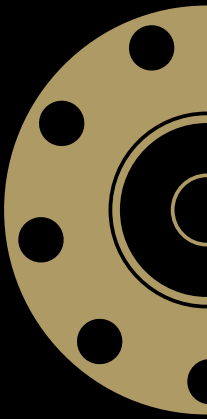


THE UNIVERSITY OF CHICAGO PRESS

INNOVATIVE CLAMPING SYSTEM



FASTMILL.IT



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FAST MILL® OFFERS A COMPLETE RANGE OF PRODUCTS TO MEET CLAMPING EXPECTATIONS AND PRECISE POSITIONING.



FAST MILL® an innovative system for precise positioning and rapid fixing developed through the continued excellence of the engineers of REM Industrie srl.

All solutions have been adopted by taking into consideration problems and experiences acquired from all the application fields in where REM Industrie srl has been operating successfully over the years.

The result? **FAST MILL®** .

SIMPLE AND RELIABLE SYSTEM THAT SATISFY ALL BUSINESS NEEDS AIMED TO SIGNIFICANTLY REDUCE MACHINE SETUP TIME AND POSITIONING ERRORS.

MODULES

PINS AND BUSHES

RISERS

SPACERS

THIRD POINT

VERTICAL CLAMPING

MINI RANGE

TILTING

FMZ

PLATES

CUBES

CLAMPS

ACCESSORIES



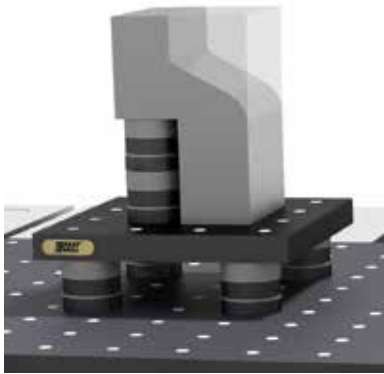
ADVANTAGES

Increased productivity, decreased production costs and flexibility in operations are concrete purposes, directly measurable by adopting a system which is able to exceed industry expectations in a short time. Thanks to its easy-to-use products, FAST MILL® ensures a rapid return on investments by standardizing machining processes of complex elements too.

PLANNING - CAD/CAM



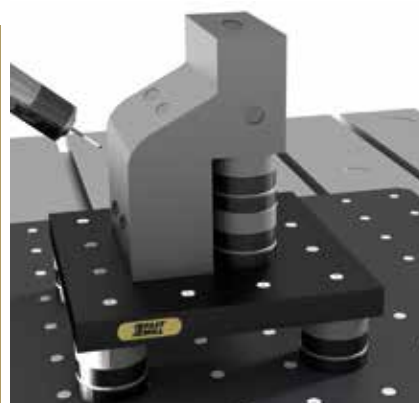
ROUGHING
DEEP HOLES DRILLING



FINISHING



EDM - CMM



- **CLAMPING TIME REDUCTION**

During CAD or CAM programming, it is possible to choose where to mount FAST MILL® elements on the workpieces, and eventually on the machine table; this allows to arrange everything without interrupting machining processes.

- **HIGH CLAMPING FORCE**

FAST MILL® modules are designed to tolerate extremely high axial and radial loads. Permissible loads depending on the type of application are mentioned in the user manual.

- **MAXIMUM ACCURACY IN REPOSITIONING**

FAST MILL® is developed and manufactured in stringent temperature and humidity controlled environments to guarantee system accuracy both in dimensions and positioning repeatability.

- **PRECISE POSITIONING REPEATABILITY**

Tolerances of all FAST MILL® parts have been defined to ensure a positioning accuracy that avoids any waste of time in moving the workpiece after clamping.

- **SYSTEM FOR WORKPIECE REPOSITIONING WITHOUT TENSIONING -PATENT PENDING**

FAST MILL® offers a patented solution to work pieces after they have been thermally processed, and ensures the repositioning and clamping without applying stress on even finer, smaller work pieces.

MODULES

PINS AND BUSHES

RISEERS

SPACERS

THIRD POINT

VERTICAL CLAMPING

MINI RANGE

TILTING

FMZ

PLATES

CUBES

CLAMPS

ACCESSORIES

MODULES
 PINS AND BUSHES
 RISERS
 SPACERS
 THIRD POINT
 VERTICAL CLAMPING
 MINI RANGE
 TILTING
 FMZ
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FAST MILL® worldwide



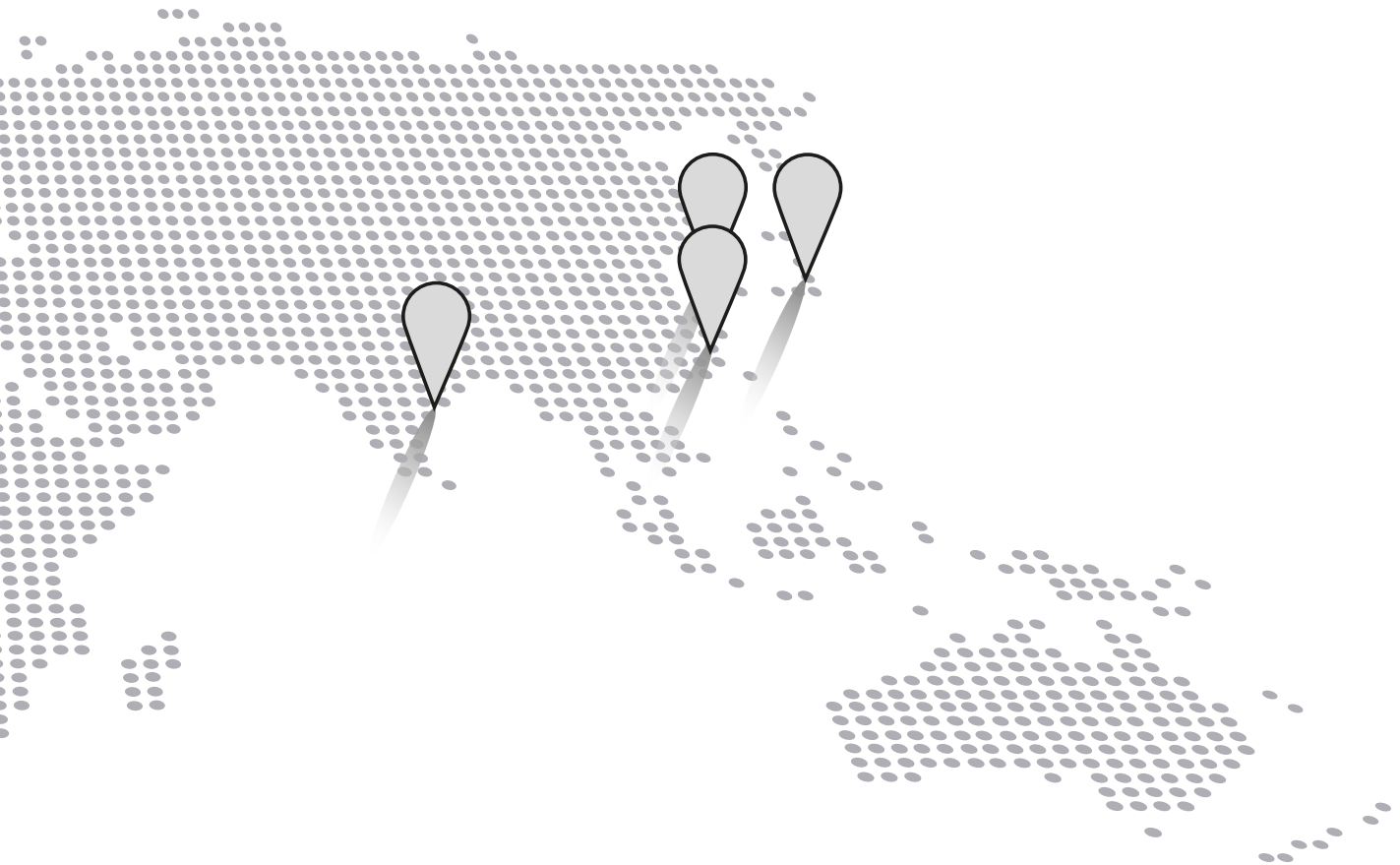
LIBRARY FOR CAD, CAM AND SIMULATORS WITH ALL CLAMPING SOLUTIONS

FAST MILL® freely provides a library with all products range to make production planning and programming easier. Operators are able to decide and verify the best positioning conditions of workpieces, thanks to their precise knowledge of centering positions on tables positioned on each machine inside the mechanical workshop. In this way it is possible to check for criticalities by executing all necessary analyses and anti-collision tests from CAD-CAM or SIMULATOR before sending programmes to machines, so as to perform machining processes with the utmost safety.

QUALIFIED TECHNICIANS AT YOUR DISPOSAL

A team of qualified technicians with decades of expertise is at your disposal to support you during analysis and installation activities and to suggest how to better use FAST MILL® articles. In addition, our draftsmen are able to come up with customized solutions based on your requirements in a short term.





- MODULES
- PINS AND BUSHES
- RISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
- FMZ
- PLATES
- CUBES
- CLAMPS
- ACCESSORIES



STOCK AVAILABLE

FAST MILL® standard articles are always available in stock. Special articles are drawn upon request and made internally in a short term.

PRACTICAL DEMONSTRATIONS AT YOUR COMPANY

FAST MILL® can perform tests and demonstrations of operation under the most extreme and complex working conditions in order to testify the potential of its products as well as FAST MILL® philosophy. These tests may be carried out at both customers' companies and our headquarters with a series of products specifically meant for the purpose.



MODULES

PINS AND BUSHES

RISERS

SPACERS

THIRD POINT

VERTICAL CLAMPING

MINI RANGE

TILTING

FMZ

PLATES

CUBES

CLAMPS

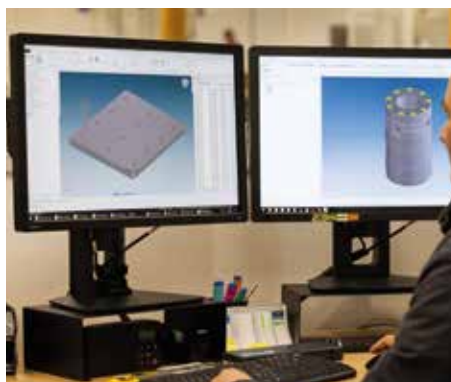
ACCESSORIES

CONCEIVE, DESIGN, PRODUCTION,

TEMPERATURE AND HUMIDITY CONTROLLED INSIDE THE ENTIRE PRODUCTION BUILDING.

INTERNAL PROGRAMMING UP TO 6 AXIS FOR MILLING, TURNING AND GRINDING OPERATIONS.

TURNING DEPARTMENT WITH AUTOMATIC PARTS CHANGER ON MULTITASKING MACHINES.



TOOL SUPPLY AND HIGH PRECISION PRESETTING SYSTEMS CONNECTED THROUGH MARES 4.0+ PLATFORM.

CUSTOM HIGH PRECISION GRINDING MACHINES FOR MAXIMUM QUALITY PARTS.

AUTOMATIC 5 AXIS LASER SYSTEM.

TEST, WAREHOUSE, CONSULTING

**QUALIFIED TECHNICIANS FOR
FAST MILL® PRODUCTS
ASSEMBLING.**



**MILLING DEPARTMENT
WITH CUSTOM HIGH
PRECISION MACHINES.**



**IN STOCK AVAILABILITY
OF PLATES**



**HIGH PRECISION CMM TO
CERTIFY THE MANUFACTURED
COMPONENTS.**

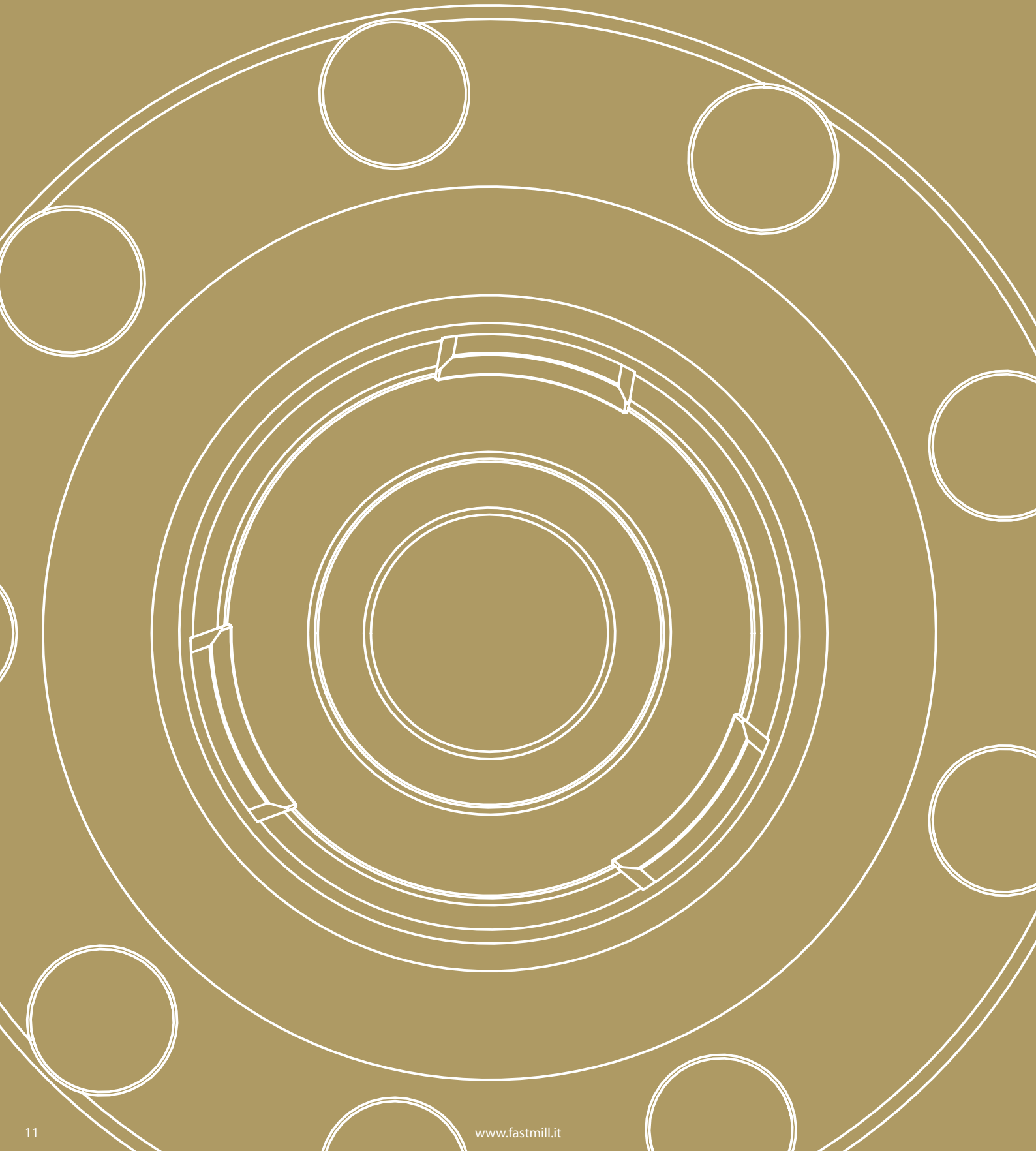


**MILLING DEPARTMENT WITH
CUSTOM HIGH PRECISION
MACHINES.**



**FAST MILL® STANDARD
ELEMENTS ARE ALWAYS
AVAILABLE IN STOCK. SPECIAL
ELEMENTS ARE DRAWN UPON
REQUEST AND MANUFACTURED
INTERNALLY IN A SHORT TERM.**

