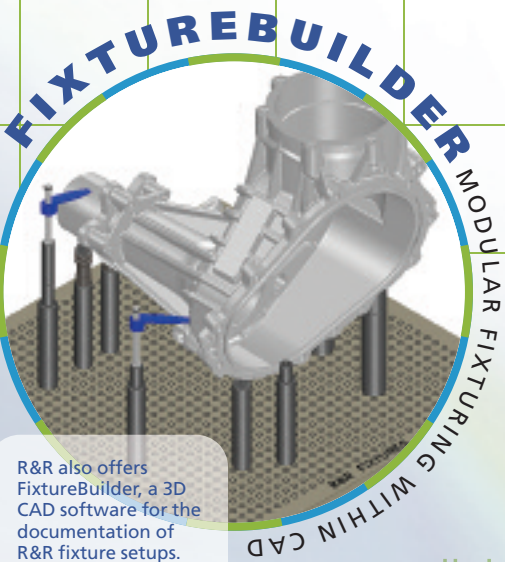


With the R&R modular vision fixture, you can hold even the smallest of parts while maintaining a clear view of the entire part. Our modular fixturing is quick and simple to use so parts can be setup within minutes.



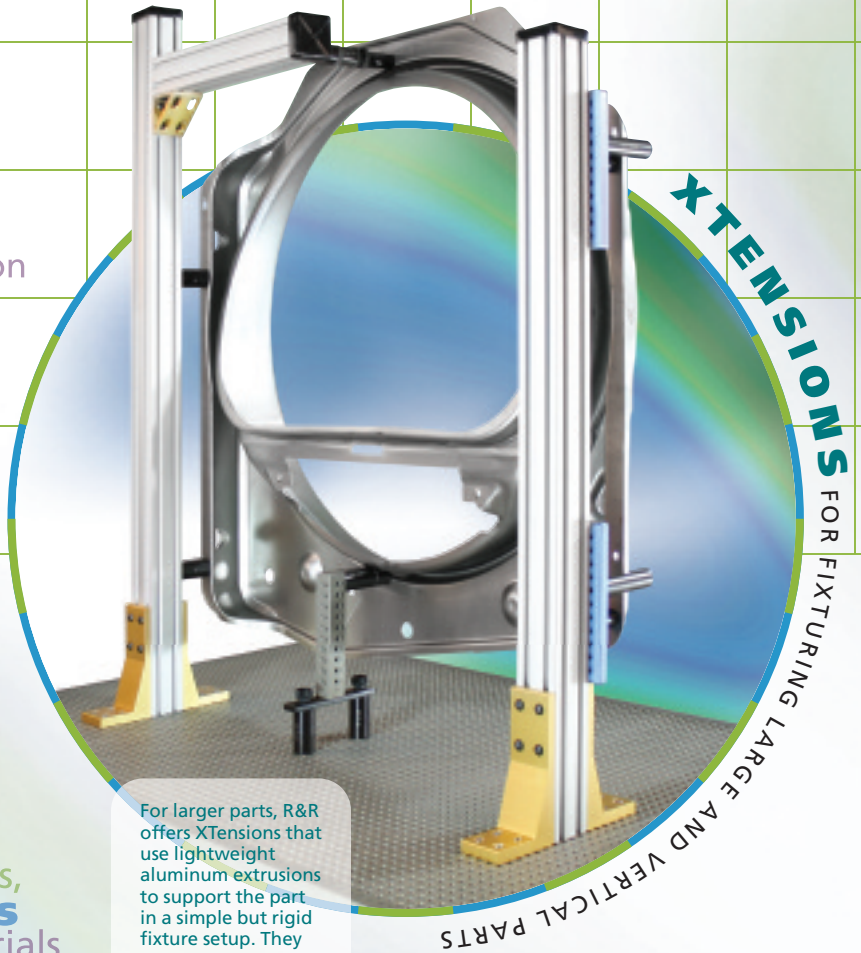
R&R also provides specialized fixturing for those parts that need specific details or mounting positions. Multiple parts and families of parts can be fixtured at once. The fixturing is designed specifically for the way you need to check the part, whether on a CMM or vision system.

**3D**  
documentation



R&R also offers FixtureBuilder, a 3D CAD software for the documentation of R&R fixture setups. It's a quick and easy way to document which of the R&R fixture components were used and in what location—great for ISO and QS 9000 documentation.

all shapes,  
**sizes**  
& materials



For larger parts, R&R offers XTensions that use lightweight aluminum extrusions to support the part in a simple but rigid fixture setup. They are a great way to set parts up vertically for full exposure to the part. XTensions can be used in conjunction with R&R fixture components.

**vertical**  
or horizontal setups

<b>CMM Modular Fixturing</b>	<b>4</b>
<b>Vision Modular Fixturing</b>	<b>12</b>
<b>Specialized Fixturing</b>	<b>16</b>
<b>FixtureBuilder</b>	<b>18</b>
<b>XTensions</b>	<b>20</b>

short payback  
**great value**

# The R&R Solution

MODULAR FIXTURING FOR CMM MACHINES

To be competitive in today's ever changing world, with innovation and new technology constantly evolving, companies need to inspect more and more parts with shorter lead times while still maintaining the highest quality standards without spending a lot of money. The modular R&R fixture is the answer to this problem as it is quick, easy to use, and flexible enough to hold all your different parts. It will decrease inspection cost while improving productivity. The

fixture will also help improve the accuracy of your part inspections...no more wasting time and money on traditional fixturing methods.

## Holds Virtually Anything

R&R modular fixtures are designed to minimize traditional fixturing methods such as step clamps, glue, and tape, as well as reduce the need for dedicated fixtures. Our base plates and components (available in English or metric sizes) adapt to any application, no matter what size, shape, or material the part is. Whether it is a small intricate plastic part, an aluminum engine block, or large sheet metal part, the R&R fixturing system can fit all your applications. Our magnetic components can be used for holding steel parts. Aluminum, brass, plastic, or non-ferrous parts can be held using our clamps and various other components.

### R&R MODULAR FIXTURE BENEFITS:

- ease of use
- unlimited number of setups
- setup within minutes
- affordable for any budget
- recordable

## Ability To Inspect Every Detail

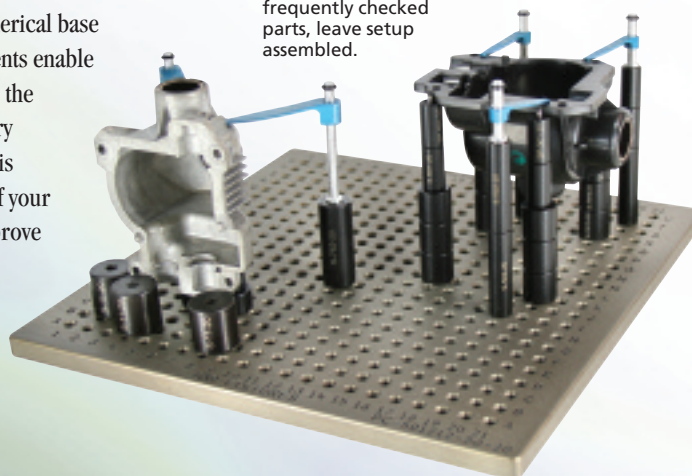
Many times with traditional fixturing, features can be obstructed from the probe path due to cumbersome and bulky fixturing. With the R&R Fixture, various component and hole locations can be used to find the best combination to create an unobstructed probe path. Components can be quickly moved or changed to find the most precise way for the features to be measured.

## Reduce Setup Time

R&R Fixtures can be used for production parts as well as one-of-a-kind or prototype parts that need a quick, easy way to secure the part for inspection. Part setups can be quickly configured using various components and hole locations that are limited only by the user's imagination. All components work together to secure the part to the fixture. The multiple holes on each base plate increase the flexibility of the fixture and enable the part to be set up within minutes obtaining results sooner, saving both time and money on fixturing cost.

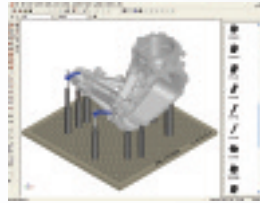
## Improve Repeatability and Reproducibility

Our precision modular fixture is called the R&R fixture for its ability to improve repeatable and reproducible measurements. After the initial setup is created and documented, our alphanumerical base plates and labeled components enable the user to set the part up in the same location each and every time the part is checked. This will increase the accuracy of your part measurements and improve your game R&R.



## Document Part Setups

Documenting the initial setup manually or with our 3D CAD FixtureBuilder software you can maintain consistency on all future setups. This is especially helpful when there



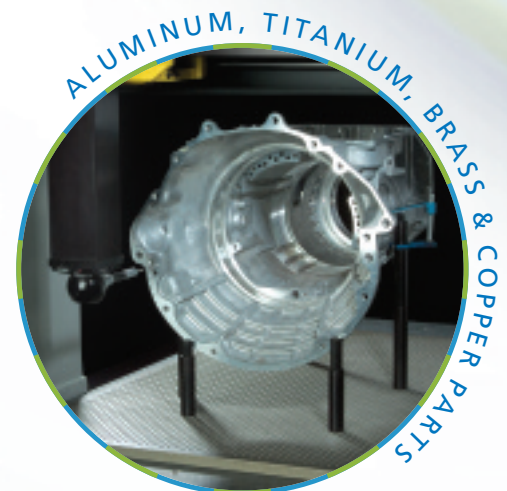
■ FixtureBuilder is a 3D fixture modeling software that creates R&R setups for documenting and off-line programming. See page 18.

may be multiple users or a long period of time between setups. Recording and saving setups can be accomplished with just a click of the mouse using our FixtureBuilder software that will give you a build list of exactly what you used and in what location.

## Automate Your CMM

When a part needs to be checked on a more frequent basis, you can leave the components set up on a base plate until you no longer repetitively check the part, saving on setup time and making your CMM even more automated. After those parts are no longer being checked or there are engineering changes that need to be made, the components can be broken down and used for other part setups with little or no down time on the CMM. This can be a major cost savings.

■ To save time on frequently checked parts, leave setup assembled.



**don't let fixturing slow you down...**  
increase your performance, flexibility and productivity with R&R fixtures

## Cost Advantage

An important advantage of the R&R modular fixtures are that setups are more repeatable and reproducible than traditional fixturing methods, and faster setup time equals added savings:

10 Parts: One Time Per Month	R&R	Traditional
Initial fixture part setup	10 min	17 min
Each additional part setup x number of additional parts	1 min x 9	3 min x 9
<b>Total Setup Time (10 parts) *</b>	<b>19 min</b>	<b>44 min</b>
Inspection cost per part at \$80/hr burden rate x other similar inspections per month	\$25.33 x 20	\$58.66 x 20
<b>Total Inspection Cost (20 inspections)</b>	<b>\$506/mo</b>	<b>\$1,173/mo</b>

10 Parts: Five Times Per Month	R&R	Traditional
Initial Setup Time (10 parts) *see above	19 min	44 min
Time to refixture for additional inspection x number of times per month	3 min x 5	14 min x 5
<b>Total Setup + Refixture Time (10 parts)</b>	<b>34 min</b>	<b>114 min</b>
Inspection cost per part at \$80/hr burden rate x other similar inspections per month	\$45.33 x 20	\$152.00 x 20
<b>Total Inspection Cost (20 inspections)</b>	<b>\$906/mo</b>	<b>\$3,040/mo</b>



**FLEXIBLE PARTS**

■ Tension clamps allow the part to be held using minimal contact.