MODULES
PINS AND BUSHES
RISERS
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THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES





MODULES

Single module Ø49 assembly example



MALE PIN WITH STANDARD (DIN 913) SCREW

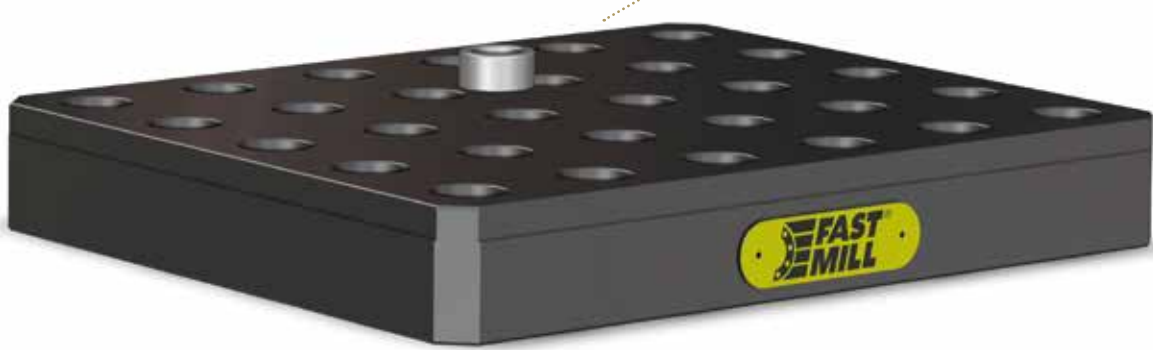


STANDARD 12.9 (DIN912) SCREW



SINGLE MODULE Ø49 (1,96")

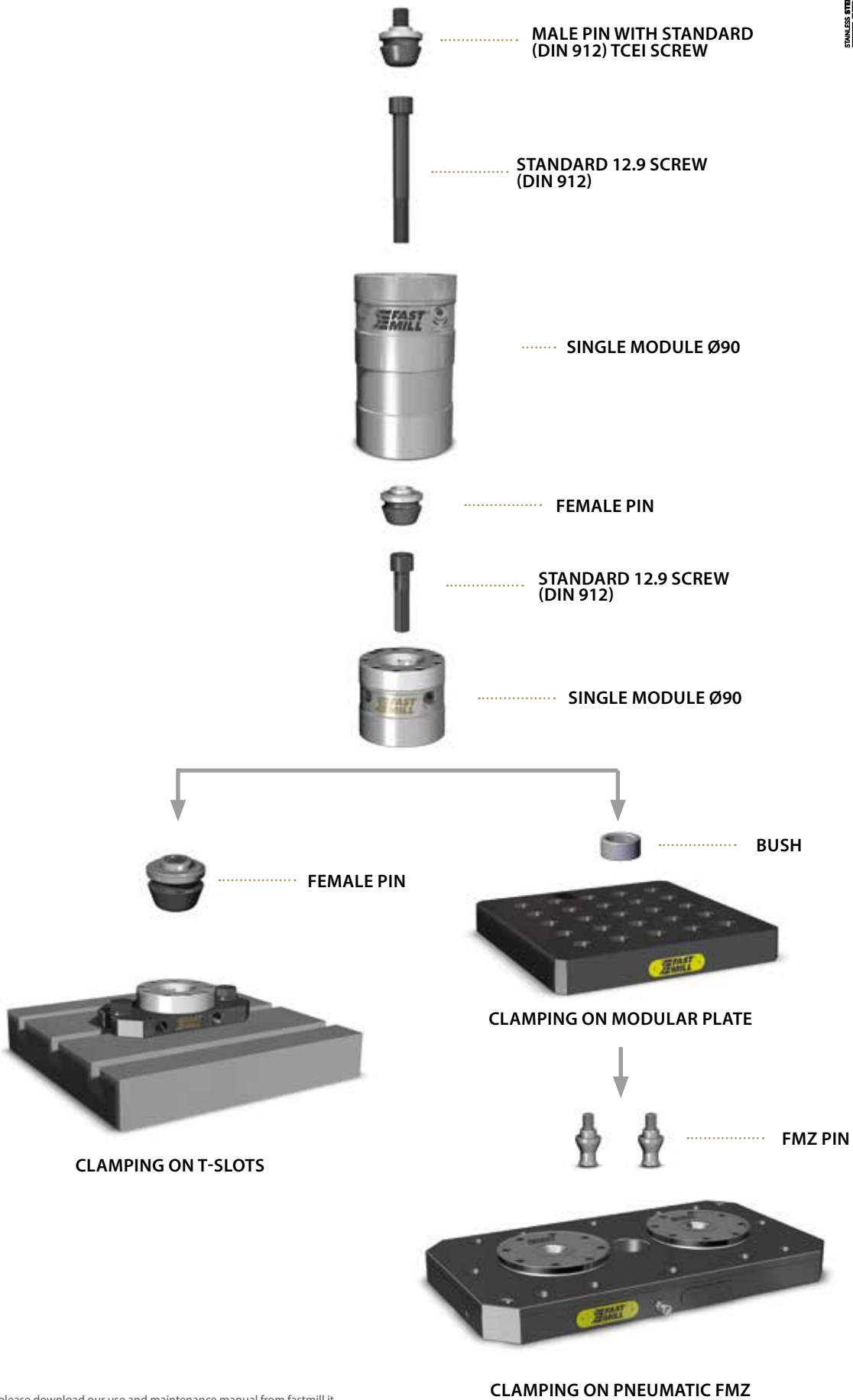
BUSH



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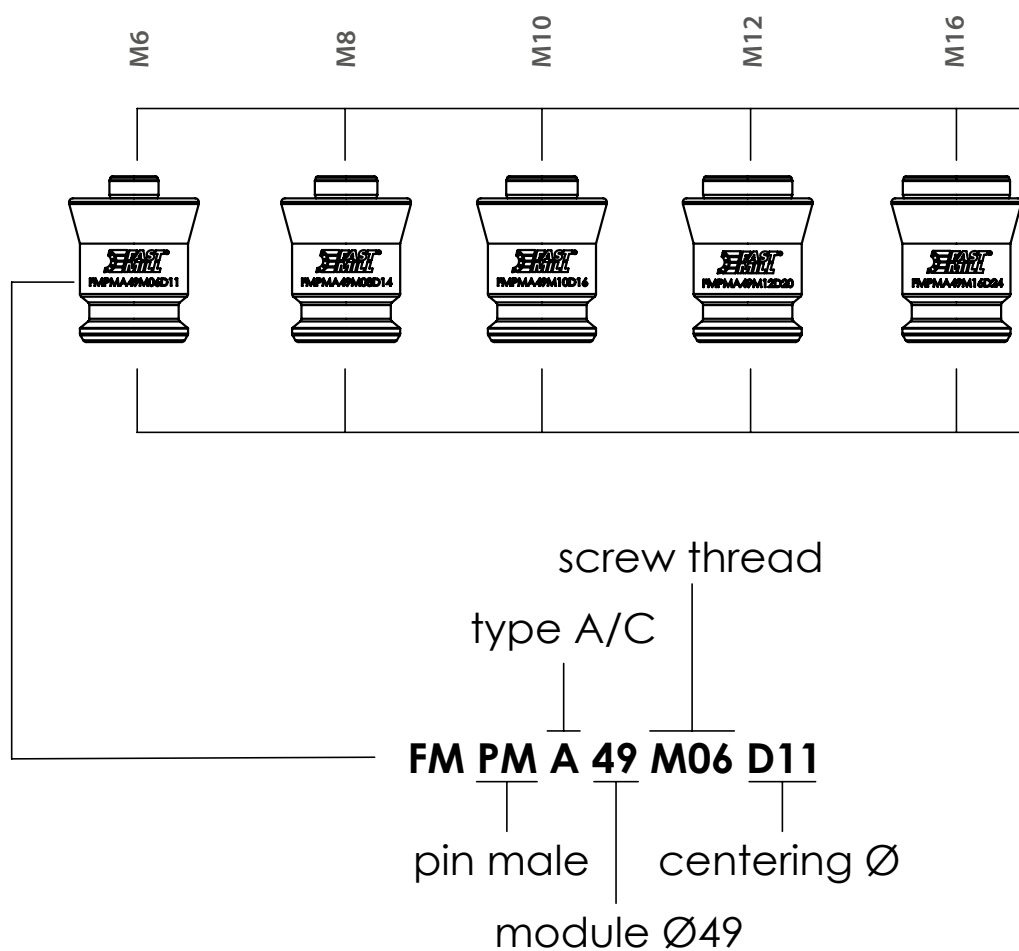


Single module Ø90 assembly example



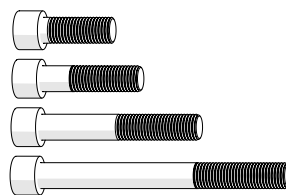
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Single module Ø49 assembly example

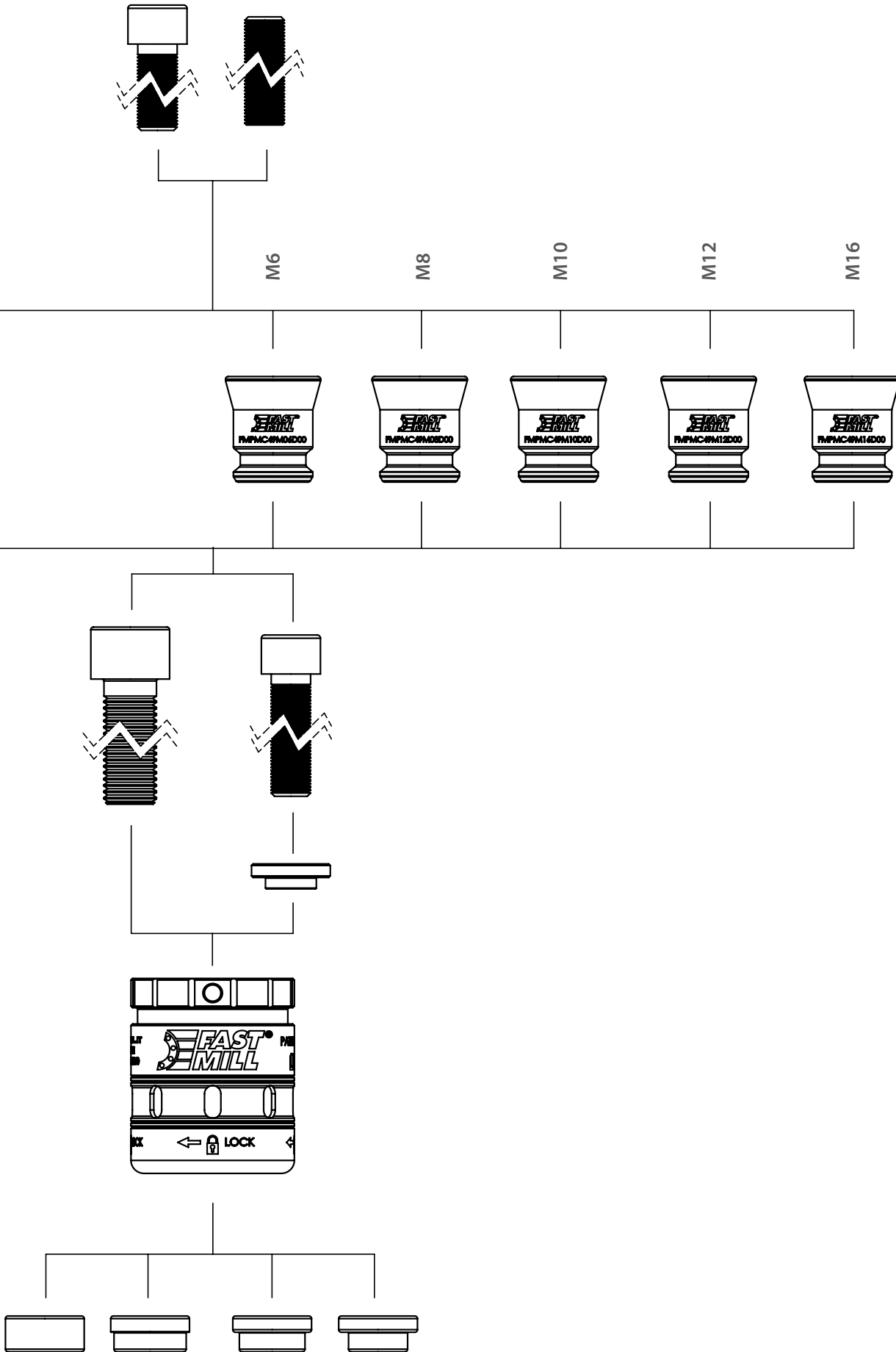


TECHNICAL TIPS

In the whole range of FAST MILL® modules you can use standard 12.9 (DIN912) screws from M6 to M16 or higher of different heights for the connection of the pieces, to the plates and to the risers / spacers.



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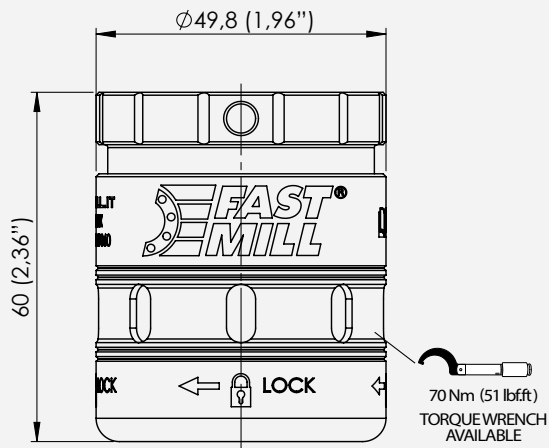
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MODULES
 PINS AND BUSHES
 RISERS
 SPACERS
 THIRD POINT
 VERTICAL CLAMPING
 MINI RANGE
 TILTING
 FMZ
 PLATES
 CUBES
 CLAMPS
 ACCESSORIES

Single module Ø49

STAINLESS STEEL
Ø49 LINEA

STAINLESS STEEL
INOX LINEA



HARDENED STAINLESS STEEL

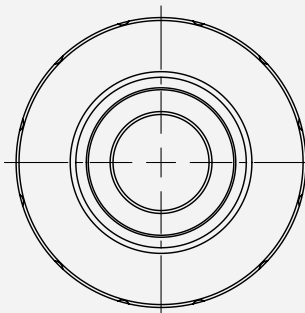
CODE	Ø	HEIGHT
FMMSS0049060	49,8 (1,96'')	60 (2,36'')



Related pins and bushes 42

Technical information at page 130

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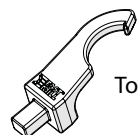
Torque Wrench kit

STAINLESS STEEL
Ø49 LINEA



Closing force for Ø49 module: 70Nm (51 lbf.ft)

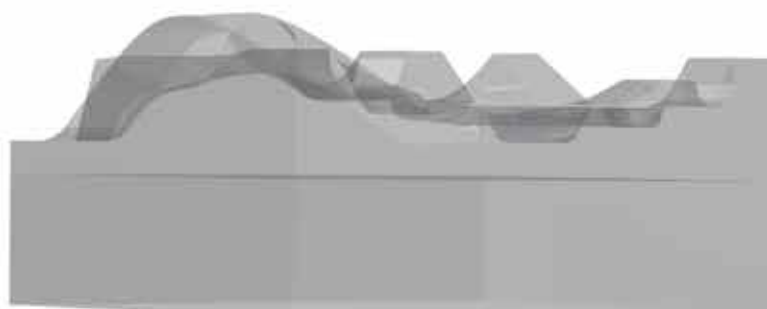
CODE	TORQUE
FMMSS0049TWK	40÷200 Nm 30÷150 lbf.ft



Torque wrench insert available code **FMMSS0049TWI**

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Single modules Ø49 combination example



MALE PIN

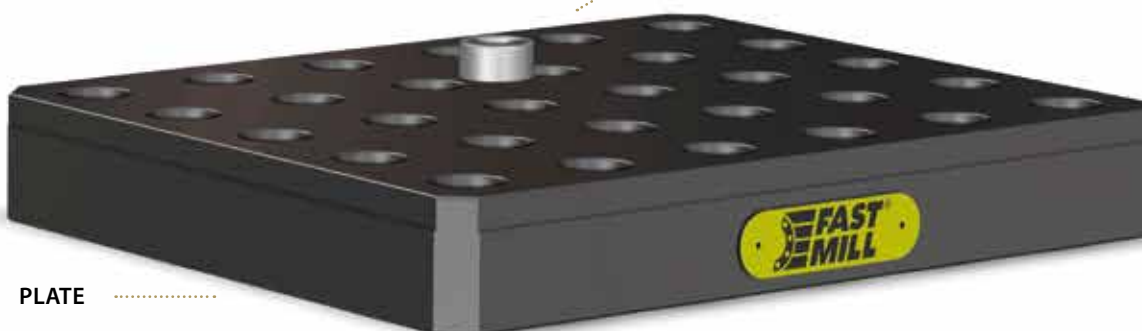


STANDARD 12.9 (DIN912) SCREW



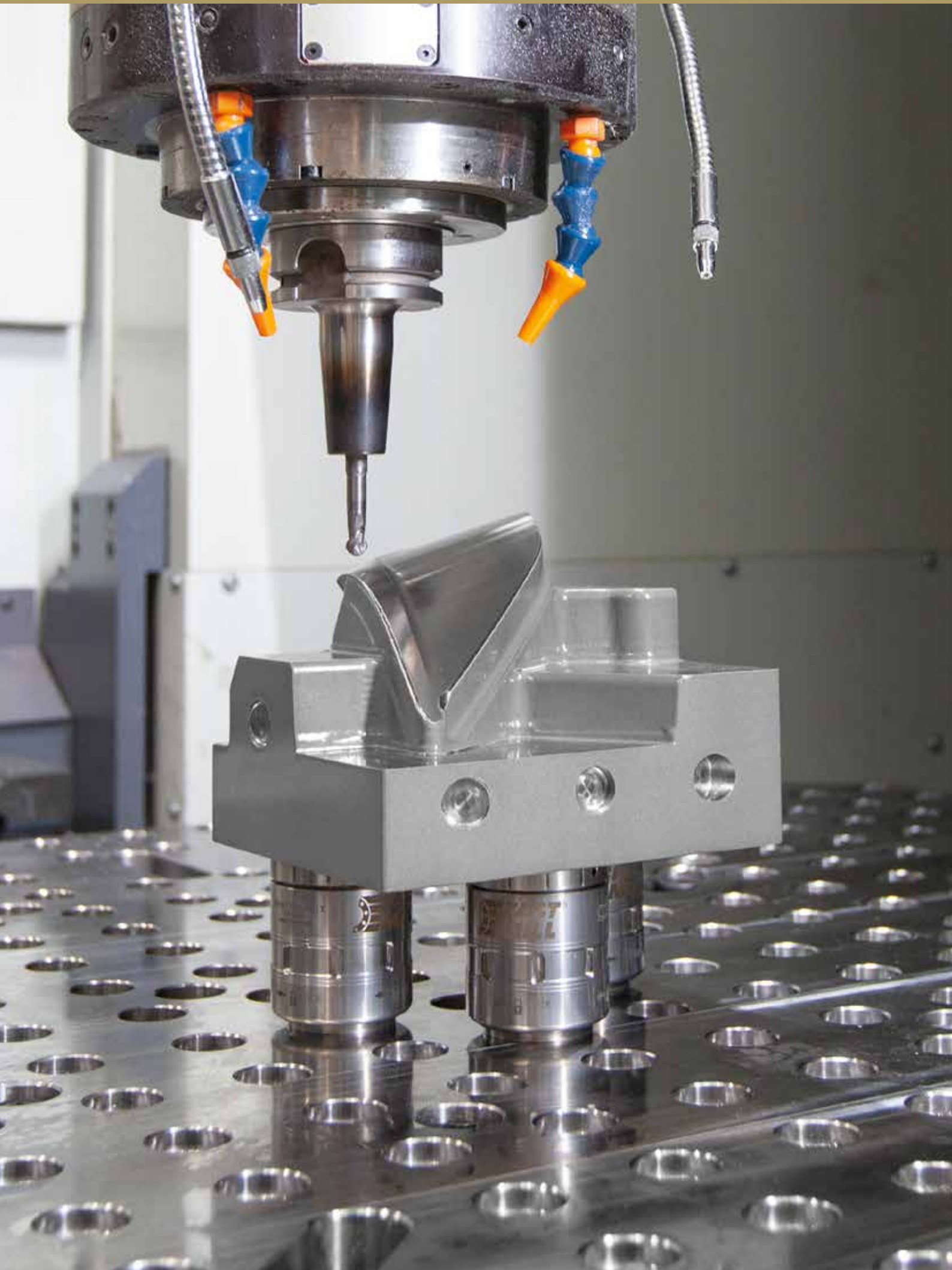
SINGLE MODULE Ø49 (1,96")

BUSH

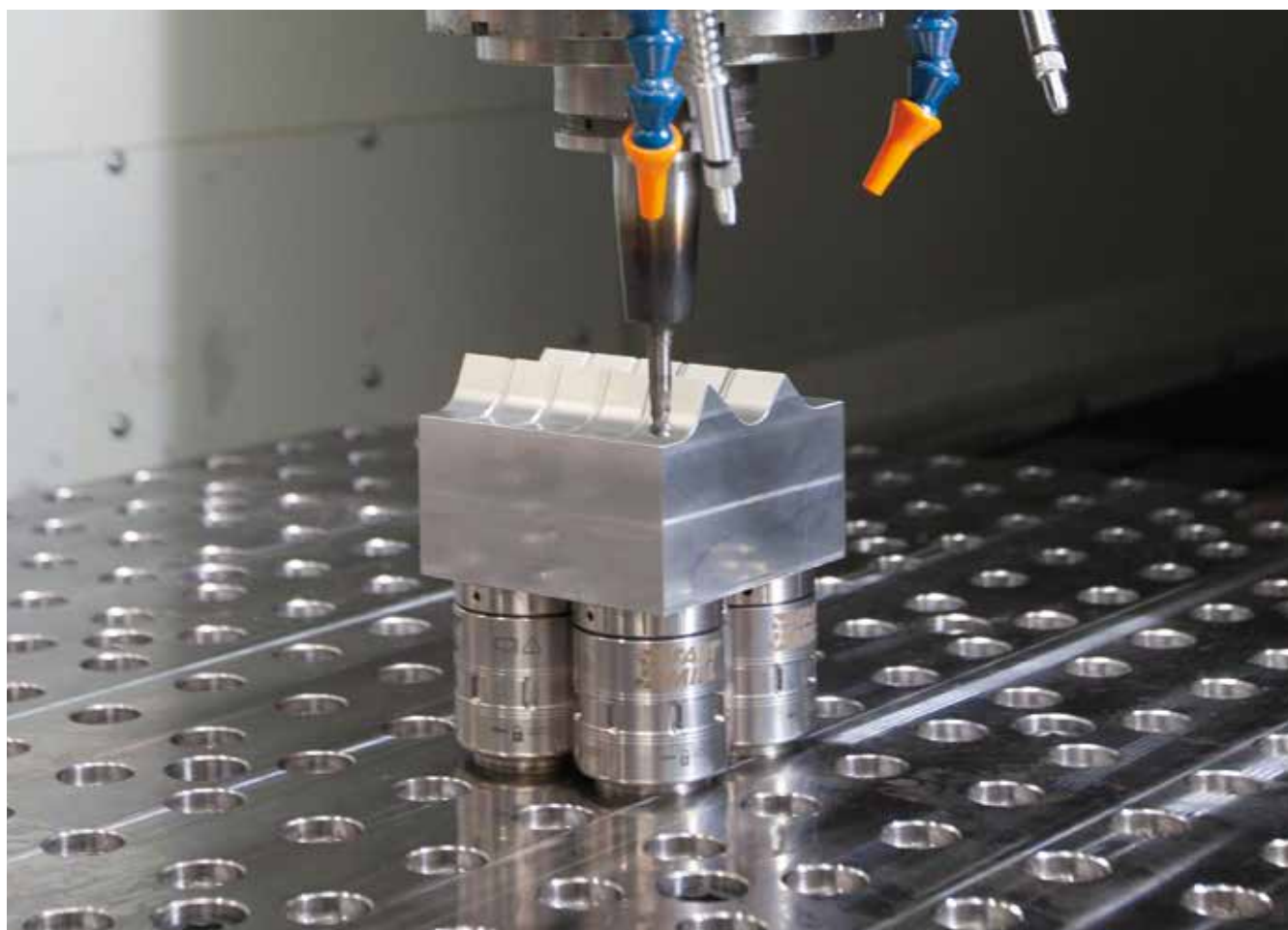
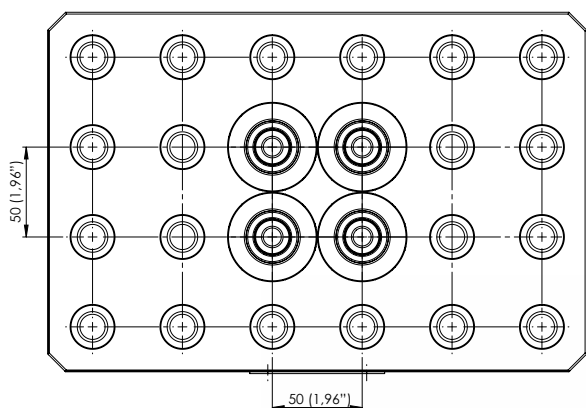


PLATE

- MODULES
- PINS AND BUSHES
- RISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
- FMZ
- PLATES
- CUBES
- CLAMPS
- ACCESSORIES



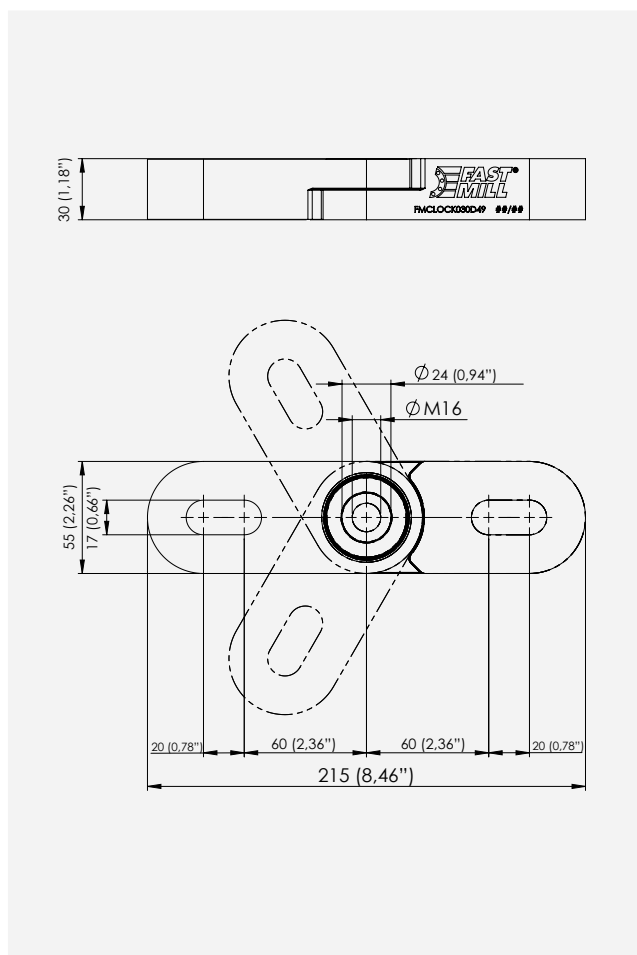
Single modules Ø49 setup example



- MODULES
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MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES

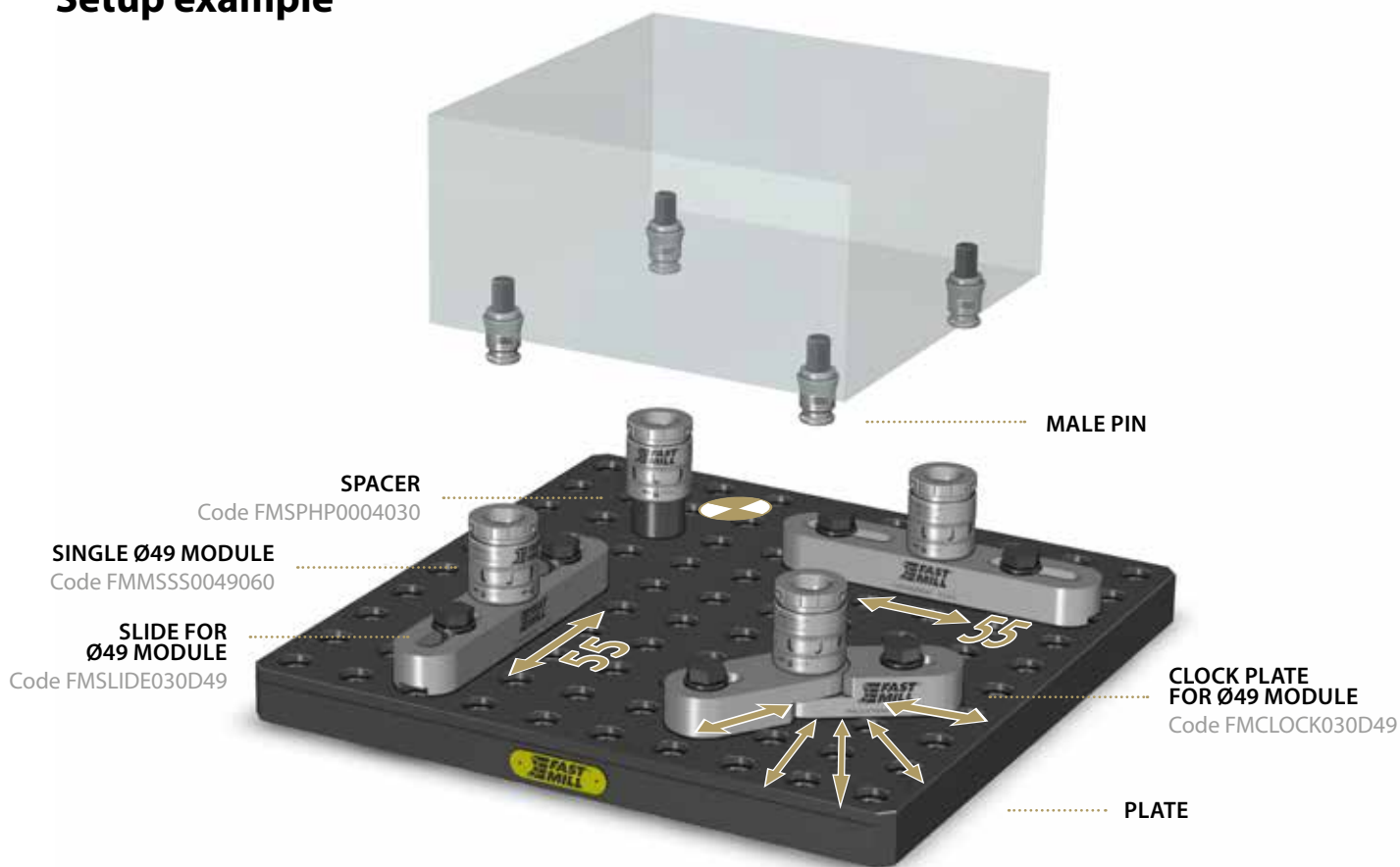
Clock plate for Ø49 module (For clamp on any position)