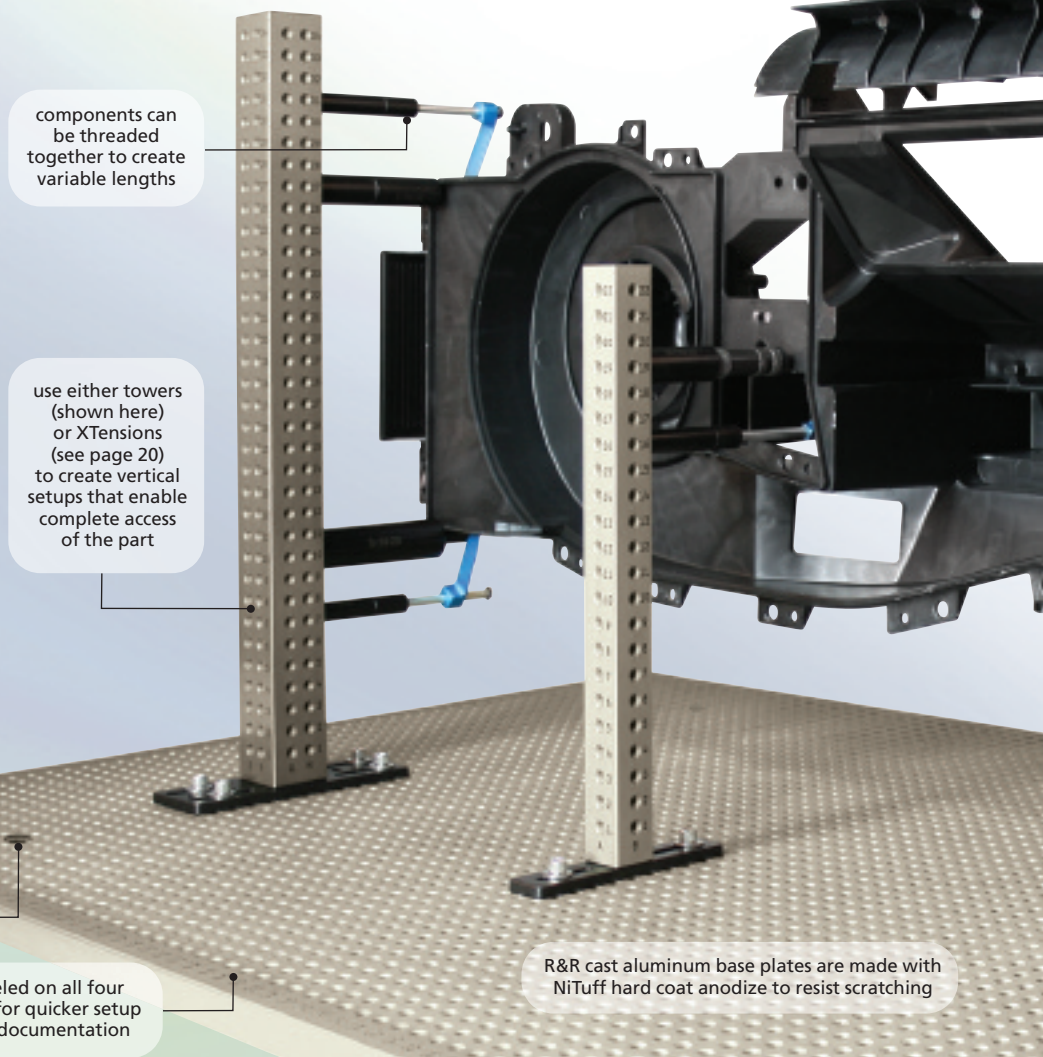
**CYLINDRICAL PARTS**

■ Hold cylindrical parts with the 3-jaw clamp, cones or Vs.



**MULTIPLE PARTS AT ONCE**

■ Increase CMM productivity by using multiple-part setups.



components can be threaded together to create variable lengths

use either towers (shown here) or XTensions (see page 20) to create vertical setups that enable complete access of the part

secure base plate to CMM with available mounting holes

labeled on all four sides for quicker setup and documentation

R&R cast aluminum base plates are made with NiTuff hard coat anodize to resist scratching

## Setup Multiple Parts at a Time

Whether you are checking similar parts or a variety of parts, you can have as many setups on the base plate as feasibly possible, making your CMM even more productive.



Multiple small part setups on an M4 aluminum base plate.

## CMM Plates

R&R CMM base plates are available in standard and custom sizes. Base plates are all precision ground within tight tolerances which are key to the accuracy of the R&R modular fixturing system. Cast aluminum base plates are made with NiTuff hard coat anodize to resist scratching and wear longer. Steel plates are made with a black oxide finish and are available in sizes up to 48" x 60" (1200mm x 1500mm).

Base plates are available in standard and custom sizes up to 60" x 120" (1500mm x 3000mm). You can choose between 1/4-20, M8, or M4 threaded holes on the plate.

Mounting holes for attaching the R&R base plate to your CMM are available. A drawing will be provided showing the exact location of the base plate on your specific CMM as well as the mounting hole positions.

mounting holes to attach the base plate to your specific CMM are available

### PLATE EXAMPLES

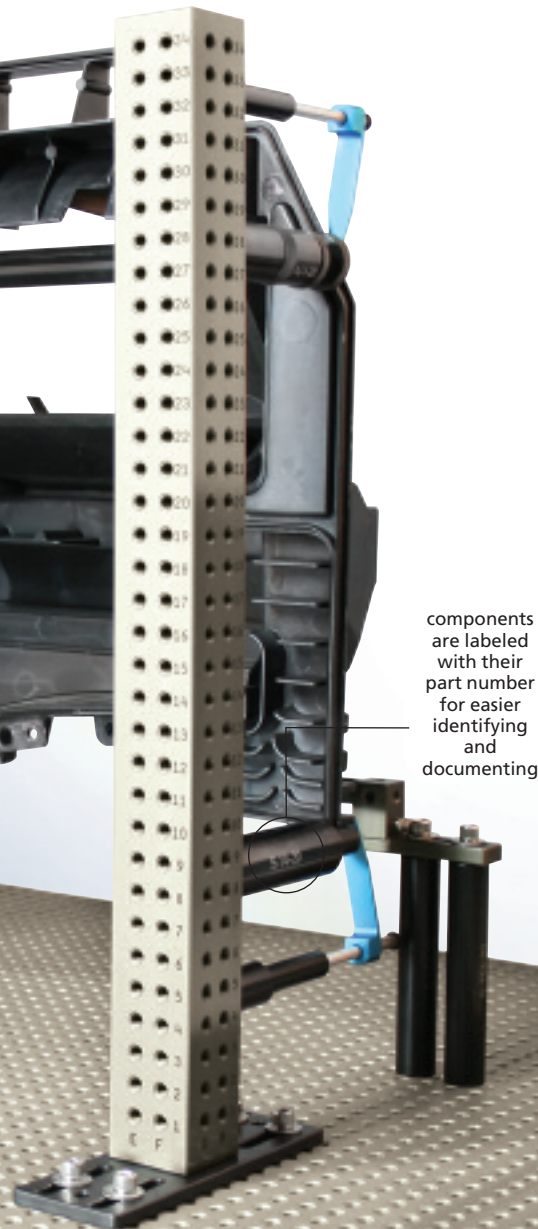
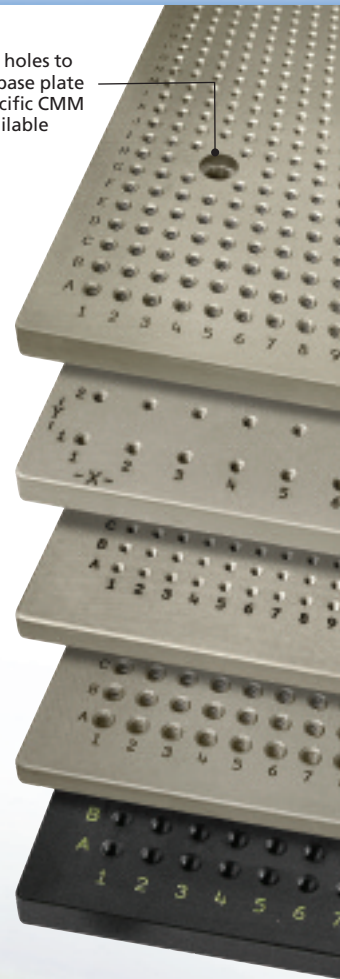
aluminum  
3/4" thick  
1/4-20 threads  
(1/2" o.c.)

aluminum  
3/4" thick  
1/4-20 threads  
(1" o.c.)

aluminum  
13mm thick  
M4 threads  
(10mm o.c.)

aluminum  
13mm thick  
M8 threads  
(15mm o.c.)

steel  
3/4" thick  
1/4-20 threads  
(1/2" o.c.)



components are labeled with their part number for easier identifying and documenting

radius corners and sides for better ergonomics

multiple holes increase component location possibilities

### 1/4-20 Threaded Standard Plate Sizes (inches)

1/2" thick plates	12" x 12"	18" x 18"		
3/4" thick plates	24" x 24"	30" x 30"	28" x 40"	36" x 48"

1/4-20 threaded holes 0.50" on center (1" optional)

### M8 Threaded Standard Plate Sizes (mm)

13mm thick plates	300x300	450x450		
19mm thick plates	600x600	750x750	750x1020	900x1200

M8 threaded holes 15mm on center (30mm optional)

### M4 Threaded Standard Plate Sizes (mm)

13mm thick plates	150x150	300x300	450x450
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M4 threaded holes 10mm on center

## 1/4-20 CMM magnetic & clamping kits

A comprehensive kit for holding steel, aluminum, plastic and other nonferrous parts.

- A kit includes one of the component sets below (A, B, or C) and one base plate with 1/4-20 threaded holes .50" on center (choose from plate sizes listed).
- To determine the part number for the desired kit, select a base plate size and a component set. Example: A 1/4-20 magnetic & clamping kit with a .75" x 24" x 24" base plate and component Set B is part # KC-MC3B-20 (shown here).



BASE PLATE SIZE	SET	PART #
.50" x 12" x 12"	A	KC-MC1A-20
	B	KC-MC1B-20
	C	KC-MC1C-20
.50" x 18" x 18"	A	KC-MC2A-20
	B	KC-MC2B-20
	C	KC-MC2C-20
.75" x 24" x 24"	A	KC-MC3A-20
	B	KC-MC3B-20
	C	KC-MC3C-20
.75" x 30" x 30"	A	KC-MC4A-20
	B	KC-MC4B-20
	C	KC-MC4C-20
.75" x 28" x 40"	A	KC-MC5A-20
	B	KC-MC5B-20
	C	KC-MC5C-20
.75" x 36" x 48"	A	KC-MC6A-20
	B	KC-MC6B-20
	C	KC-MC6C-20

- Sets can be tailored to fit your application.
- Base plate can be modified to fit your CMM.
- Mounting holes used to attach the base plate to your specific CMM machine are available.

### Set A: (47) 1/4-20 components

QTY	PART #	DESCRIPTION
3	M-50-20	.50" dia. x 1.0" magnet
3	M-75-20	.75" dia. x 1.0" magnet
3	M-1-20	1.0" dia. x 1.0" magnet
3	S-5075-20	.50" dia. x .75" standoff
3	S-501-20	.50" dia. x 1.0" standoff
3	S-502-20	.50" dia. x 2.0" standoff
3	S-7575-20	.75" dia. x .75" standoff
3	S-751-20	.75" dia. x 1.0" standoff
3	S-752-20	.75" dia. x 2.0" standoff
3	S-175-20	1.0" dia. x .75" standoff
3	S-11-20	1.0" dia. x 1.0" standoff
3	S-12-20	1.0" dia. x 2.0" standoff
4	CT-250-275-20	2.5" tension clamp with 2.75" post
3	RCD-20	Delrin resting cone
1	AJ-50-20	.50" dia. adjustable jack stand
1	AS-1-20	1.0" adjustable slide
1	AS-3-20	3.0" adjustable slide
1	TC-208-20	20" x 8" x 1" component tray

### Set B: (111) 1/4-20 components

QTY	PART #	DESCRIPTION
4	M-50-20	.50" dia. x 1.0" magnet
4	M-75-20	.75" dia. x 1.0" magnet
4	M-1-20	1.0" dia. x 1.0" magnet
2	MP-50-20	.50" dia. x 1.0" pin magnet
3	S-37550-20	.375" dia. x .50" standoff
6	S-5075-20	.50" dia. x .75" standoff
6	S-501-20	.50" dia. x 1.0" standoff
6	S-502-20	.50" dia. x 2.0" standoff
3	S-7550-20	.75" dia. x .50" standoff
6	S-7575-20	.75" dia. x .75" standoff
6	S-751-20	.75" dia. x 1.0" standoff
6	S-752-20	.75" dia. x 2.0" standoff
3	S-754-20	.75" dia. x 4.0" standoff
6	S-175-20	1.0" dia. x .75" standoff
6	S-11-20	1.0" dia. x 1.0" standoff
6	S-12-20	1.0" dia. x 2.0" standoff
3	S-14-20	1.0" dia. x 4.0" standoff
4	CT-160-125-20	1.6" tension clamp with 1.25" post
8	CT-250-275-20	2.5" tension clamp with 2.75" post
4	RCD-20	Delrin resting cone
4	RPS-20	steel resting pin
2	AJ-50-20	.50" dia. adjustable jack stand
2	AJ-1-20	1.0" dia. adjustable jack stand
2	AS-1-20	1.0" adjustable slide
2	AS-3-20	3.0" adjustable slide
2	TB-751-20	tower block with base
1	TC-208-20	20" x 8" x 1" component tray