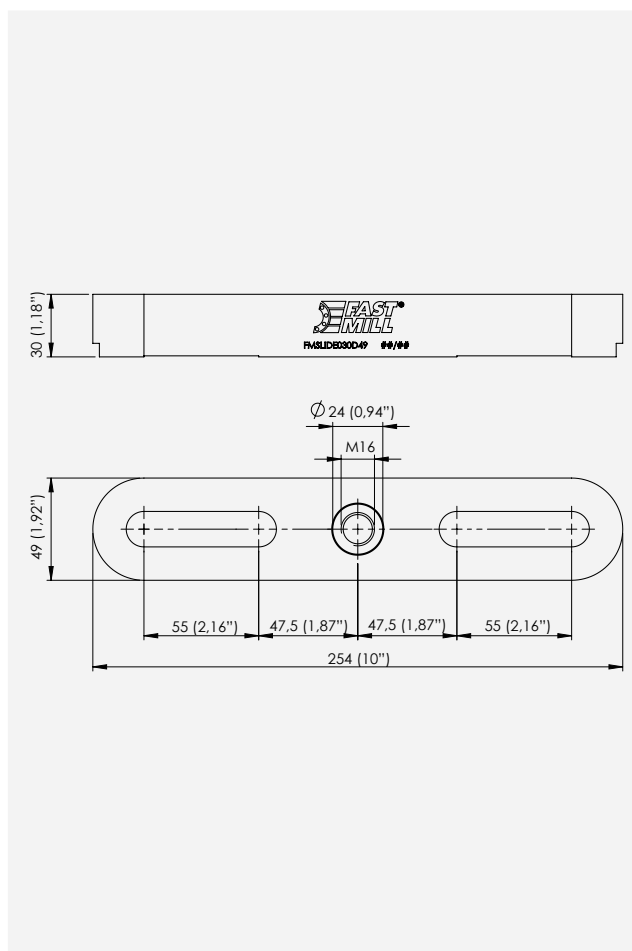
CODE	DIMENSION	HEIGHT	WEIGHT
FMCLOCK030D49	215x55 (8,46"x2,16")	30 (1,18")	2,2 (4,85 lbs)

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Setup example



Slide plate for Ø49 module



CODE	DIMENSION	HEIGHT	WEIGHT
FMSLIDE030D49	254x49 (10"x1,92")	30 (1,18")	2,0 (4,40 lbs)

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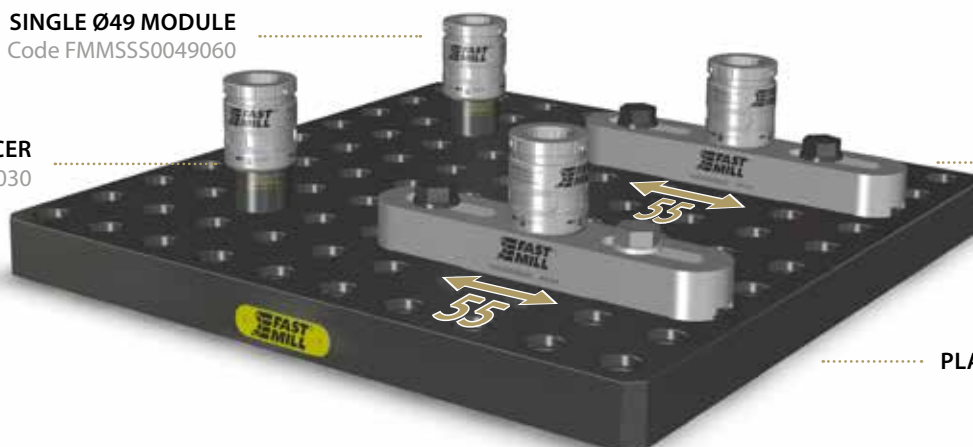
Setup example



MALE PIN

SINGLE Ø49 MODULE
Code FMMSSS0049060

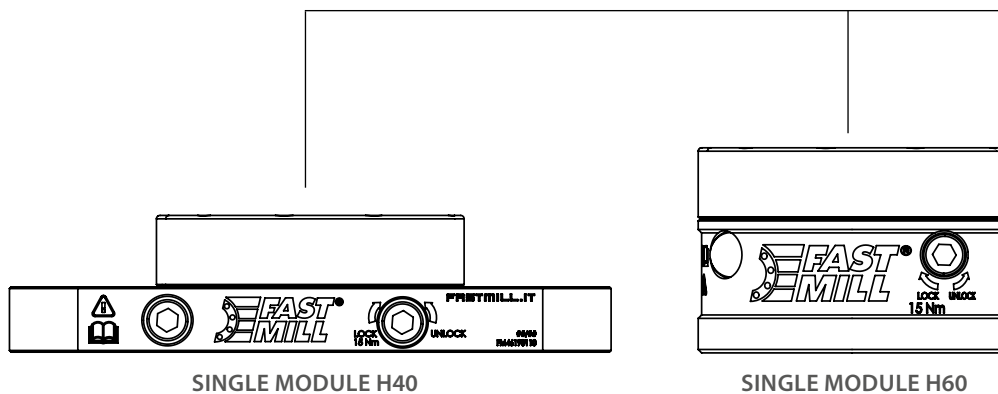
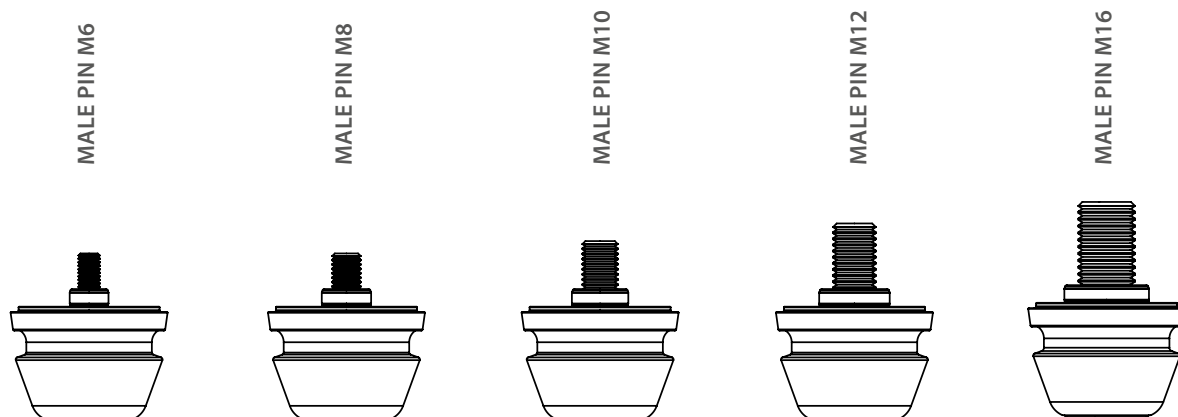
SPACER
Code FMSPHP0004030



SLIDE FOR Ø49 MODULE
Code FMSLIDE030D49

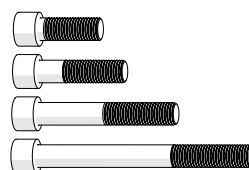
PLATE

Single module Ø90 assembly example

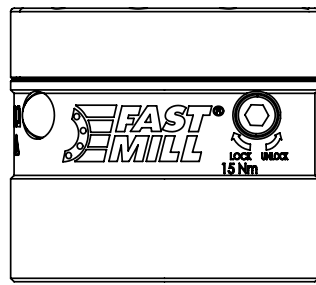
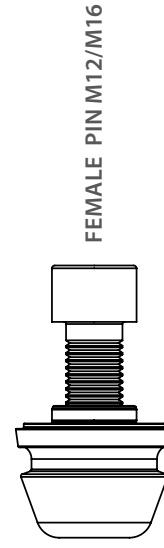
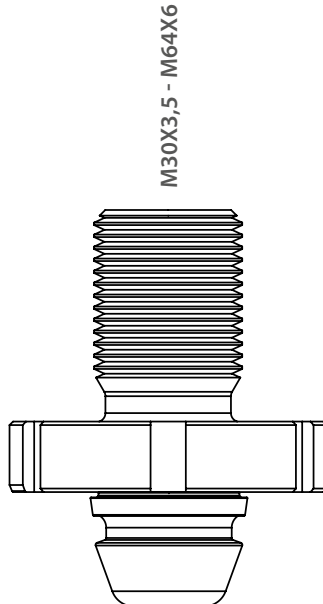
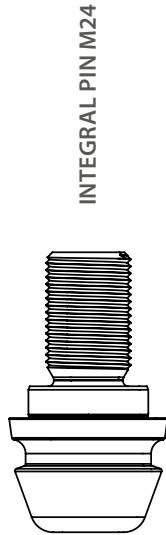
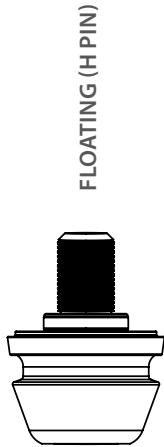


TECHNICAL TIPS

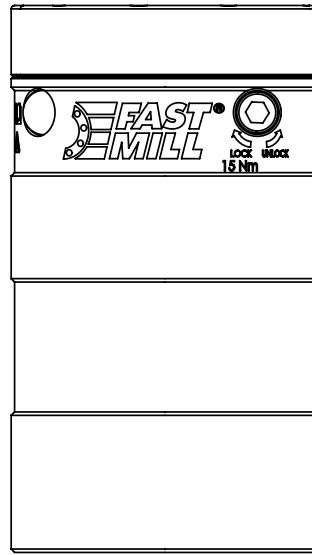
In the whole range of FAST MILL® modules you can use standard 12.9 (DIN912) screws from M6 to M16 or higher of different heights for the connection of the pieces, to the plates and to the risers / spacers.



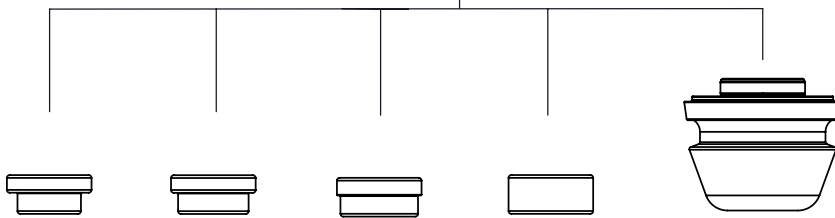
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SINGLE MODULE H80



SINGLE MODULE H160

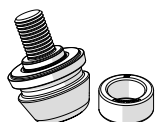


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Single module H40 - Opt. T-slots

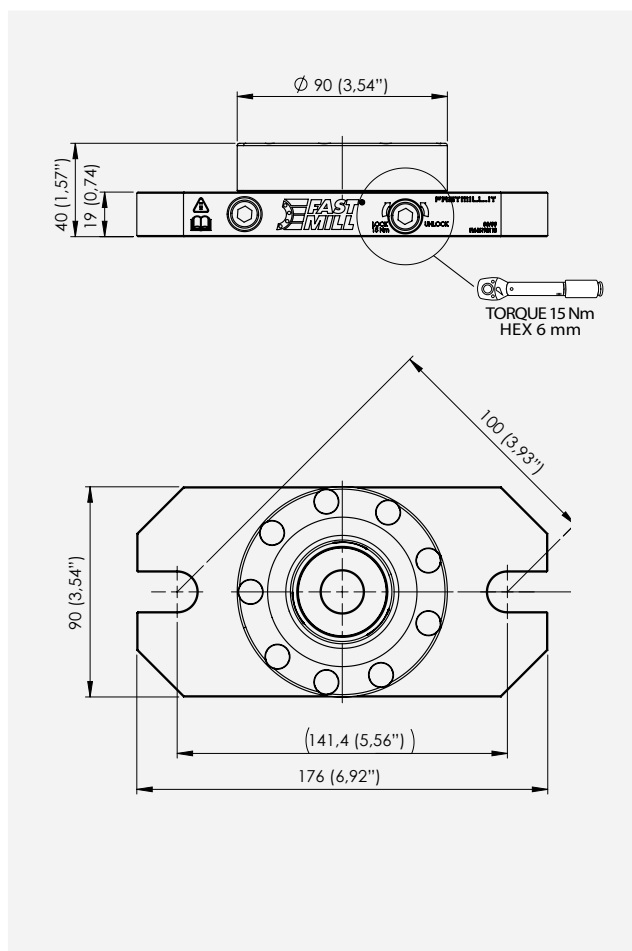


CODE	Ø	DIMENSION	WEIGHT
FMX46190110	90 (3,54")	40x176 (1,57"x6,92")	2,7 (5,95 lbs)



Related pins and bushes 42.

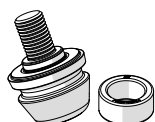
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Single module H60

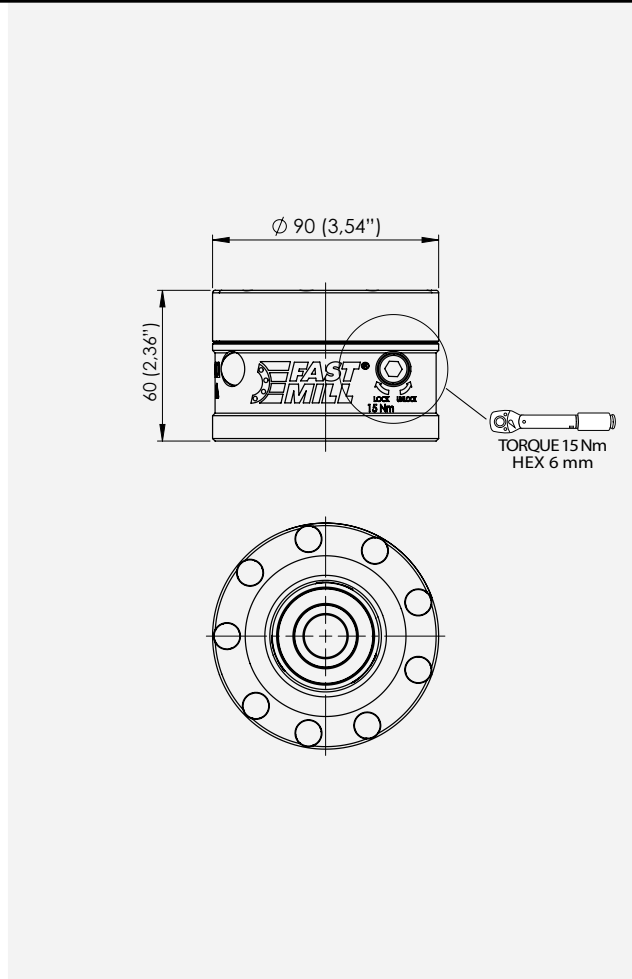


CODE	Ø	HEIGHT	WEIGHT
FMX46190120	90 (3,54")	60 (2,36")	2,3 (5,07 lbs)

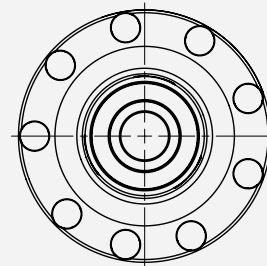
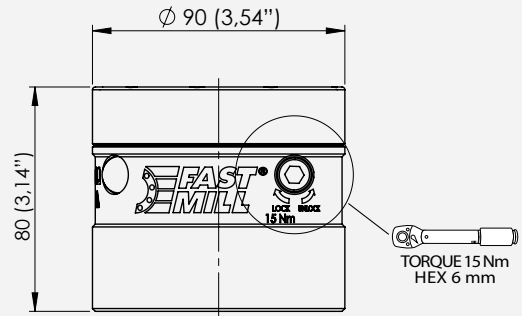


Related pins and bushes at page 42.

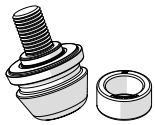
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Single module H80



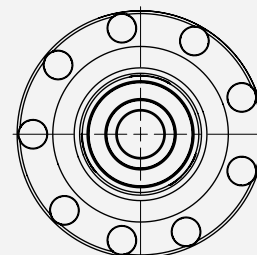
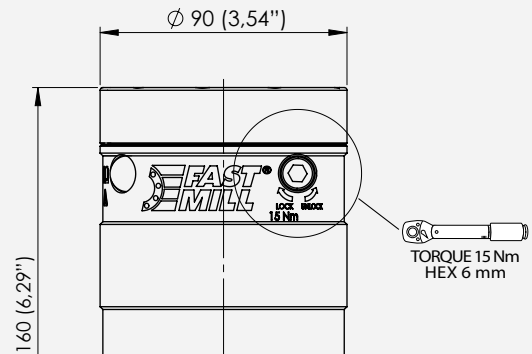
CODE	Ø	HEIGHT	WEIGHT
FMX46190130	90 (3,54")	80 (3,14")	3,3 (7,27 lbs)



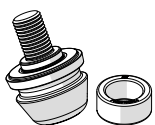
Related pins and bushes at page 42.

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Single module H160



CODE	Ø	HEIGHT	WEIGHT
FMX46190140	90 (3,54")	160 (6,29")	7,1 (15,65 lbs)

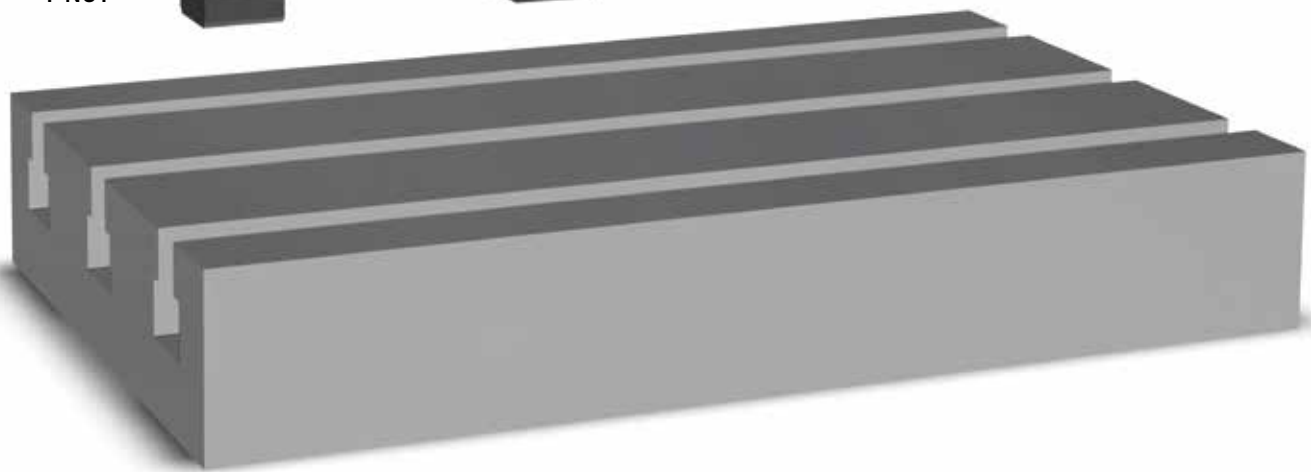


Related pins and bushes at page 42.

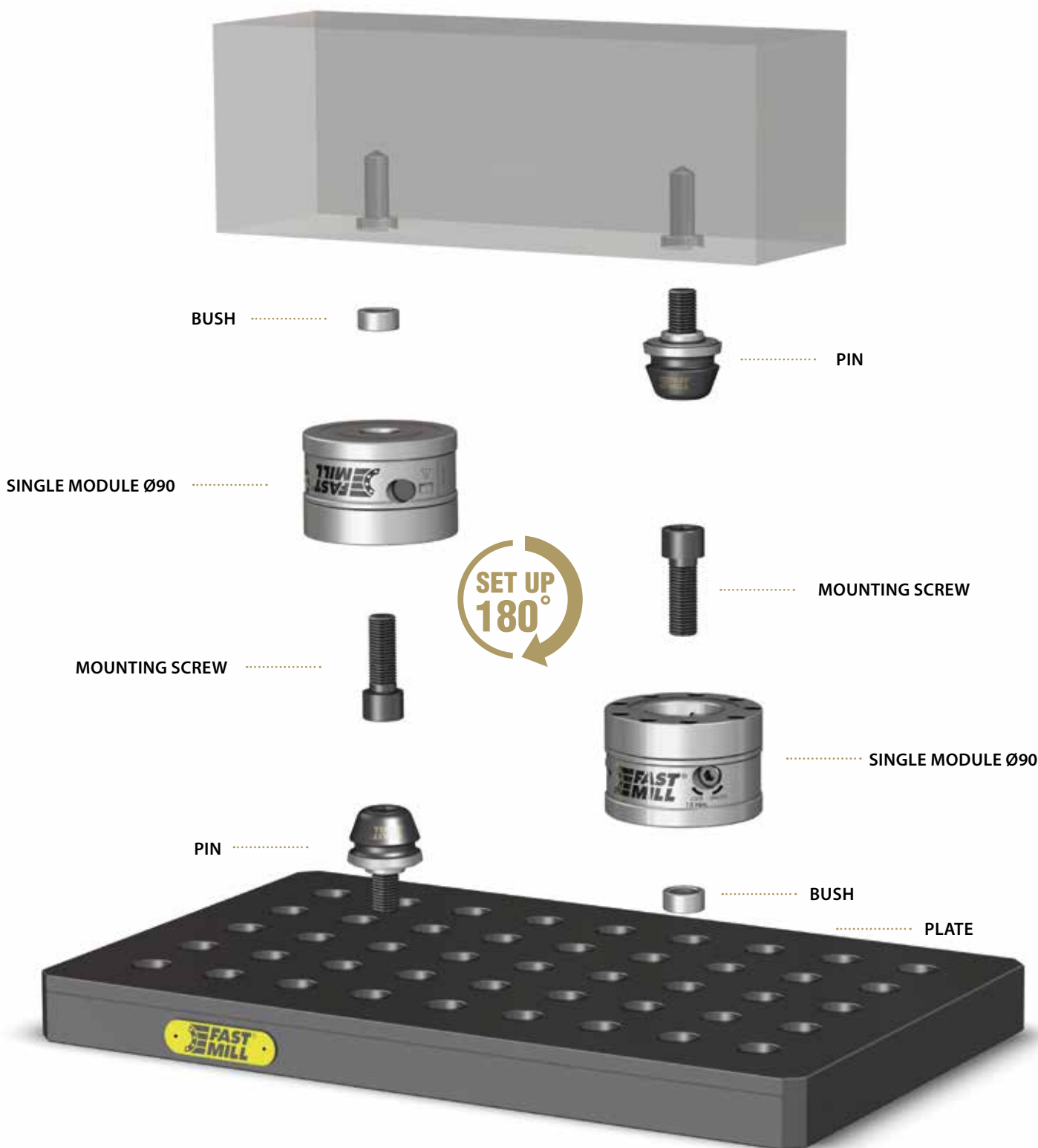
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MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES

Single modules H40 combination example



Single modules combination example



- MODULES
- PINS AND BUSHES
- RISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
- FMZ
- PLATES
- CUBES
- CLAMPS
- ACCESSORIES



Single module combination example



MALE PIN



MOUNTING SCREW



SINGLE MODULE Ø90



MALE PIN



FEMALE PIN



MOUNTING SCREW



MOUNTING SCREW



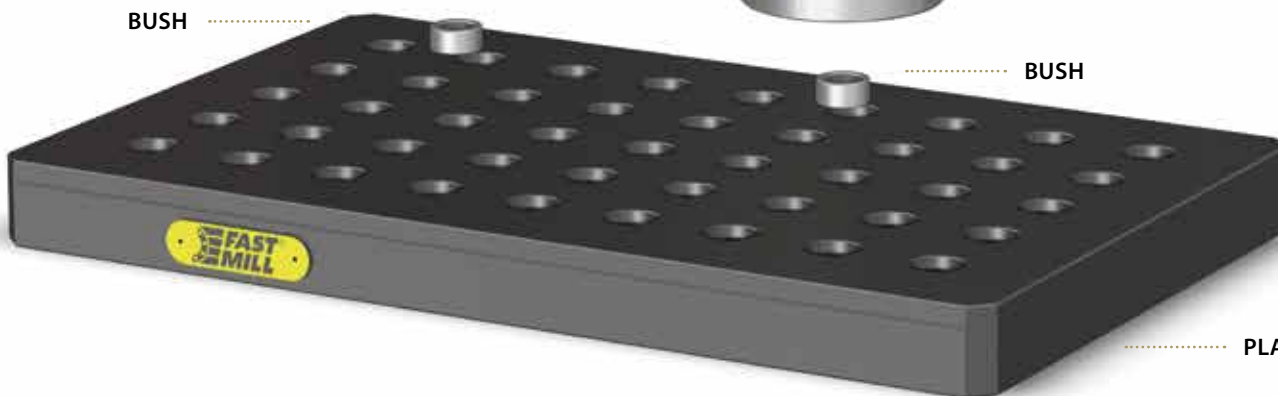
SINGLE MODULE Ø90



SINGLE MODULE Ø90

BUSH

BUSH



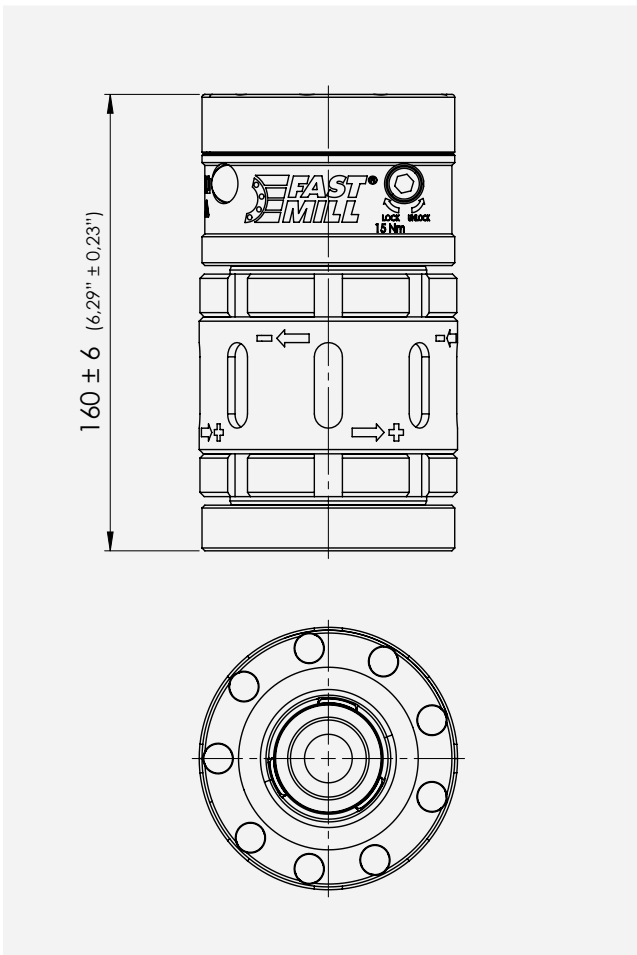
PLATE

Before using please download our use and maintenance manual from fastmill.it

- MODULES
- PINS AND BUSHES
- RISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
- FMZ
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MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
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MINI RANGE
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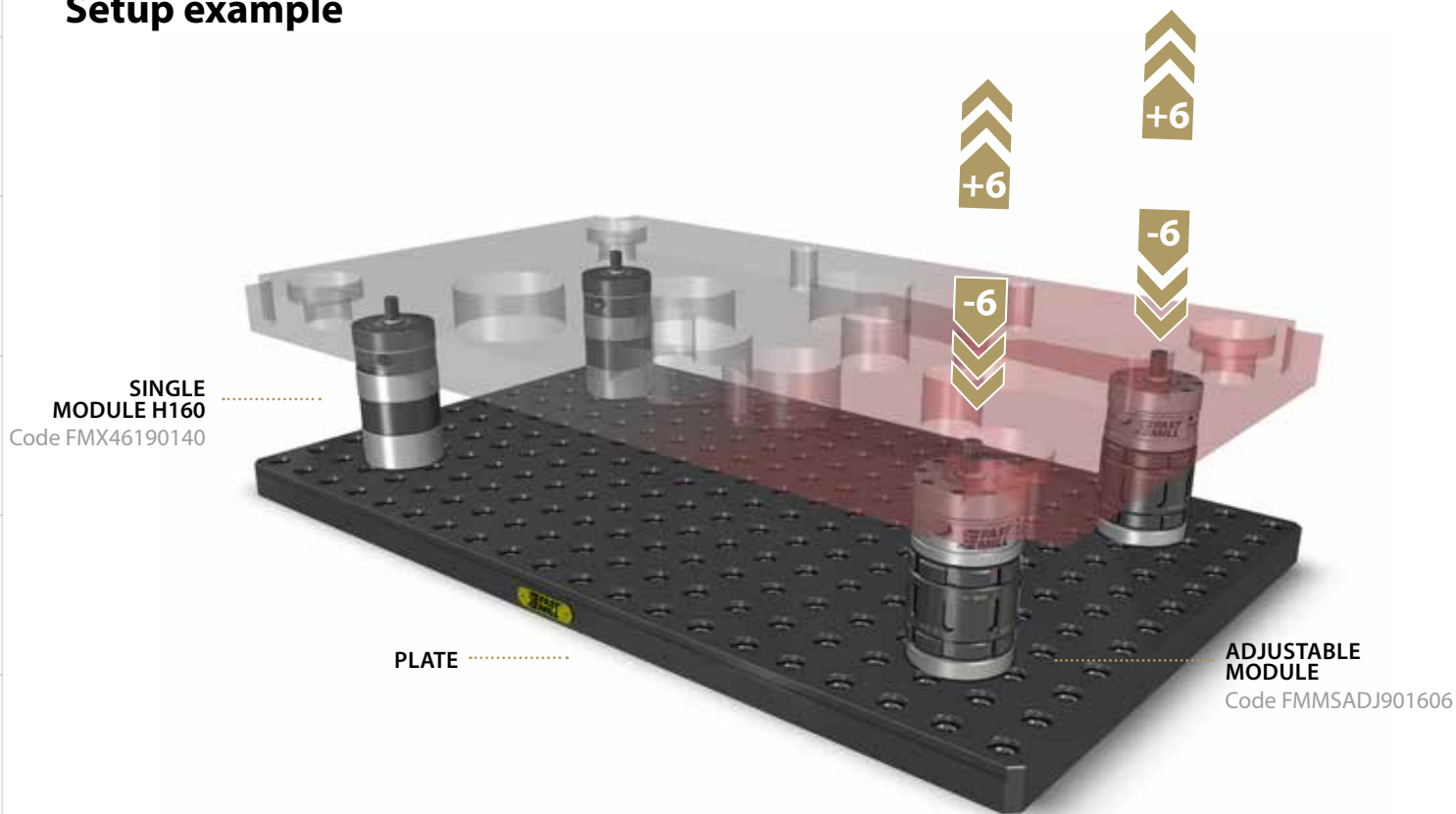
Adjustable module Ø90