### Set C: (163) 1/4-20 components

QTY	PART #	DESCRIPTION
6	M-50-20	.50" dia. x 1.0" magnet
6	M-75-20	.75" dia. x 1.0" magnet
6	M-1-20	1.0" dia. x 1.0" magnet
2	MP-50-20	.50" dia. x 1.0" pin magnet
2	MP-75-20	.75" dia. x 1.0" pin magnet
4	S-37550-20	.375" dia. x .50" standoff
4	S-5050-20	.50" dia. x .50" standoff
8	S-5075-20	.50" dia. x .75" standoff
8	S-501-20	.50" dia. x 1.0" standoff
8	S-502-20	.50" dia. x 2.0" standoff
4	S-7550-20	.75" dia. x .50" standoff
8	S-7575-20	.75" dia. x .75" standoff
8	S-751-20	.75" dia. x 1.0" standoff
8	S-752-20	.75" dia. x 2.0" standoff
6	S-754-20	.75" dia. x 4.0" standoff
8	S-175-20	1.0" dia. x .75" standoff
8	S-11-20	1.0" dia. x 1.0" standoff
8	S-12-20	1.0" dia. x 2.0" standoff
6	S-14-20	1.0" dia. x 4.0" standoff
4	CT-160-125-20	1.6" tension clamp with 1.25" post
8	CT-250-275-20	2.5" tension clamp with 2.75" post
2	CT-375-325-20	3.75" tension clamp with 3.25" post
1	CTB-1-20	1.0" tension clamp bracket
6	RCD-20	Delrin resting cone
6	RPS-20	steel resting pin
1	APJ-20	adjustable pivot joint
3	AJ-50-20	.50" dia. adjustable jack stand
3	AJ-1-20	1.0" dia. adjustable jack stand
3	AS-1-20	1.0" adjustable slide
3	AS-3-20	3.0" adjustable slide
2	TB-751-20	tower block with base
1	T-112-20	1.0" sq. x 12" tower (1 Row, 4 Sides)
2	TC-208-20	20" x 8" x 1" component tray

preconfigured kits make it easy to start

component tray to hold and organize components

kits can be utilized for an unlimited number of parts

## 1/4-20 CMM clamping kits

A comprehensive kit for holding aluminum, plastic, brass, titanium and other nonferrous parts.

- A kit includes one of the component sets below (A, B, or C) and one base plate with 1/4-20 threaded holes .50" on center (choose from plate sizes listed).
- To determine the part number for the desired kit, select a base plate size and a component set.  
Example: A 1/4-20 clamping kit with a .75" x 24" x 24" base plate and component Set B is part # KC-C3B-20 (shown here).



BASE PLATE SIZE	SET	PART #
.50" x 12" x 12"	A	KC-C1A-20
	B	KC-C1B-20
	C	KC-C1C-20
.50" x 18" x 18"	A	KC-C2A-20
	B	KC-C2B-20
	C	KC-C2C-20
.75" x 24" x 24"	A	KC-C3A-20
	B	KC-C3B-20
	C	KC-C3C-20
.75" x 30" x 30"	A	KC-C4A-20
	B	KC-C4B-20
	C	KC-C4C-20
.75" x 28" x 40"	A	KC-C5A-20
	B	KC-C5B-20
	C	KC-C5C-20
.75" x 36" x 48"	A	KC-C6A-20
	B	KC-C6B-20
	C	KC-C6C-20

- Sets can be tailored to fit your application.
- Base plate can be modified to fit your CMM.
- Mounting holes used to attach the base plate to your specific CMM machine are available.

### Set A: (42) 1/4-20 components

QTY	PART #	DESCRIPTION
3	S-5075-20	.50" dia. x .75" standoff
3	S-501-20	.50" dia. x 1.0" standoff
3	S-502-20	.50" dia. x 2.0" standoff
3	S-7575-20	.75" dia. x .75" standoff
3	S-751-20	.75" dia. x 1.0" standoff
3	S-752-20	.75" dia. x 2.0" standoff
3	S-175-20	1.0" dia. x .75" standoff
3	S-11-20	1.0" dia. x 1.0" standoff
3	S-12-20	1.0" dia. x 2.0" standoff
2	SP-501-20	.50" dia. x 1.0" pin standoff
2	CT-160-125-20	1.6" tension clamp with 1.25" post
4	CT-250-275-20	2.5" tension clamp with 2.75" post
3	RCD-20	Delrin resting cone
1	AJ-50-20	.50" dia. adjustable jack stand
1	AS-1-20	1.0" adjustable slide
1	AS-3-20	3.0" adjustable slide
1	TC-208-20	20" x 8" x 1" component tray

### Set B: (109) 1/4-20 components

QTY	PART #	DESCRIPTION
3	S-37550-20	.375" dia. x .50" standoff
6	S-5075-20	.50" dia. x .75" standoff
6	S-501-20	.50" dia. x 1.0" standoff
6	S-502-20	.50" dia. x 2.0" standoff
3	S-7550-20	.75" dia. x .50" standoff
6	S-7575-20	.75" dia. x .75" standoff
6	S-751-20	.75" dia. x 1.0" standoff
6	S-752-20	.75" dia. x 2.0" standoff
4	S-754-20	.75" dia. x 4.0" standoff
6	S-175-20	1.0" dia. x .75" standoff
6	S-11-20	1.0" dia. x 1.0" standoff
6	S-12-20	1.0" dia. x 2.0" standoff
4	S-14-20	1.0" dia. x 4.0" standoff
4	SP-501-20	.50" dia. x 1.0" pin standoff
6	CT-160-125-20	1.6" tension clamp with 1.25" post
12	CT-250-275-20	2.5" tension clamp with 2.75" post
4	RCD-20	Delrin resting cone
4	RPS-20	steel resting pin
2	AJ-50-20	.50" dia. adjustable jack stand
2	AJ-1-20	1.0" dia. adjustable jack stand
2	AS-1-20	1.0" adjustable slide
2	AS-3-20	3.0" adjustable slide
2	TB-751-20	tower block with base
1	TC-208-20	20" x 8" x 1" component tray

### Set C: (161) 1/4-20 components

QTY	PART #	DESCRIPTION
6	S-37550-20	.375" dia. x .50" standoff
4	S-5050-20	.50" dia. x .50" standoff
8	S-5075-20	.50" dia. x .75" standoff
8	S-501-20	.50" dia. x 1.0" standoff
8	S-502-20	.50" dia. x 2.0" standoff
4	S-7550-20	.75" dia. x .50" standoff
8	S-7575-20	.75" dia. x .75" standoff
8	S-751-20	.75" dia. x 1.0" standoff
8	S-752-20	.75" dia. x 2.0" standoff
6	S-754-20	.75" dia. x 4.0" standoff
8	S-175-20	1.0" dia. x .75" standoff
8	S-11-20	1.0" dia. x 1.0" standoff
8	S-12-20	1.0" dia. x 2.0" standoff
6	S-14-20	1.0" dia. x 4.0" standoff
4	SP-501-20	.50" dia. x 1.0" pin standoff
2	SP-751-20	.75" dia. x 1.0" pin standoff
6	CT-160-125-20	1.6" tension clamp with 1.25" post
12	CT-250-275-20	2.5" tension clamp with 2.75" post
3	CT-375-325-20	3.75" tension clamp with 3.25" post
3	CT-4P-325-20	4.0" tension clamp plunger with 3.25" post
1	CTB-1-20	1.0" tension clamp bracket
6	RCD-20	Delrin resting cone
6	RPS-20	steel resting pin
1	APJ-20	adjustable pivot joint
4	AJ-50-20	.50" dia. adjustable jack stand
3	AJ-1-20	1.0" dia. adjustable jack stand
3	AS-1-20	1.0" adjustable slide
4	AS-3-20	3.0" adjustable slide
2	TB-751-20	tower block with base
1	T-112-20	1.0" sq. x 12" tower (1 Row, 4 Sides)
2	TC-208-20	20" x 8" x 1" component tray

## M8 CMM magnetic & clamping kits

A comprehensive kit for holding steel, aluminum, plastic and other nonferrous parts.

- A kit includes one of the component sets below (A, B, or C) and one base plate with M8 threaded holes 15mm on center (choose from plate sizes listed).
- To determine the part number for the desired kit, select a base plate size and a component set.  
Example: An M8 magnetic & clamping kit with a 13mm x 450mm x 450mm plate and component Set B is part # KC-MC2B-8 (shown here).



BASE PLATE SIZE	SET	PART #
13mm x 300mm x 300mm	A	KC-MC1A-8
	B	KC-MC1B-8
	C	KC-MC1C-8
13mm x 450mm x 450mm	A	KC-MC2A-8
	B	KC-MC2B-8
	C	KC-MC2C-8
19mm x 600mm x 600mm	A	KC-MC3A-8
	B	KC-MC3B-8
	C	KC-MC3C-8
19mm x 750mm x 750mm	A	KC-MC4A-8
	B	KC-MC4B-8
	C	KC-MC4C-8
19mm x 750mm x 1020mm	A	KC-MC5A-8
	B	KC-MC5B-8
	C	KC-MC5C-8
19mm x 900mm x 1200mm	A	KC-MC6A-8
	B	KC-MC6B-8
	C	KC-MC6C-8

- Sets can be tailored to fit your application.
- Base plate can be modified to fit your CMM.
- Mounting holes used to attach the base plate to your specific CMM machine are available.

### Set A: (45) M8 components

QTY	PART #	DESCRIPTION
3	M-13-8	13mm dia. x 25mm magnet
3	M-19-8	19mm dia. x 25mm magnet
3	M-25-8	25mm dia. x 25mm magnet
3	S-1320-8	13mm dia. x 20mm standoff
3	S-1325-8	13mm dia. x 25mm standoff
3	S-1350-8	13mm dia. x 50mm standoff
3	S-1920-8	19mm dia. x 20mm standoff
3	S-1925-8	19mm dia. x 25mm standoff
3	S-1950-8	19mm dia. x 50mm standoff
3	S-2520-8	25mm dia. x 20mm standoff
3	S-2525-8	25mm dia. x 25mm standoff
3	S-2550-8	25mm dia. x 50mm standoff
3	CT-64-70-8	64mm tension clamp with 70mm post
3	RCD-8	Delrin resting cone
1	AJ-19-8	19mm dia. adjustable jack stand
1	AS-70-8	70mm long adjustable slide
1	TC-500200-8	500mm x 200mm x 25mm component tray

### Set B: (112) M8 components

QTY	PART #	DESCRIPTION
4	M-13-8	13mm dia. x 25mm magnet
4	M-19-8	19mm dia. x 25mm magnet
4	M-25-8	25mm dia. x 25mm magnet
2	MP-13-8	13mm dia. x 25mm pin magnet
3	S-1315-8	13mm dia. x 15mm standoff
6	S-1320-8	13mm dia. x 20mm standoff
6	S-1325-8	13mm dia. x 25mm standoff
6	S-1350-8	13mm dia. x 50mm standoff
3	S-1915-8	19mm dia. x 15mm standoff
6	S-1920-8	19mm dia. x 20mm standoff
6	S-1925-8	19mm dia. x 25mm standoff
6	S-1950-8	19mm dia. x 50mm standoff
4	S-19100-8	19mm dia. x 100mm standoff
6	S-2520-8	25mm dia. x 20mm standoff
6	S-2525-8	25mm dia. x 25mm standoff
6	S-2550-8	25mm dia. x 50mm standoff
4	S-25100-8	25mm dia. x 100mm standoff
4	CT-40-30-8	40mm tension clamp with 30mm post
8	CT-64-70-8	64mm tension clamp with 70mm post
4	RCD-8	Delrin resting cone
4	RCS-8	steel resting cone
2	AJ-19-8	19mm dia. adjustable jack stand
2	AJ-25-8	25mm dia. adjustable jack stand
3	AS-70-8	70mm long adjustable slide
2	TB-2530-8	M8 tower block with base
1	TC-500200-8	500mm x 200mm x 25mm component tray