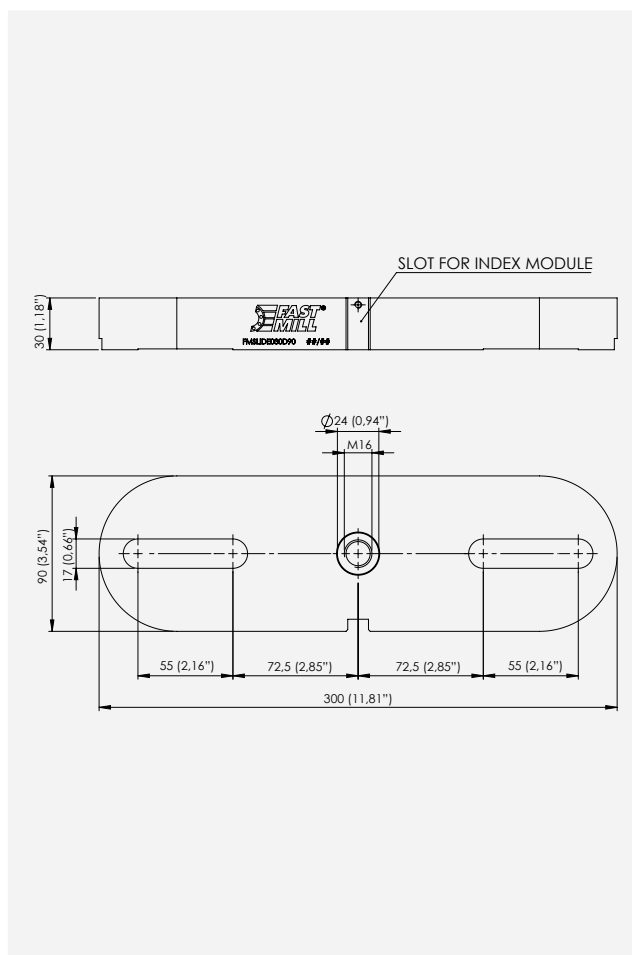
CODE	Ø	HEIGHT	WEIGHT
FMMSADJ901606	90 (3,54")	160 ± 6 (6,29" ± 0,23")	5,1 (11,24 lbs)

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Setup example



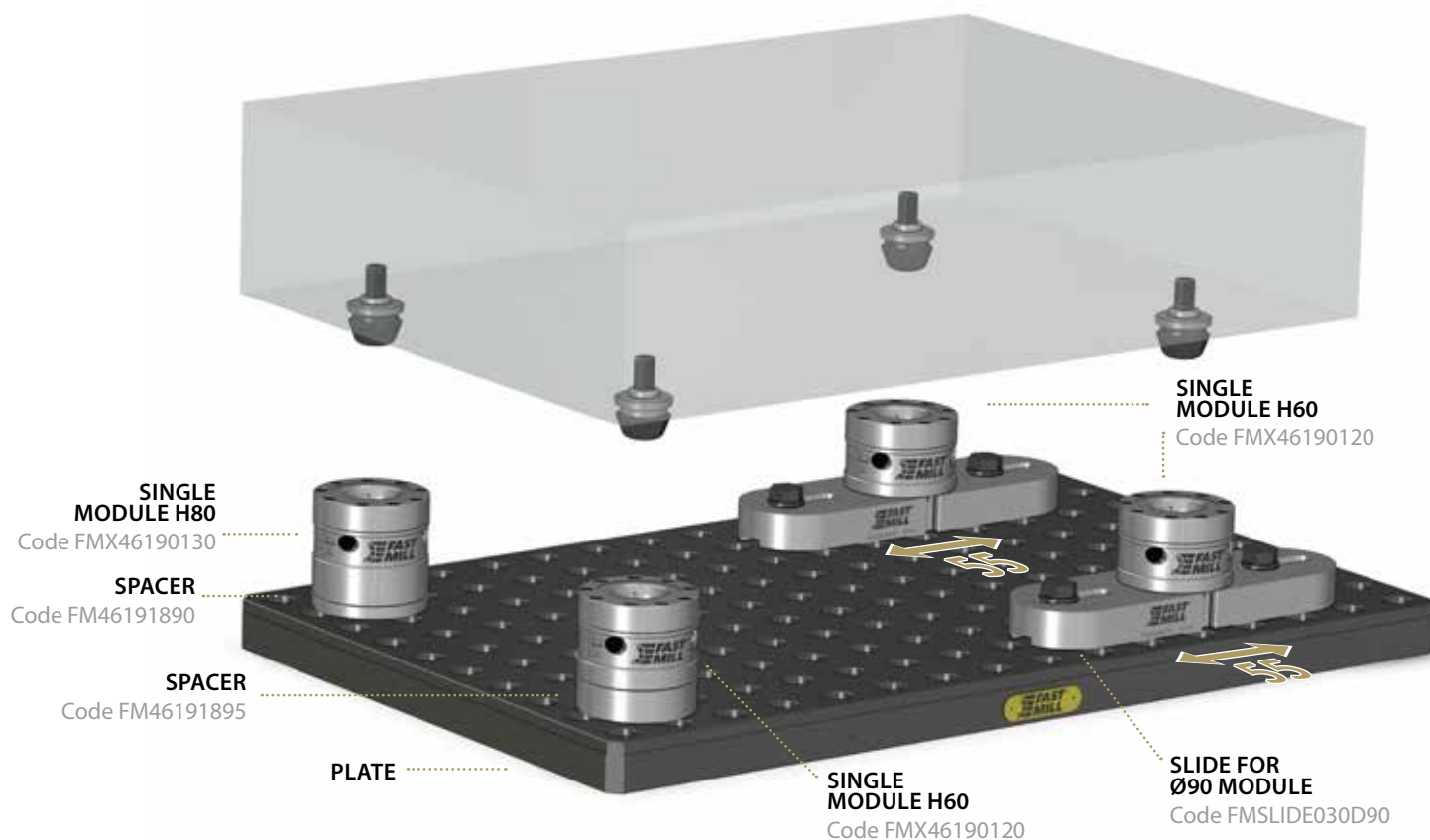
Slide plate for Ø90 module



CODE	DIMENSION	HEIGHT	WEIGHT
FMSLIDE030D90	300x90 (11,81"x3,54")	30 (1,18")	5,1 (11,24 lbs)

Before using please download our use and maintenance manual from fastmill.it

Setup example



MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES

MODULES
 PINS AND BUSHES
 RISERS
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 THIRD POINT
 VERTICAL CLAMPING
 MINI RANGE
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Anti-Rotation plate for index module setup

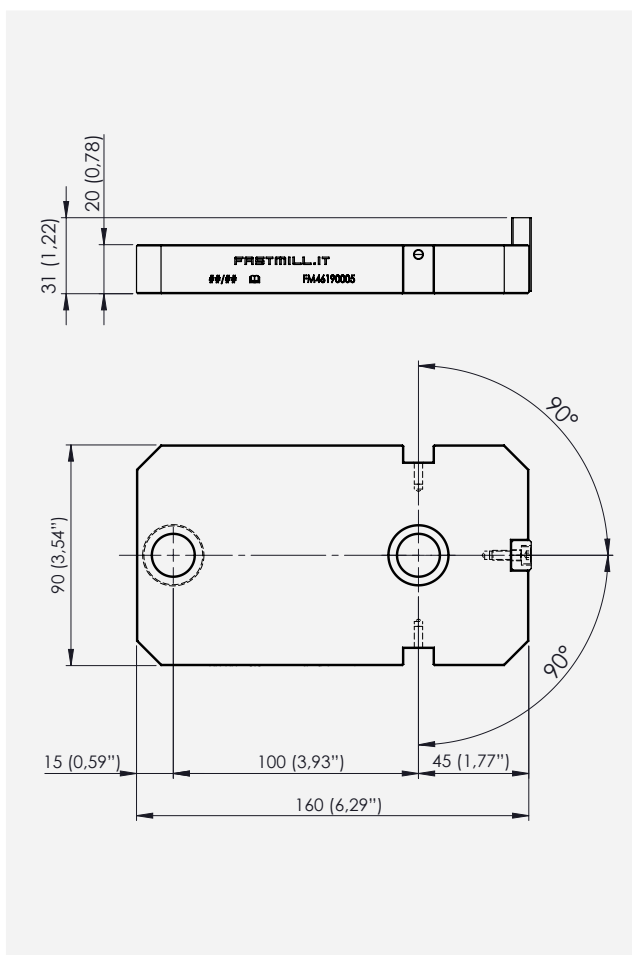


CODE	DIMENSION	HEIGHT	WEIGHT
FM46190005	90x160 (3,54"x6,29")	20 (0,78")	2,1 (4,62 lbs)

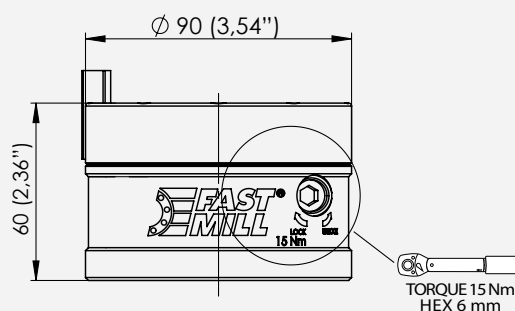


Related pins at page 42.

Before using please download our use and maintenance manual from fastmill.it



Index single module H60



Index single module height 60 mm and diameter 90 mm for application on FAST MILL® plates.

CODE	Ø	HEIGHT	WEIGHT
FM46190125	90 (3,54")	60 (2,36")	2,2 (4,85 lbs)



Related pins at page 42.

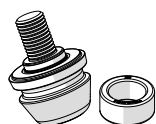
Before using please download our use and maintenance manual from fastmill.it

Index single module H80



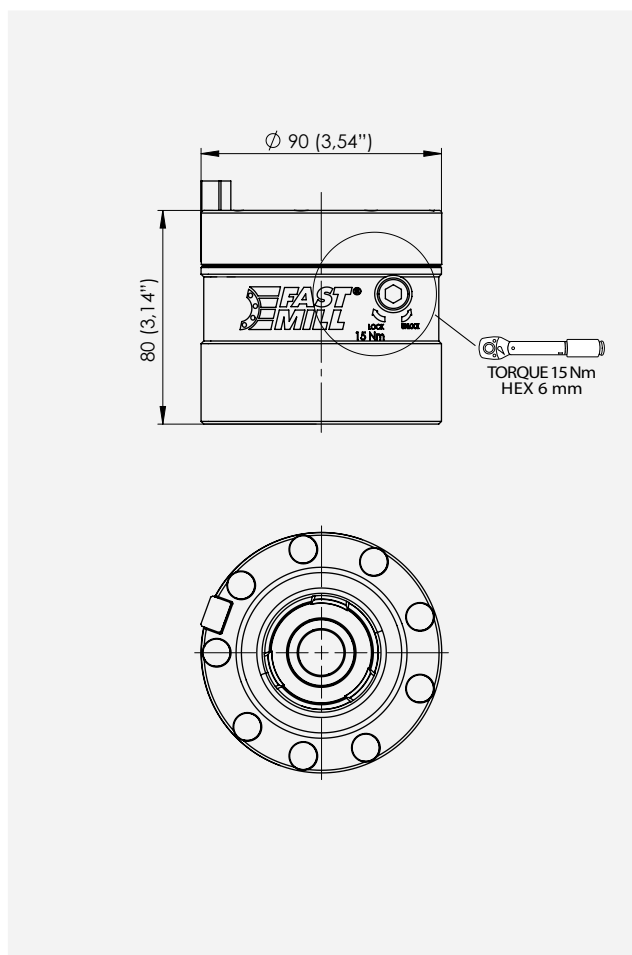
Index single module height 80 mm and diameter 90 mm for application on FAST MILL® plates.

CODE	Ø	HEIGHT	WEIGHT
FM46190135	90 (3,54")	80 (3,14")	3,4 (7,49 lbs)



Related pins and bushes at page 42.

Before using please download our use and maintenance manual from fastmill.it

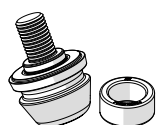


Index single module H160



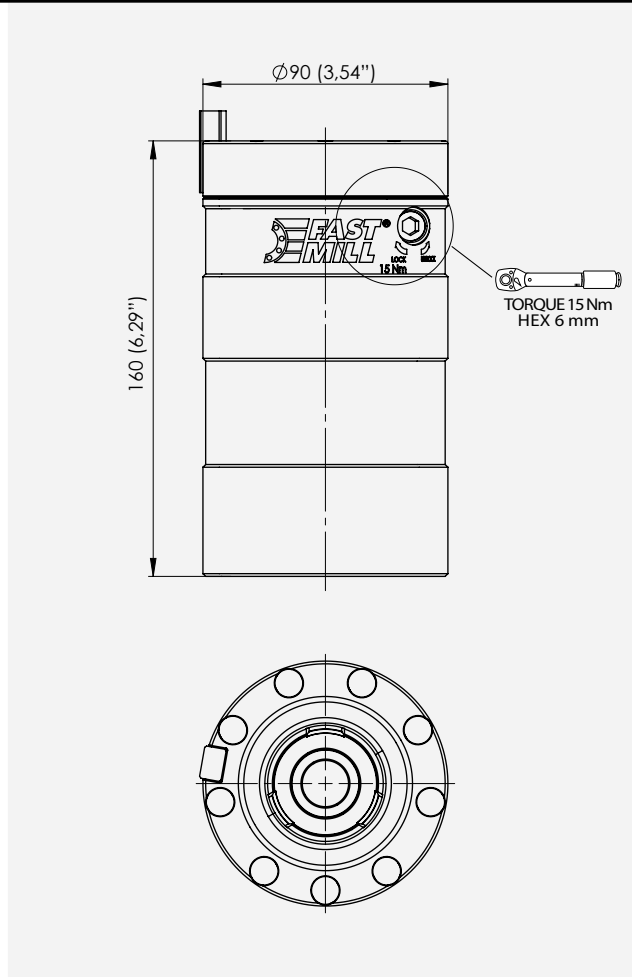
Index single module height 160 mm and diameter 90 mm for application on FAST MILL® plates.