### Set C: (152) M8 components

QTY	PART #	DESCRIPTION
6	M-13-8	13mm dia. x 25mm magnet
6	M-19-8	19mm dia. x 25mm magnet
6	M-25-8	25mm dia. x 25mm magnet
2	MP-13-8	13mm dia. x 25mm pin magnet
2	MP-19-8	19mm dia. x 25mm pin magnet
3	S-1315-8	13mm dia. x 15mm standoff
8	S-1320-8	13mm dia. x 20mm standoff
8	S-1325-8	13mm dia. x 25mm standoff
8	S-1350-8	13mm dia. x 50mm standoff
3	S-1915-8	19mm dia. x 15mm standoff
8	S-1920-8	19mm dia. x 20mm standoff
8	S-1925-8	19mm dia. x 25mm standoff
8	S-1950-8	19mm dia. x 50mm standoff
6	S-19100-8	19mm dia. x 100mm standoff
8	S-2520-8	25mm dia. x 20mm standoff
8	S-2525-8	25mm dia. x 25mm standoff
8	S-2550-8	25mm dia. x 50mm standoff
6	S-25100-8	25mm dia. x 100mm standoff
4	CT-40-30-8	40mm tension clamp with 30mm post
8	CT-64-70-8	64mm tension clamp with 70mm post
2	CT-95-83-8	95mm tension clamp with 83mm post
1	CTB-25-8	25mm tension clamp bracket
4	RCD-8	Delrin resting cone
4	RCS-8	steel resting cone
1	APJ-8	adjustable pivot joint
3	AJ-19-8	19mm dia. adjustable jack stand
3	AJ-25-8	25mm dia. adjustable jack stand
5	AS-70-8	70mm long adjustable slide
2	TB-2530-8	M8 tower block with base
1	T-25300-8	25mm Sq. x 300mm tower (1 Row, 4 Sides)
2	TC-500200-8	500mm x 200mm x 25mm component tray

preconfigured kits make it easy to start

component tray to hold and organize components

kits can be utilized for an unlimited number of parts

## M8 CMM clamping kits

A comprehensive kit for holding aluminum, plastic, brass, titanium and other nonferrous parts.

- A kit includes one of the component sets below (A, B, or C) and one base plate with M8 threaded holes 15mm on center (choose from plate sizes listed).
- To determine the part number for the desired kit, select a base plate size and a component set.  
Example: An M8 clamping kit with a 13mm x 450mm x 450mm plate and component Set B is part # KC-C2B-8 (shown here).



BASE PLATE SIZE	SET	PART #
13mm x 300mm x 300mm	A	KC-C1A-8
	B	KC-C1B-8
	C	KC-C1C-8
13mm x 450mm x 450mm	A	KC-C2A-8
	B	KC-C2B-8
	C	KC-C2C-8
19mm x 600mm x 600mm	A	KC-C3A-8
	B	KC-C3B-8
	C	KC-C3C-8
19mm x 750mm x 750mm	A	KC-C4A-8
	B	KC-C4B-8
	C	KC-C4C-8
19mm x 750mm x 1020mm	A	KC-C5A-8
	B	KC-C5B-8
	C	KC-C5C-8
19mm x 900mm x 1200mm	A	KC-C6A-8
	B	KC-C6B-8
	C	KC-C6C-8

- Sets can be tailored to fit your application.
- Base plate can be modified to fit your CMM.
- Mounting holes used to attach the base plate to your specific CMM machine are available.

### Set A: (41) M8 components

QTY	PART #	DESCRIPTION
3	S-1320-8	13mm dia. x 20mm standoff
3	S-1325-8	13mm dia. x 25mm standoff
3	S-1350-8	13mm dia. x 50mm standoff
3	S-1920-8	19mm dia. x 20mm standoff
3	S-1925-8	19mm dia. x 25mm standoff
3	S-1950-8	19mm dia. x 50mm standoff
3	S-2520-8	25mm dia. x 20mm standoff
3	S-2525-8	25mm dia. x 25mm standoff
3	S-2550-8	25mm dia. x 25mm standoff
2	SP-1325-8	13mm dia. x 25mm pin standoff
2	CT-40-30-8	40mm tension clamp with 30mm post
4	CT-64-70-8	64mm tension clamp with 70mm post
3	RCD-8	Delrin resting cone
1	AJ-19-8	19mm dia. adjustable jack stand
1	AS-70-8	70mm long adjustable slide
1	TC-500200-8	500mm x 200mm x 25mm component tray

### Set B: (108) M8 components

QTY	PART #	DESCRIPTION
3	S-1315-8	13mm dia. x 15mm standoff
6	S-1320-8	13mm dia. x 20mm standoff
6	S-1325-8	13mm dia. x 25mm standoff
6	S-1350-8	13mm dia. x 50mm standoff
3	S-1915-8	19mm dia. x 15mm standoff
6	S-1920-8	19mm dia. x 20mm standoff
6	S-1925-8	19mm dia. x 25mm standoff
6	S-1950-8	19mm dia. x 50mm standoff
4	S-19100-8	19mm dia. x 100mm standoff
6	S-2520-8	25mm dia. x 20mm standoff
6	S-2525-8	25mm dia. x 25mm standoff
6	S-2550-8	25mm dia. x 50mm standoff
4	S-25100-8	25mm dia. x 100mm standoff
4	SP-1325-8	13mm dia. x 25mm pin standoff
6	CT-40-30-8	40mm tension clamp with 30mm post
12	CT-64-70-8	64mm tension clamp with 70mm post
4	RCD-8	Delrin resting cone
4	RCS-8	steel resting cone
2	AJ-19-8	19mm dia. adjustable jack stand
2	AJ-25-8	25mm dia. adjustable jack stand
3	AS-70-8	70mm long adjustable slide
2	TB-2530-8	M8 tower block with base
1	TC-500200-8	500mm x 200mm x 25mm component tray

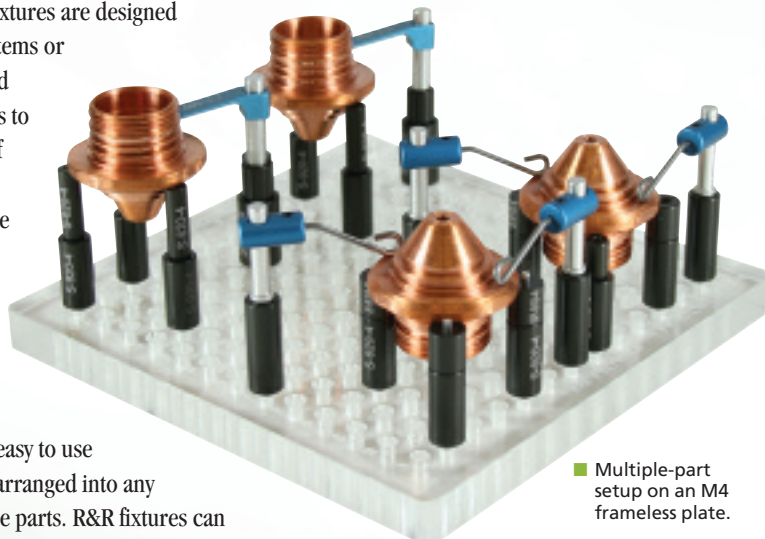
### Set C: (150) M8 components

QTY	PART #	DESCRIPTION
4	S-1315-8	13mm dia. x 15mm standoff
8	S-1320-8	13mm dia. x 20mm standoff
8	S-1325-8	13mm dia. x 25mm standoff
8	S-1350-8	13mm dia. x 50mm standoff
4	S-1915-8	19mm dia. x 15mm standoff
8	S-1920-8	19mm dia. x 20mm standoff
8	S-1925-8	19mm dia. x 25mm standoff
8	S-1950-8	19mm dia. x 50mm standoff
6	S-19100-8	19mm dia. x 100mm standoff
6	S-2520-8	25mm dia. x 20mm standoff
8	S-2525-8	25mm dia. x 25mm standoff
8	S-2550-8	25mm dia. x 50mm standoff
6	S-25100-8	25mm dia. x 100mm standoff
6	SP-1325-8	13mm dia. x 25mm pin standoff
6	CT-40-30-8	40mm tension clamp with 30mm post
12	CT-64-70-8	64mm tension clamp with 70mm post
3	CT-95-83-8	95mm tension clamp with 83mm post
3	CT-100P-83-8	100mm tension clamp plunger with 83mm post
1	CTB-25-8	25mm tension clamp bracket
4	RCD-8	Delrin resting cone
4	RCS-8	steel resting cone
1	APJ-8	adjustable pivot joint
4	AJ-19-8	19mm dia. adjustable jack stand
3	AJ-25-8	25mm dia. adjustable jack stand
6	AS-70-8	70mm long adjustable slide
2	TB-2530-8	M8 tower block with base
1	T-25300-8	25mm Sq. x 300mm tower (1 Row, 4 Sides)
2	TC-500200-8	500mm x 200mm x 25mm component tray

# Improving Your Vision

MODULAR FIXTURING FOR VISION SYSTEMS

R&R modular vision fixtures are designed for use with vision systems or non-contact CMMs and multi-sensor machines to hold parts in as free of state as possible, no matter what size, shape or material.



■ Multiple-part setup on an M4 frameless plate.

## Quick and Easy Setups

Components are very easy to use and can quickly be rearranged into any configuration to secure parts. R&R fixtures can eliminate the downtime on your vision system caused by traditional fixturing methods such as glue, clay, or tape. Your parts can be fixtured within minutes versus hours, obtaining fast and consistent inspection results. An unlimited number of part setups can be easily configured using the various components and hole locations on the base plates. This modular system allows for a practically limitless number of different setup configurations to be made using the same plates and components over and over.

## Made to Hold Anything

The R&R fixture with its multiple holes and various components has the versatility to hold virtually anything. Steel stampings or machined parts can be held to the fixture with magnets, while various clamping methods are provided for aluminum, plastic, brass, and other non-ferrous materials. R&R is continuously adding to the selection of components to make the fixturing even more flexible and easy to use.

## Size Matters

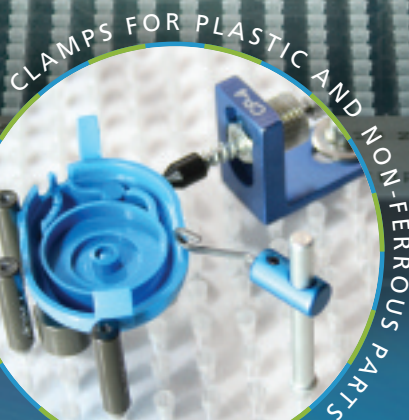
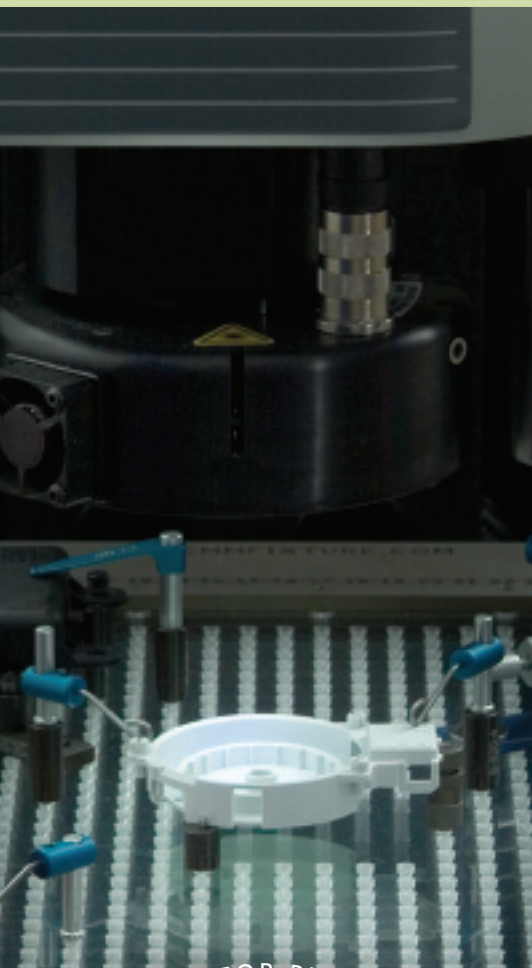
Today's parts are becoming smaller and more intricate. We have addressed this by creating smaller vision fixturing components. These components make it easier to see features of the part without obstructing the backlight or probe path while still holding the part securely. There are two thread sizes available; either M4 with threaded holes 10mm on center or 1/4-20 with threaded holes 1/2" on center. The M4 thread size is recommended for parts that are no larger than the palm of your hand.

## Clearly Accurate

The acrylic base plate allows for a clear, clean look at the part when elevated from the surface by the components. Because the components allow the part to be set up in a virtually free state with very little force applied to the surface, repeatability and reproducibility are dramatically improved.

### R&R MODULAR FIXTURE BENEFITS:

- ease of use
- unlimited number of setups
- setup within minutes
- affordable for any budget
- recordable



## Built To Save Time

When a part is being checked on a more frequent basis, you can dedicate a specific area or base plate to that part for a quick check, saving on setup time and allowing your inspection department to be even more productive. When engineering changes are made or the part is not being checked as often, the components can be used to create a setup for a different part. This modular design saves both time and money as compared to traditional fixturing methods.

## Results You Can Count On

The R&R fixture base plate is alphanumerically labeled and each of our components are identified with a part number. This allows users to accurately record and consistently create the part setup the same way each and every time. Setups can be recorded manually or with R&R's unique CAD software, FixtureBuilder. This is especially helpful when there may be multiple users or a long time period between setups.

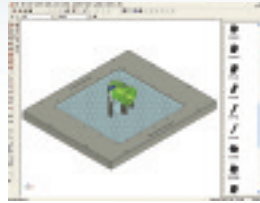


## Custom Framing

Each vision fixture can be custom tailored to fit the exact specifications and stage size of your particular vision system. The fixture can be made with an aluminum frame that mounts to the stage of your machine. The center of our larger acrylic fixtures has an area without threaded holes to ensure an unobstructed view for the smallest of parts.

## Document With FixtureBuilder

R&R's FixtureBuilder software enables you to bring your part's CAD models into the fixture setup, document the setup and automatically create a build list showing which



■ FixtureBuilder is a 3D fixture modeling software that creates R&R setups for documenting and off-line programming. See page 18.

components were used and their locations.

Next time the part is checked, the operator can pull up the build list to set it up accurately each and every time. FixtureBuilder also creates a standard for ISO and QS 9000.

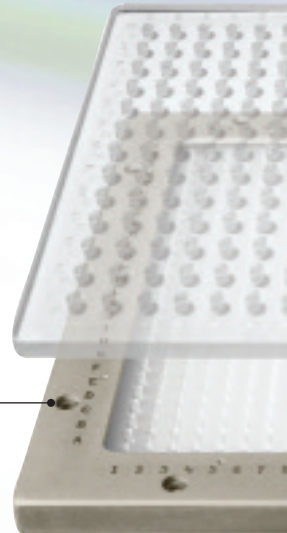
## Bottom Line...Cost Savings

The R&R fixture's modular design can decrease your inspection cost by improving productivity and efficiency of your inspection department, helping you stay competitive in today's world...a clear cost savings advantage.

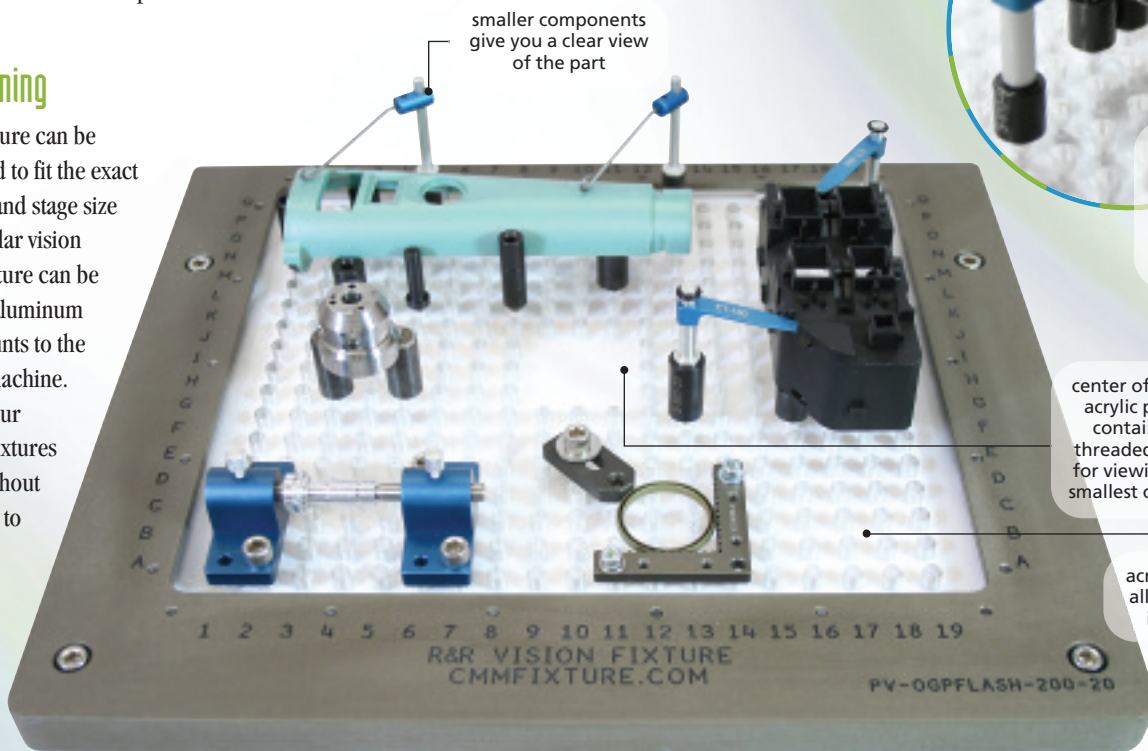
## VARIATIONS

Vision base plates are available with and without a cast aluminum frame.

mounting holes to attach the R&R base plate to your specific machine are available



THREADS	SPACING	THICKNESS
<b>M4</b>	10mm o.c.	13mm
		19mm
		25mm
<b>1/4-20</b>	.50" o.c.	.50"
		.75"
		.1"



smaller components give you a clear view of the part

center of larger acrylic plates contain no threaded holes for viewing the smallest of parts

acrylic base plate allows backlight illumination



■ Cylindrical and tubular parts can be held using clamps, resting pins, cones, and Vs.

setups within minutes = short pay back period

## M4 vision kits

A comprehensive kit for holding plastic, aluminum, rubber, and other nonferrous parts. Ideal for parts that fit in a 3" x 3" cube.

- A kit includes one of the component sets below (A or B) and one R&R acrylic base plate with M4 threaded holes 10mm on center (choose from plate sizes listed). Our base plates can be designed to fit the stage of your vision system.
- To determine the part number for the desired kit, select the size of the base plate.  
Example: An M4 vision kit with a 19mm x 300mm x 300mm plate with frame and component Set B is part # KV-C4B-4 (shown here).



### Set A: (37) M4 components

QTY	PART #	DESCRIPTION
3	S-610-4	6mm dia. x 10mm standoff
3	S-625-4	6mm dia. x 25mm standoff
3	S-95-4	9mm dia. x 5mm standoff
3	S-910-4	9mm dia. x 10mm standoff
3	S-925-4	9mm dia. x 25mm standoff
3	S-1210-4	12mm dia. x 10mm standoff
2	SP-610-4	6mm dia. x 10mm pin standoff
2	SP-910-4	9mm dia. x 10mm pin standoff
2	CT-40-25-4	40mm tension clamp with 25mm post w/ M4 thread
3	CW-25-25-4	25mm wire clamp with 25mm post
2	CW-50-50-4	50mm wire clamp with 50mm post
4	RPA-4	aluminum resting pin
1	VC-5050-4	50mm x 50mm corner viewer for M4
1	AJ-9-4	9mm dia. adjustable jack stand
1	AS-30-4	30mm Long adjustable slide
1	XT-Box	organizer box



- Set A includes an organizer box instead of a component tray.

### Set B: (84) M4 components

QTY	PART #	DESCRIPTION
3	S-65-4	6mm dia. x 5mm standoff
6	S-610-4	6mm dia. x 10mm standoff
6	S-625-4	6mm dia. x 25mm standoff
3	S-95-4	9mm dia. x 5mm standoff
6	S-910-4	9mm dia. x 10mm standoff
6	S-920-4	9mm dia. x 20mm standoff
6	S-925-4	9mm dia. x 25mm standoff
6	S-1210-4	12mm dia. x 10mm standoff
6	S-1225-4	12mm dia. x 25mm standoff
4	SP-610-4	6mm dia. x 10mm pin standoff
4	SP-910-4	9mm dia. x 10mm pin standoff
4	SP-1210-4	12mm dia. x 10mm pin standoff
4	CT-40-25-4	40mm tension clamp with 25mm post
4	CW-25-25-4	25mm wire clamp with 25mm post
4	CW-50-50-4	50mm wire clamp with 50mm post
4	RPA-4	aluminum resting pin
1	VC-5050-4	50mm x 50mm corner viewer for M4
2	AJ-9-4	9mm dia. adjustable jack stand
1	CP-4	M4 pusher clamp
2	AS-30-4	30mm long adjustable slide
1	TB-1619-4	M4 tower block with base
1	TC-300190-4	300mm x 190mm x 25mm component tray to hold M4 components

### Base plates without frame



BASE PLATE SIZE	SET	PART #
13mm x 150mm x 150mm	A	KV-C1A-4
	B	KV-C1B-4
13mm x 250mm x 250mm	A	KV-C2A-4
	B	KV-C2B-4

### Base plates with frame



BASE PLATE SIZE	SET	PART #
19mm x 300mm x 300mm	A	KV-C3A-4
	B	KV-C3B-4
19mm x 450mm x 450mm	A	KV-C4A-4
	B	KV-C4B-4
19mm x 600mm x 600mm	A	KV-C5A-4
	B	KV-C5B-4

- Sets can be tailored to fit your application.
- Base plate can be modified to fit your machine.
- Mounting holes used to attach the base plate to your specific vision system are available.

preconfigured kits make it easy to start

component tray to hold and organize components

kits can be utilized for an unlimited number of parts

## 1/4-20 vision kits

A comprehensive kit for holding plastic, aluminum, rubber, and other nonferrous parts.

- A kit includes one of the component sets below (A or B) and one R&R acrylic base plate with 1/4-20 threaded holes .50" on center (choose from plate sizes listed). Our base plates can be designed to fit the stage of your vision system.
- To determine the part number for the desired kit, select the size of the base plate.  
Example: A 1/4-20 vision kit with a .75" x 12" x 12" plate with frame and component Set B is part # KV-C3B-20 (shown here).



### Set A: (37) 1/4-20 components

QTY	PART #	DESCRIPTION
3	S-2550-20	.25" dia. x .50" standoff
3	S-251-20	.25" dia. x 1.0" standoff
3	S-37525-20	.375" dia. x .25" standoff
3	S-37550-20	.375" dia. x .50" standoff
3	S-3751-20	.375" dia. x 1.0" standoff
3	S-5050-20	.50" dia. x .50" standoff
2	SP-2550-20	.25" dia. x .50" pin standoff
2	SP-37550-20	.375" dia. x .50" pin standoff
2	CT-160-125-20	1.6" tension clamp with 1.25" post
3	CW-1-1-20	1.0" wire clamp with 1.0" post
2	CW-2-2-20	2.0" wire clamp with 2.0" post
4	RPS-20	steel resting pin
1	VC-33-20	3.25" x 3.25" corner viewer for 1/4-20
1	AJ-50-20	.50" dia. adjustable jack stand
1	AS-1-20	1.0" long adjustable slide
1	XT-Box	organizer box



- Set A includes an organizer box instead of a component tray.