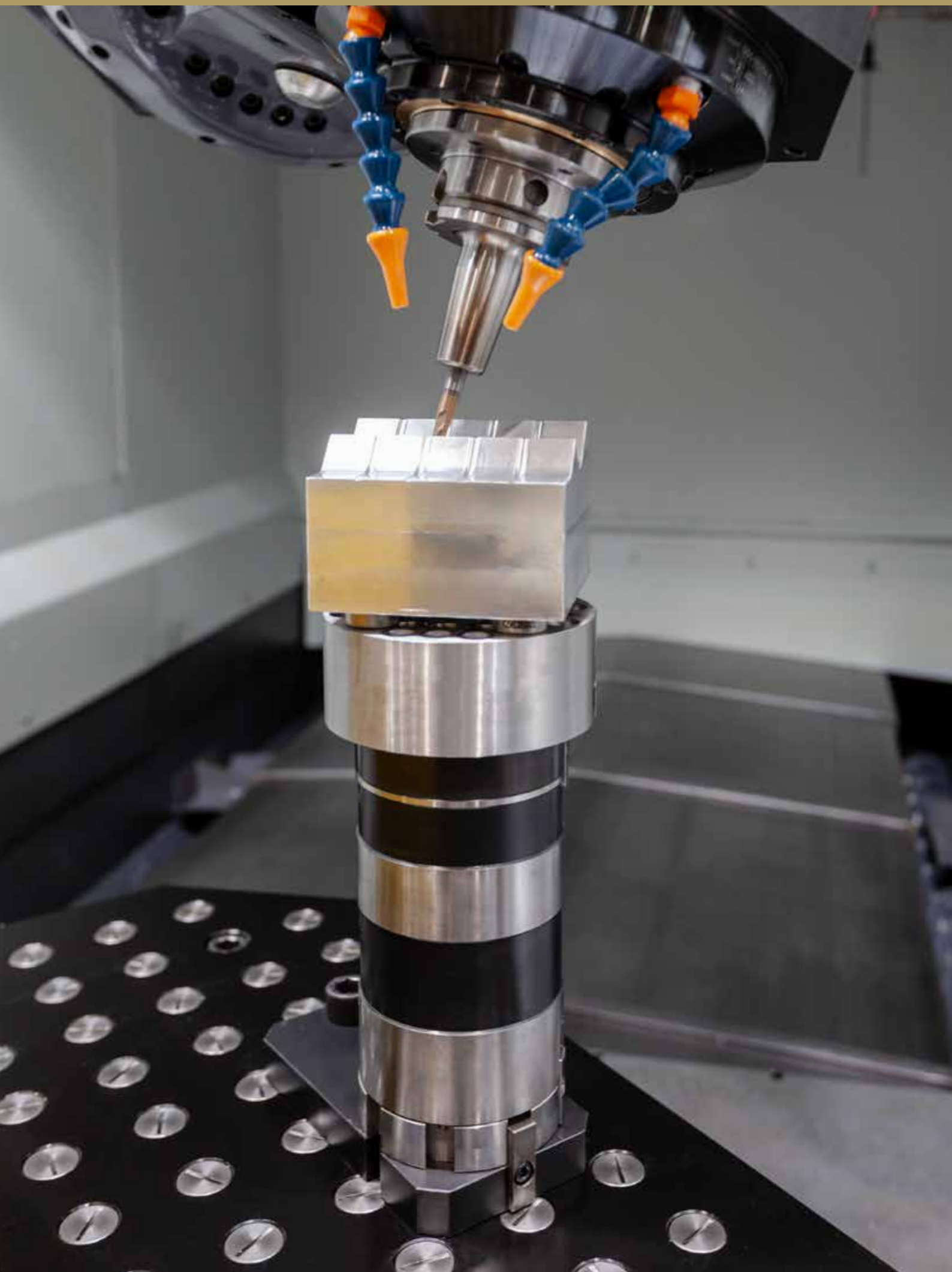
CODE	Ø	HEIGHT	WEIGHT
FM46190145	90 (3,54")	160 (6,29")	7,1 (15,65 lbs)



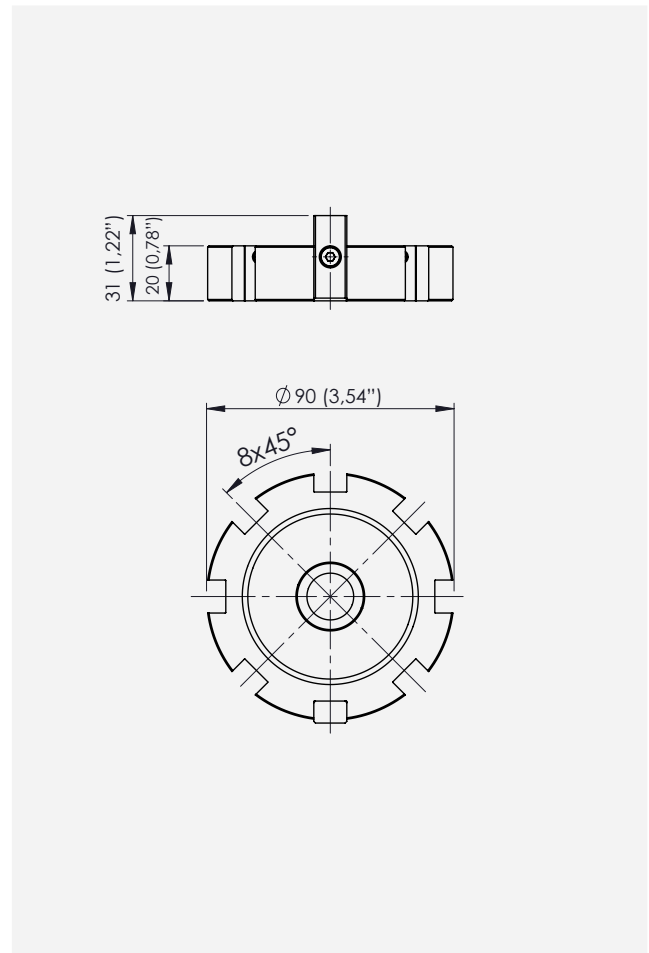
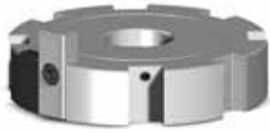
Related pins and bushes at page 42.

Before using please download our use and maintenance manual from fastmill.it



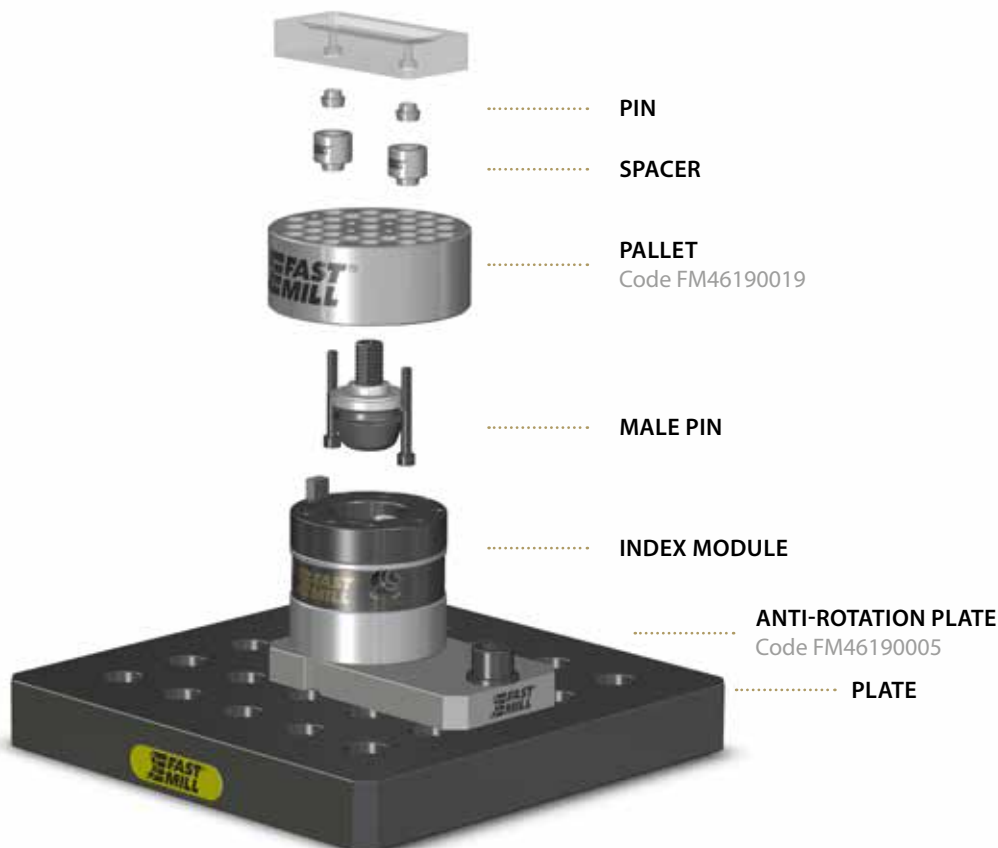


Index flange 45°



CODE	\varnothing	HEIGHT	WEIGHT
FM46191705	90 (3,54)	20 (0,78)	0,9 (1,98 lbs)

Index module combination example





Module ER32 set

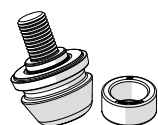


ER 32 module for application on FAST MILL® modules.

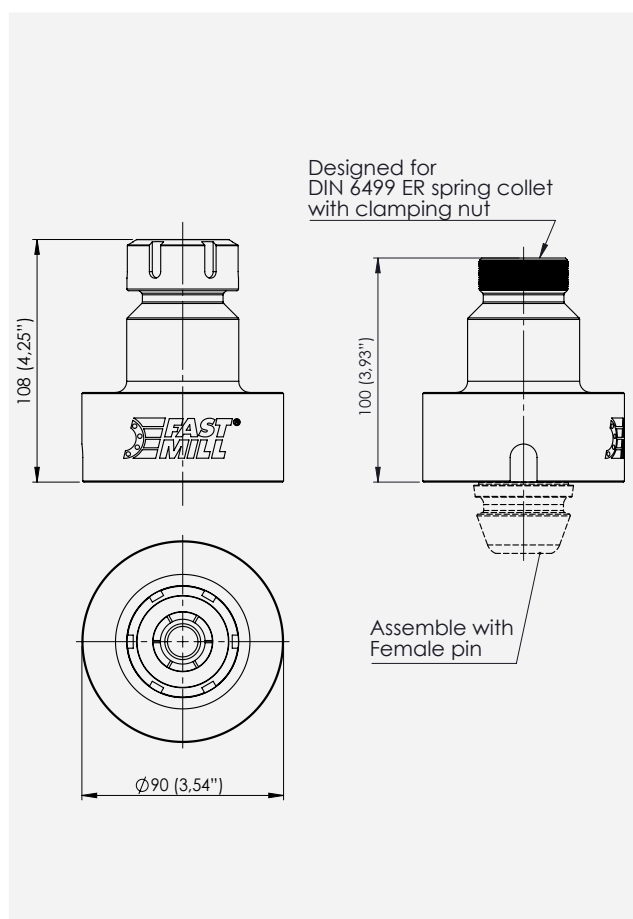
CODE	Ø	HEIGHT	WEIGHT
FMAMER3290100	90 (3,54")	108 (4,25")	2,6 (5,07 lbs)

SET CONFIGURATION

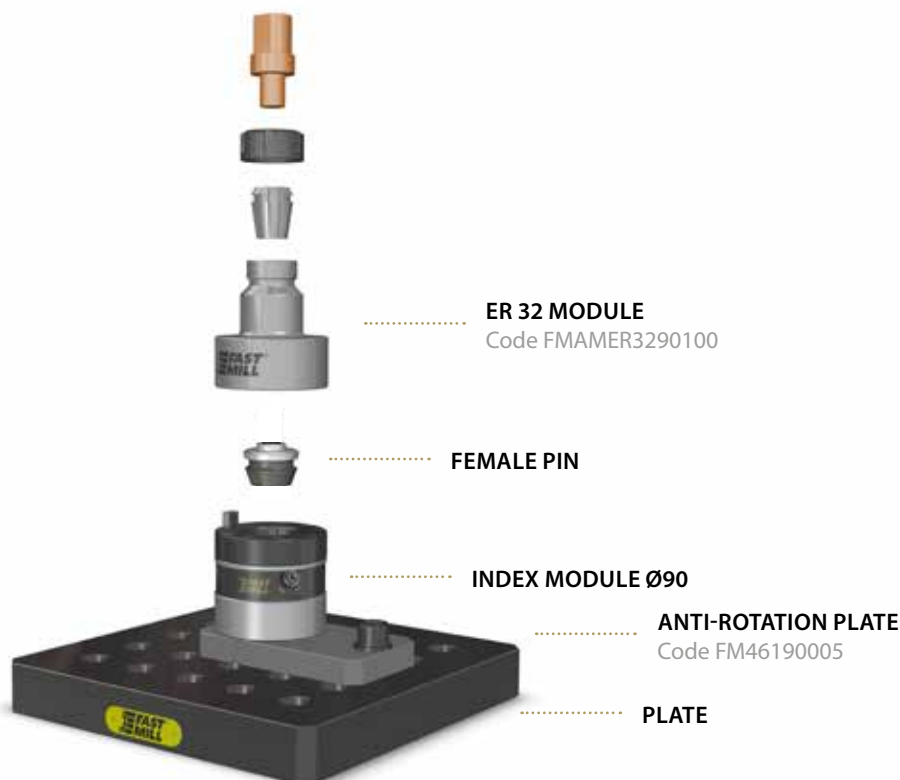
Nut ER32 standard DIN6499 M40x1,5	1 pieces
Collet ER32 standard DIN6499 Ø20	1 pieces
Hook wrench for ER32 nut	1 pieces



Related pins and bushes at page 42.



Assembly example



Before using please download our use and maintenance manual from fastmill.it

MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
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ACCESSORIES

Double module H80



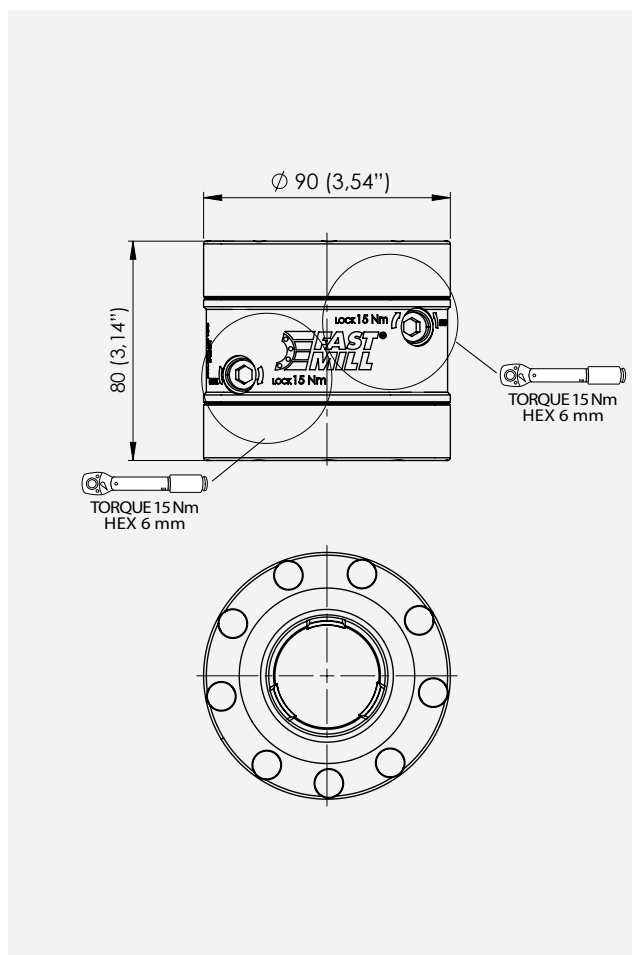
Double module height 80 mm and diameter 90 mm for application on FAST MILL® plates.