### Set B: (83) 1/4-20 components

QTY	PART #	DESCRIPTION
6	S-2550-20	.25" dia. x .50" standoff
6	S-251-20	.25" dia. x 1.0" standoff
3	S-37525-20	.375" dia. x .25" standoff
6	S-37550-20	.375" dia. x .50" standoff
6	S-37575-20	.375" dia. x .75" standoff
6	S-3751-20	.375" dia. x 1.0" standoff
6	S-5050-20	.50" dia. x .50" standoff
6	S-501-20	.50" dia. x 1.0" standoff
4	SP-2550-20	.25" dia. x .50" pin standoff
4	SP-37550-20	.375" dia. x .50" pin standoff
4	SP-501-20	.50" dia. x 1.0" pin standoff
6	CT-160-125-20	1.6" tension clamp with 1.25" post
4	CW-1-1-20	1.0" wire clamp with 1.0" post
4	CW-2-2-20	2.0" wire clamp with 2.0" post
4	RPS-20	steel resting pin
1	VC-33-20	3.25" x 3.25" corner viewer for 1/4-20
2	AJ-50-20	.50" dia. adjustable jack stand
1	CP-20	1/4-20 pusher clamp
2	AS-1-20	1.0" long adjustable slide
1	TB-751-20	1/4-20 tower block with base
1	TC-208-20	20" x 8" x 1" component tray to hold 1/4-20 components

### Base plates without frame



BASE PLATE SIZE	SET	PART #
.50" x 6" x 6"	A	KV-C1A-20
	B	KV-C1B-20
.50" x 10" x 10"	A	KV-C2A-20
	B	KV-C2B-20

### Base plates with frame



BASE PLATE SIZE	SET	PART #
.75" x 12" x 12"	A	KV-C3A-20
	B	KV-C3B-20
.75" x 18" x 18"	A	KV-C4A-20
	B	KV-C4B-20
.75" x 24" x 24"	A	KV-C5A-20
	B	KV-C5B-20

- Sets can be tailored to fit your application.
- Base plate can be modified to fit your machine.
- Mounting holes used to attach the base plate to your specific vision system are available.

# Specialized Fixtures

WE CAN DESIGN AND BUILD IT FOR YOU

When your application calls for something more specialized, we can provide you with special details and fixtures for your CMM or vision system. Let our 15 years plus experience and knowledge in the CMM and vision industry create a fixture for your specific needs.

## We Take It All Into Consideration

Our engineers will work with you to first conceive and then fully design the best fixture for your application. All aspects of your specific job are taken into consideration:

- how the part will be checked – CMM with touch probe or backlight with vision system
- how frequently the part will be checked
- the type of material, size and shape
- dimensions and tolerances of the part
- datums or orientation of part
- weight and size of fixture

## Not All Parts Are Created Equal

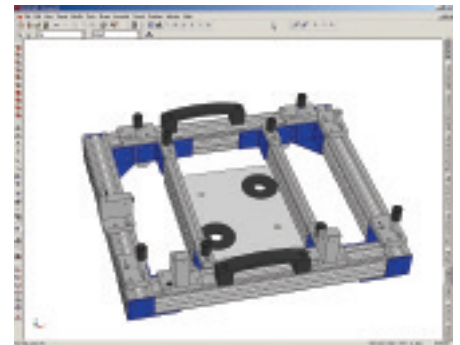
Our engineering and design team have worked with numerous companies from aerospace, automotive, appliance, electronic, industrial and medical industries to design and build fixtures for a variety of parts and applications.

## One Stop Shop

We specialize in both CMM and vision fixturing. For quoting and technical assistance on specialized fixtures, simply send pictures, parts, prints, or CAD files to us to review for your particular application. We are the only company dedicated to providing custom and modular fixturing for CMMs and vision systems.

## Knowledge and Experience Counts

Our engineers create innovative fixtures backed with their knowledge and experience dealing with touch probes and backlighting. They work closely with our customers from the beginning to the end of a project to make sure that our customers are seeing and understanding what they will be getting. Our engineers work hard to get it right the first time, allowing for probe clearances and accessing the part in the most efficient way without over-fixturing.



■ The most current CAD software is utilized for design and engineering. Most CAD formats are supported (ex: IGES, STEP, SAT, CATIA).



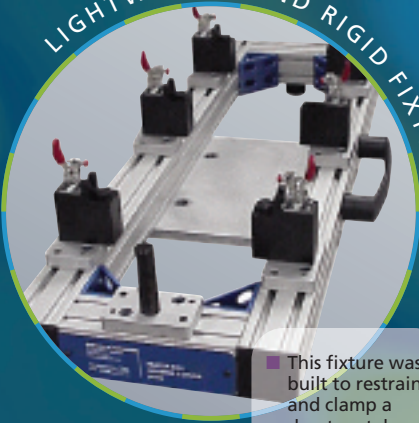
■ A multi-station fixture with spring-loaded Vs to secure different diameters (shown in dwg).

HOLD MULTIPLE PARTS AT ONCE

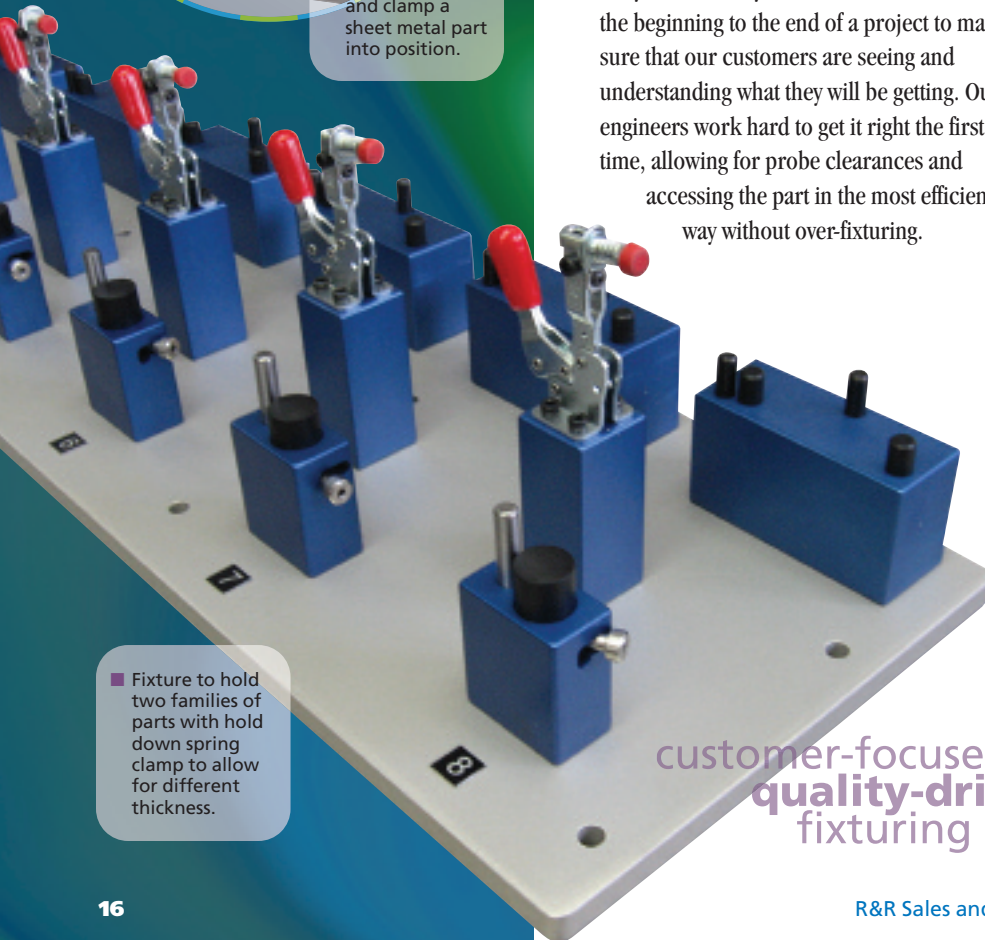


■ Multiple station fixture that holds tapered parts down against stops with a push clamp.

LIGHTWEIGHT AND RIGID FIXTURES



■ This fixture was built to restrain and clamp a sheet metal part into position.



■ Fixture to hold two families of parts with hold down spring clamp to allow for different thickness.

customer-focused,  
quality-driven  
fixturing

R&R can help you create turnkey fixturing from concept thru build

- This fixture accommodates a family of different parts that need to be restrained.



if you can make it  
we can hold it

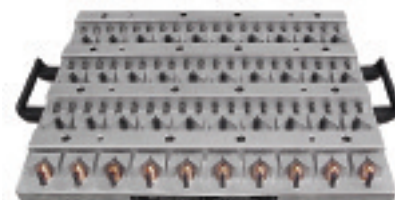
- Large part to be held and restrained against datums, using our lightweight frame XTensions.



- Interchangeable acrylic base plates that mount within aluminum frame.



For more examples see [cmmfixture.com](http://cmmfixture.com)



- Multiple station fixture that accommodates a wide range of diameters. The bars can be moved to change between two different groups of parts.



- 16-piece fixture that accommodates different diameters and lengths of shafts using clamps and a locating stop.



- Fixture to hold 8 parts at a time with 3-jaw clamps that can hold parts on the inside or outside dia. ranging from .25mm to 2.25 inches.



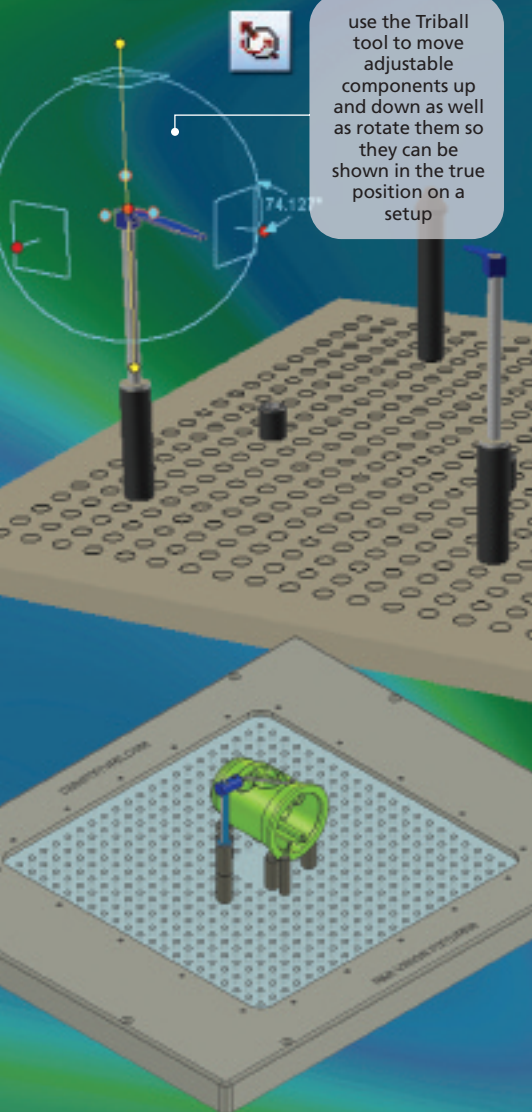
- Part held vertically with minimum contact on the part for almost complete access around the part (same setup on opposite side).

# Document Fixtures in a Snap

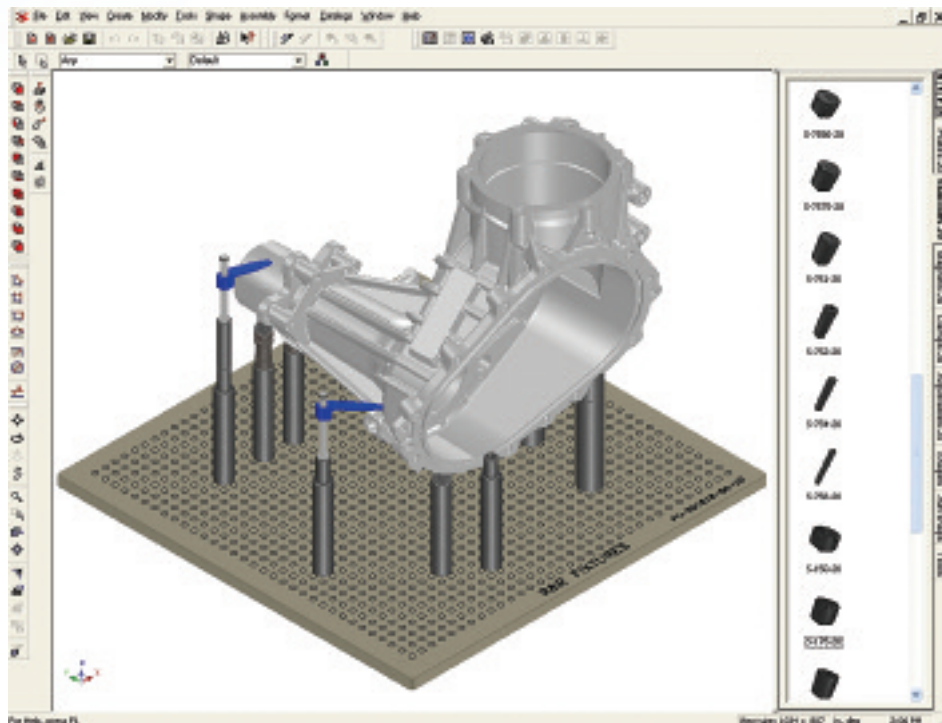
MODULAR FIXTURING WITHIN CAD



components are organized by thread size as well as categories into tabbed catalogs

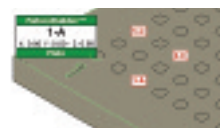


use the Triball tool to move adjustable components up and down as well as rotate them so they can be shown in the true position on a setup



FixtureBuilder is a 3D fixture modeling software from R&R that is integrated with the CAD software from IronCad. FixtureBuilder is used for documenting R&R fixture setups and also enables offline programming of the fixture. You don't have to be a CAD engineer to use FixtureBuilder—it's as easy to use as our modular R&R fixture is. Programming part setups into your CMM or vision system has never been quicker and easier!

automatically aligns the component while indicating the hole position on the plate as well as the X, Y, and Z coordinates.



Adjustable components such as jack stands and tension clamps can also be adjusted with the use of the Triball tool to rotate or swivel into position on a part just as they would be in the real setup.

## Drag and Snap

Once the actual part setup is finalized, you can begin to build the fixture setup within FixtureBuilder. Start by selecting your specific R&R base plate then simply drag and snap components from the tabbed catalogs onto the plate into the desired positions.

As components are moved out onto the base plate, IronCad's SmartSnap® technology

## At Your Fingertips

All standard base plates and components are organized into convenient tabbed catalogs grouped by thread size (1/4-20, M8, M4). The exact R&R component can be selected from the catalog and snapped into its proper alignment on the base plate.



■ Within the catalogs each plate and component is labeled with its part number for easy identification.

## Automatic Build List

Once the setup is complete, you can create a step-by-step build list with just one click. A bill of materials is also generated as well as preview images of the completed fixture. This listing of information can be edited in Microsoft Word to customize the header with your company's information, part name or number, CMM technician, and any other pertinent information.

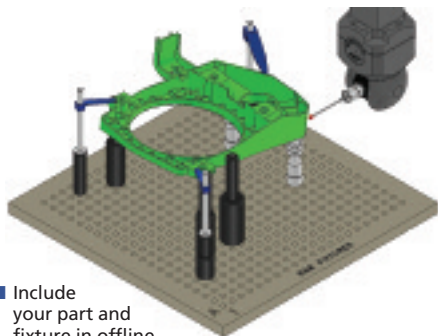
## Import and Export from CAD

Your part's CAD file can be imported into FixtureBuilder so that it can be positioned onto the setup. Then the entire setup, along with your part, can be exported into your CMM software. FixtureBuilder supports most common CAD formats including IGES, SAT, STEP, and AutoCAD. PRO-E and CATIA are also available as add-on modules.



## Less Time Offline

FixtureBuilder can export the setup for offline programming. You can export the part and the fixture together. This can greatly reduce editing in an offline CMM program where fixturing components could possibly interfere with probe clearances.



- Include your part and fixture in offline programming.

You can also choose to export just the fixture setup and then bring your part into the fixture within your own CMM software.



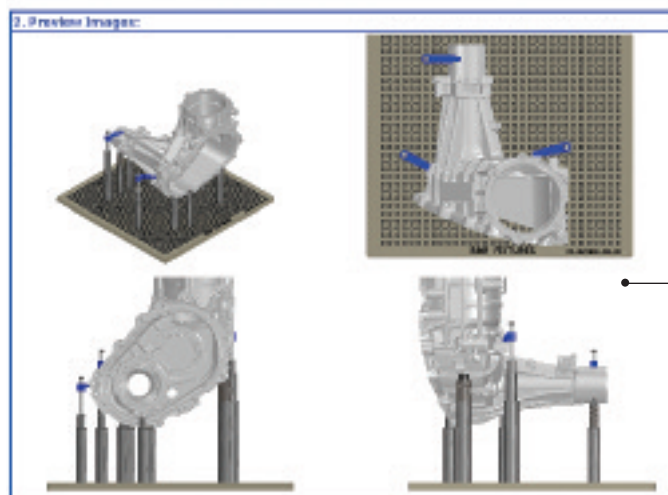
- With a click of this button, documenting setups has never been easier.

1. Setup Instructions:

Instructions For Assembly (Unpacked) Part:

- 1.1 Start with plate 18 X 18 X .80 X .50 G.C.T.
- 1.2 Attach 1.80 X 8.00 STANDOFF onto plate at 20-B followed by: 1 - 1.75 X 2.00 STANDOFF, 1 - 1.50 X 1.00 STANDOFF
- 1.3.1 Attach CUSTOMER PART onto previous item at location shown
- 1.3.2 Attach 1.80 X 4.00 STANDOFF onto plate at 28-D followed by: 1 - 1.80 X 3.80 STANDOFF, 1 - 1.75 DIA JACK STAND
- 1.3.3 Attach 1.75 X 4.00 STANDOFF onto plate at 7-Z followed by: 1 - 1.50 X 1.80 STANDOFF, 1 - 1.80 X 2.00 STANDOFF
- 1.3.4 Attach CUSTOMER PART onto previous item at location shown
- 1.4 Attach 1.75 X 4.00 STANDOFF onto plate at 30-B
- 1.4.1 Attach STEEL CONE onto previous item at location shown
- 1.5 Attach 1.75 X 4.00 STANDOFF onto plate at 33-E followed by: 1 - 1.50 X 1.75 STANDOFF
- 1.6 Attach 1.75 X 4.00 STANDOFF onto plate at 4-M followed by: 1 - 1.50 X 1.00 STANDOFF
- 1.6.1 Attach CUSTOMER PART onto previous item at location shown
- 1.7 Attach 1.75 X 4.00 STANDOFF onto plate at 34-Z
- 1.7.1 Attach 1.50 DIA JACK STAND onto previous item at location shown
- 1.8 Attach 1.75 X 4.00 STANDOFF onto plate at 11-Z
- 1.8.1 Attach 1.80 DIA JACK STAND onto previous item at location shown

- the build list includes setup instructions that gives the name and base plate location of each component used within the setup



- four views of the finished setup are shown

3. Bill Of Materials:

Part Number	Quantity	Description
	12	CUSTOMER PART
PC-281828-80-20	1	18 X 18 X .80 X .50 G.C.T.
SC8-28	3	STEEL CONE
S-T80-20	1	.75 X 8.00 STANDOFF
S-T54-20	6	.75 X 4.00 STANDOFF
S-S01-20	3	.80 X 1.80 STANDOFF
S-S075-20	1	.80 X .75 STANDOFF
S-S02-20	1	.90 X 2.80 STANDOFF
S-14-20	1	1.00 X 4.00 STANDOFF
S-12-20	1	1.00 X 2.00 STANDOFF
S-15-20	1	1.00 X 6.00 STANDOFF
S-T82-20	1	.75 X 3.80 STANDOFF
A3-1-20	1	1" DIA JACK STAND
A3-80-20	2	.80 DIA JACK STAND
CT-258-0-20	3	2.5" Tongue Casing with 3.1" Post

- the bill of materials lists the part number, quantity and description of the plate and components used

stay in compliance with ISO and QS9000



Free Demo CD  
800-847-6045  
cmmfixture.com

# Extending In New Directions

XTENSIONS FOR LARGE AND VERTICAL FIXTURING

Have you ever wished that someone would introduce a simple and inexpensive solution for fixturing large and vertical parts? R&R has done just that. This new concept in modular fixturing for CMMs uses aluminum extrusions, called XTensions. They are used along with standard R&R components for building a setup vertically or creating a support structure to fixture the part.

## Making Large Parts Manageable

XTensions were designed for supporting very large or vertical parts, particularly if those parts are inspected on a regular basis. XTensions are a new concept in simple and inexpensive modular fixturing for CMMs. They are aluminum extrusions that are used along with standard R&R components for building a setup vertically or creating a support structure to fixture a part. Setup is simple with minimal tools needed to produce a rigid and accurate fixture with unrestricted probe path.

### VERTICAL BENEFITS:

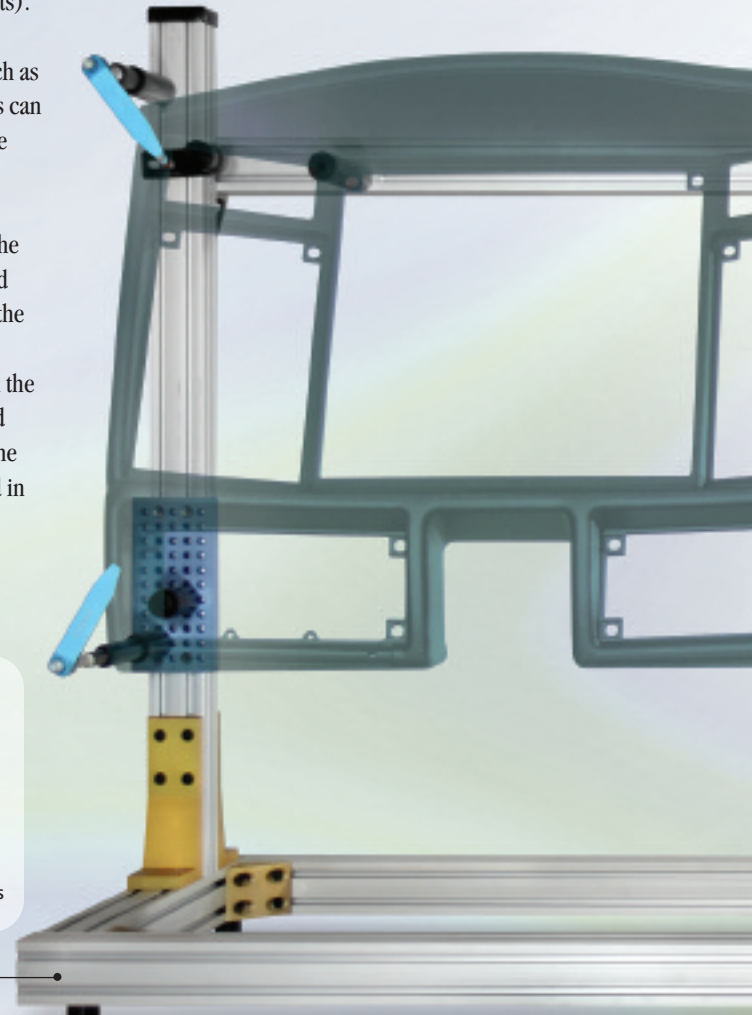
- ease of use
- unrestricted probe paths
- minimal tools used for part setup
- rigid and accurate
- low cost
- position part in its natural state or body line

XTensions are easily connected to standard R&R base plates for ease of documenting your fixture setup. An assortment of connectors and bracing components will accomplish this. XTensions can accommodate both English and metric R&R components (adapters are available for metric components).

Standard R&R components such as standoffs, clamps, and magnets can be utilized for building a fixture setup on the XTensions. The components can be mounted directly to the XTensions with the use of special T-nuts. Small grid plates can also be mounted to the XTensions when multiple components are needed within the same area on the part. The grid plates can slide up and down the XTensions and then be secured in place with the special T-nuts.

### FIXTURE STRUCTURE BENEFITS:

- lightweight
- low cost
- unlimited size
- reusable
- unrestricted probe paths
- increased rigidity using cross members



## Reaching New Heights

XTensions are available in lengths of up to 60" and beyond to accommodate parts vertically. Once the upright XTensions have been mounted to a base plate, bracing options are added depending upon the height of the setup as well as cross supports. XTensions can also be used perpendicular to the main XTension supports for additional attachment points.

## Standard Sizes and Lengths

	3"	6"	12"	18"	24"	30"	36"	42"	48"	60"
1" x 1"	■	■	■							
1" x 2"		■	■	■	■					
2" x 2"		■	■	■	■	■	■	■	■	■
3" x 3"					■		■		■	■

Custom lengths are also available.

## Fixture Structures

To make your largest parts more manageable, a fixture structure can be built from the aluminum XTensions. Upright XTensions are then added, along with fixturing components, to secure the part. Cross members can also be used to increase rigidity.

## Recurring Inspections

Once a fixture is assembled, you have a few options for future setups depending on the volume of the inspections:

### LEAST | A few times a year

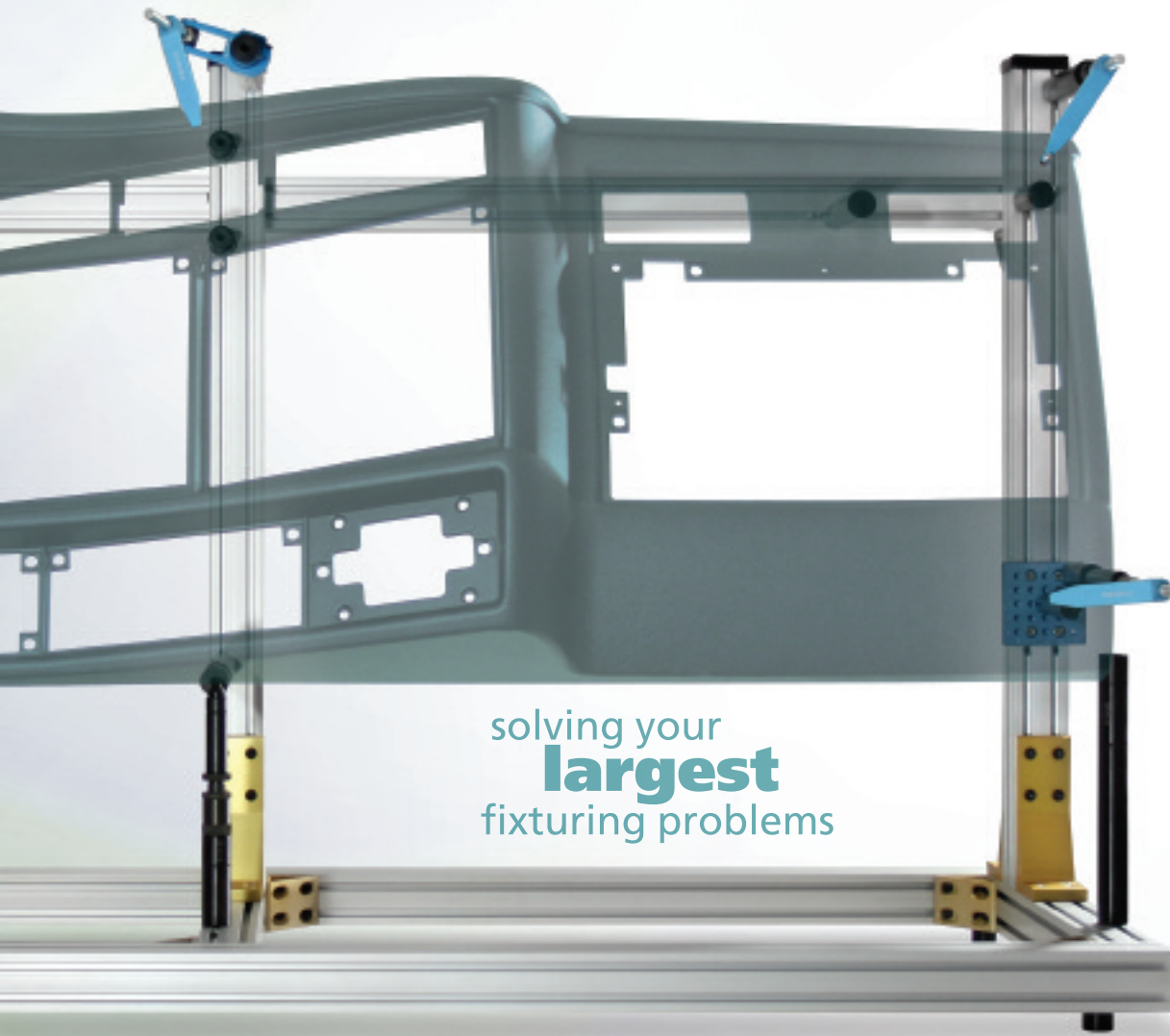
For future assembly, record the positions where the components attach to the XTensions with your CMM. Then document the locations of the XTensions to the base plate.

### MORE | Multiple times a month

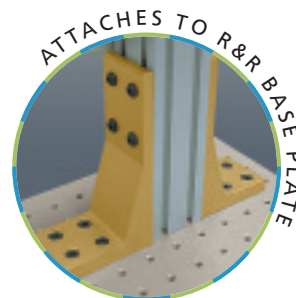
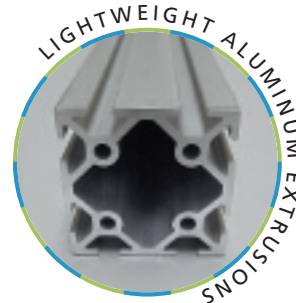
Leave the XTensions assembled and the T-nuts in place with a label documenting the position of the components for future fixture assembly.

### MOST | Weekly

Leave the XTensions and components assembled but remove from the base plate, documenting its position.

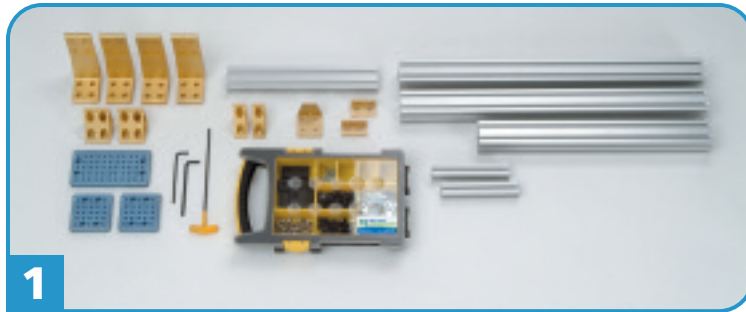


solving your  
**largest**  
fixturing problems

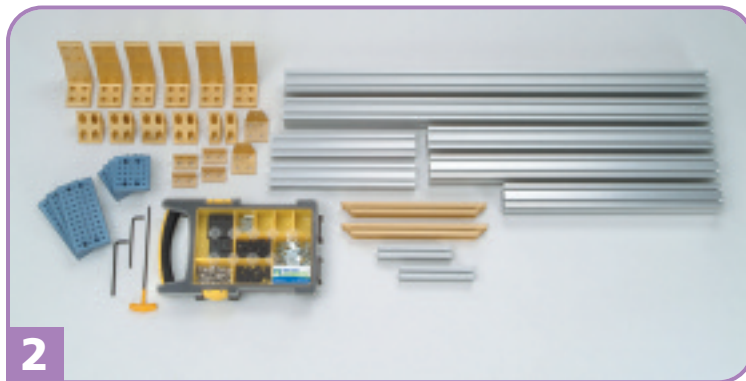


## XTension kits

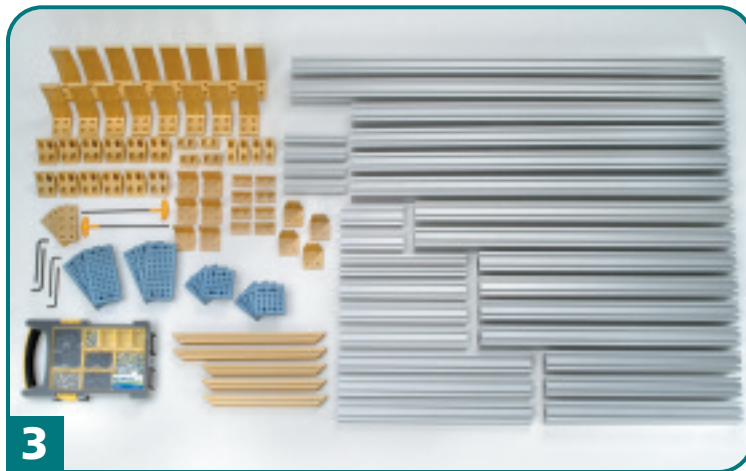
A comprehensive kit for fixturing large and vertical parts.



**1**



**2**



**3**

1/4-20 kits shown here

PART #	DESCRIPTION	1/4-20 KITS			M8 KITS		
		1	2	3	1	2	3
XT1-6	XTension 1"x 1"x 6"	2	2	4	2	2	4
XT1-12	XTension 1"x 1"x 12"	-	-	2	-	-	2
XT1-2-6	XTension 1"x 2"x 6"	-	-	2	-	-	2
XT1-2-12	XTension 1"x 2"x 12"	1	2	4	1	2	4
XT2-18	XTension 2"x 2"x 18"	1	1	3	1	1	3
XT2-24	XTension 2"x 2"x 24"	2	2	4	2	2	4
XT2-30	XTension 2"x 2"x 30"	-	-	2	-	-	2
XT2-36	XTension 2"x 2"x 36"	-	2	4	-	2	4
XT2-42	XTension 2"x 2"x 42"	-	-	2	-	-	2
XT-2AF	XT2 angle foot to base	4	6	16	-	-	-
XT-2AF-M8	XT2 angle foot to base	-	-	-	4	6	16
XT-2A-4	XT2 angle 4 holes	2	2	8	2	2	8
XT-2A-8	XT2 angle 8 holes	-	-	6	-	-	6
XT-1AG-4	XT1 angle gusset 4 holes	2	2	4	2	2	4
XT-2AG-8	XT2 angle gusset 8 holes	2	4	12	2	4	12
XT-2AT1-6	XT2 angle transition to XT1	1	2	6	1	2	6
XT-JP-8	XT2 joining plate 8 holes	-	-	4	-	-	4
XT-AB-12	12" angle brace	-	2	4	-	2	4
XT-AB-15	15" angle brace	-	-	2	-	-	2
XT-P-33-20	3" x 3" x .50" grid plate w/ 1/4-20 holes 1/2" o.c.	2	4	8	-	-	-
XT-P-36-20	3" x 6" x .50" grid plate w/ 1/4-20 holes 1/2" o.c.	1	3	6	-	-	-
XT-P-9090-8	90 x 90 x 13mm grid plate w/ M8 holes 15mm o.c.	-	-	-	2	4	8
XT-P-90165-8	90 x 165 x 13mm grid plate w/ M8 holes 15mm o.c.	-	-	-	1	3	6
XT-EC-1	XT1 end cap	2	2	4	2	2	4
XT-EC-1-2	XT1-2 end cap	1	2	6	1	2	6
XT-EC-2	XT2 end cap	4	6	16	4	6	16
XT-ET-Nut	economy T-nuts	86	100	320	86	100	320
XT-PT-Nut	positional pivot T-nuts	8	12	32	8	12	32
SA-8-20	1" dia. x 1" standoff adapter with 8mm threads	-	-	-	8	12	24
XT-Box	organizer box	1	1	1	1	1	1

### Kits to choose from...



- All hardware is included in each kit.
- Kits can be modified to fit your application.

the right components + the right price = the right fixture

# Everything to Hold Anything

## MODULAR FIXTURING COMPONENTS

R&R has a wide selection of fixturing components available to make fixturing quicker and easier than ever. No matter what size, shape or type of material you have, our CMM and vision components can help you quickly fixture anything – increasing the productivity of your inspection equipment. The more components you have, the more modular our fixturing becomes. No more searching everywhere for the right way to hold your parts – big or small, our components can hold it all. R&R is your single source for all your fixturing component needs.

### THREAD SIZES

Components offered in English and metric:

- 1/4-20
- M8 (ideal for larger, robust parts)
- M4 (ideal for small, intricate parts)



Download the R&R component catalog at [www.cmmfixture.com](http://www.cmmfixture.com)



The right fixture  
at the right price.

[www.cmmfixture.com](http://www.cmmfixture.com)

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