CODE	Ø	HEIGHT	WEIGHT
FM46190150	90 (3,54")	80 (3,14")	3,9 (8,59 lbs)



Related pins at page 42.

Before using please download our use and maintenance manual from fastmill.it



Double module H160



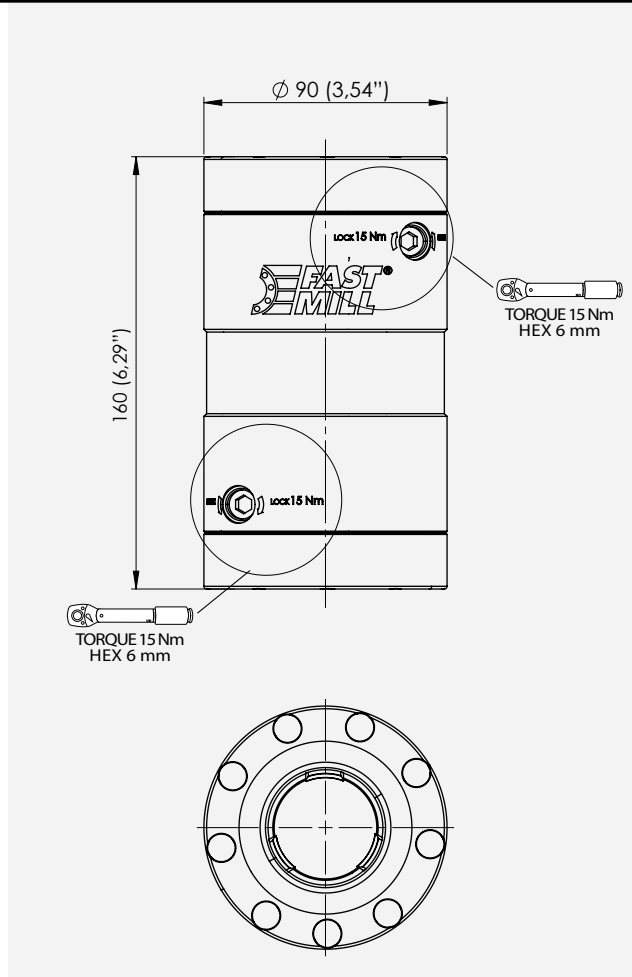
Double module height 160 mm and diameter 90 mm for application on FAST MILL® plates.

CODE	Ø	HEIGHT	WEIGHT
FM46190160	90 (3,54")	160 (6,29")	7,2 (15,87 lbs)

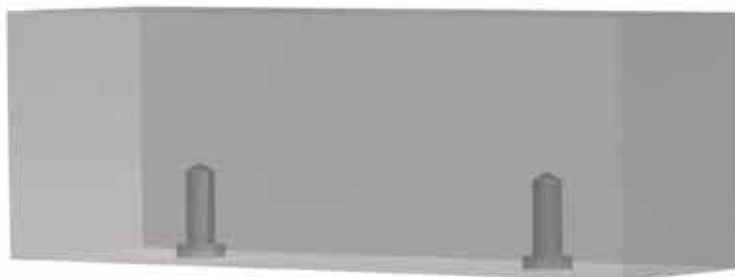


Related pins at page 42.

Before using please download our use and maintenance manual from fastmill.it

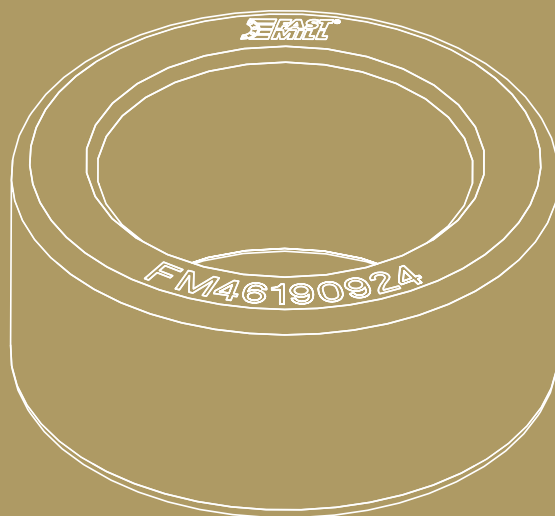
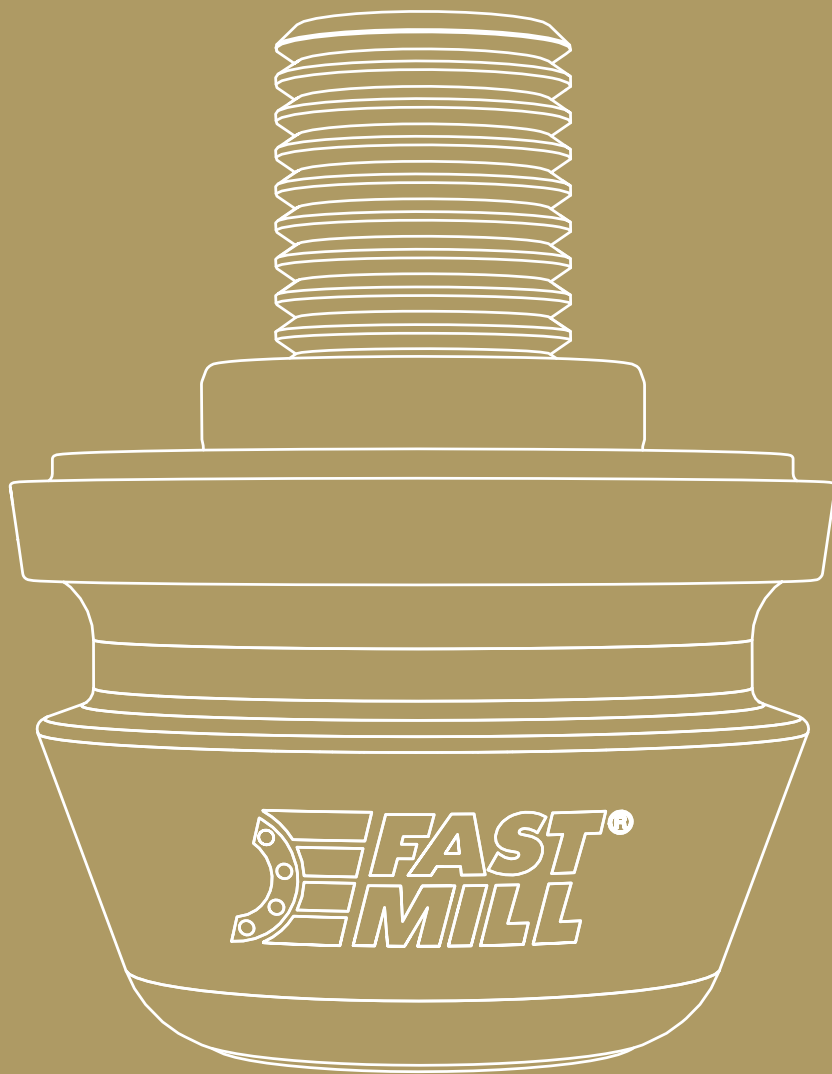


Double module combination example



Before using please download our use and maintenance manual from fastmill.it

- MODULES
- PINS AND BUSHES
- RISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
- FMZ
- PLATES
- CUBES
- CLAMPS
- ACCESSORIES

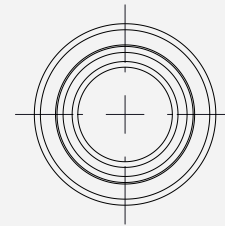
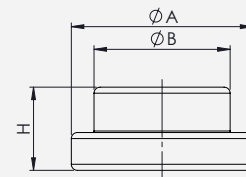




PINS AND BUSHES

MODULES
 PINS AND BUSHES
 RISERS
 SPACERS
 THIRD POINT
 VERTICAL CLAMPING
 MINI RANGE
 TILTING
 FMZ
 PLATES
 CUBES
 CLAMPS
 ACCESSORIES

Bush



CODE	Ø A	Ø B	HEIGHT
FM46190918	24 (0,94")	18 (0,70")	11 (0,43")
FM46190920	24 (0,94")	20 (0,78")	11 (0,43")
FM46190922	24 (0,94")	22 (0,86")	11 (0,43")
FM46190924	24 (0,94")	24 (0,94")	11 (0,43")
FM46190925	24 (0,94")	25 (0,98")	11 (0,43")
FM93000003 *	24 (0,94")	24 (0,94")	13 (0,51")
FM93000042 *	24 (0,94")	24 (0,94")	16 (0,23")
FM93000040 **	36 (1,41")	24 (0,94")	15 (0,59")
FM93000041 **	36 (1,41")	36 (1,41")	20 (0,78")

* For special applications.

** For vertical clamping at page 74.

Minimum order quantity for all bushes is 5 pieces or multiple of 5.



Pin for single module Ø49



CODE	M	Ø	TYPE
FMPMA49M06D10	M6	10 (0,39")	A
FMPMC49M06D10	M6	10 (0,39")	C
FMPMA49M06D11	M6	11 (0,43")	A
FMPMC49M06D11	M6	11 (0,43")	C
FMPMC49M06D00	M6	-	C

CODE	M	Ø	TYPE
FMPMA49M08D12	M8	12 (0,47")	A
FMPMC49M08D12	M8	12 (0,47")	C
FMPMA49M08D14	M8	14 (0,55")	A
FMPMC49M08D14	M8	14 (0,55")	C
FMPMC49M08D00	M8	-	C

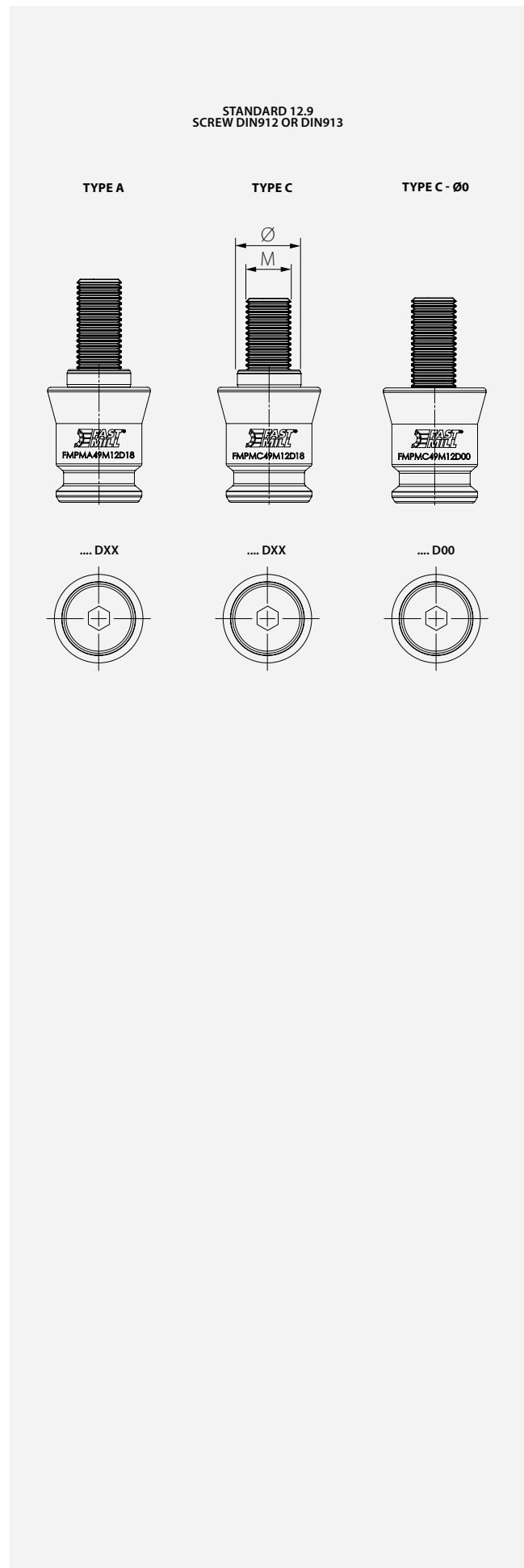
CODE	M	Ø	TYPE
FMPMA49M10D14	M10	14 (0,55")	A
FMPMC49M10D14	M10	14 (0,55")	C
FMPMA49M10D16	M10	16 (0,62")	A
FMPMC49M10D16	M10	16 (0,62")	C
FMPMC49M10D00	M10	-	C

CODE	M	Ø	TYPE
FMPMA49M12D18	M12	18 (0,70")	A
FMPMC49M12D18	M12	18 (0,70")	C
FMPMA49M12D20	M12	20 (0,78")	A
FMPMC49M12D20	M12	20 (0,78")	C
FMPMC49M12D00	M12	-	C

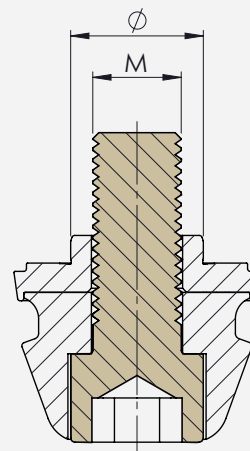
CODE	M	Ø	TYPE
FMPMA49M16D22	M16	22 (0,86")	A
FMPMC49M16D22	M16	22 (0,86")	C
FMPMA49M16D24	M16	24 (0,94")	A
FMPMC49M16D24	M16	24 (0,94")	C
FMPMC49M16D00	M16	-	C



Screw 12.9 DIN913 included.



Male Pin for single module Ø90



CODE	M	Ø	TYPE
------	---	---	------

FM46191105	M6	10 (0,39")	A
FM46193105	M6	10 (0,39")	C
FM46191106	M6	11 (0,43")	A
FM46193106	M6	11 (0,43")	C

CODE	M	Ø	TYPE
------	---	---	------

FM46191107	M8	12 (0,47")	A
FM46193107	M8	12 (0,47")	C
FM46191108	M8	14 (0,55")	A
FM46193108	M8	14 (0,55")	C

CODE	M	Ø	TYPE
------	---	---	------

FM46191109	M10	14 (0,55")	A
FM46193109	M10	14 (0,55")	C
FM46191110	M10	16 (0,62")	A
FM46193110	M10	16 (0,62")	C

CODE	M	Ø	TYPE
------	---	---	------

FM46191111	M12	18 (0,70")	A
FM46193111	M12	18 (0,70")	C
FM46191121	M12	20 (0,78")	A
FM46193121	M12	20 (0,78")	C

CODE	M	Ø	TYPE
------	---	---	------

FM46191132	M16	22 (0,86")	A
FM46193132	M16	22 (0,86")	C
FM46191142	M16	24 (0,94")	A
FM46193142	M16	24 (0,94")	C



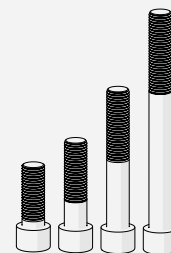
Screw 12.9 (DIN912) included.



For different screw combinations refer to reducer washer at page 123.

TECHNICAL TIPS

In the whole range of FAST MILL® modules you can use standard 12.9 (DIN912) screws from M6 to M16 or higher of different heights for the connection of the pieces, to the plates and to the risers/ spacers.

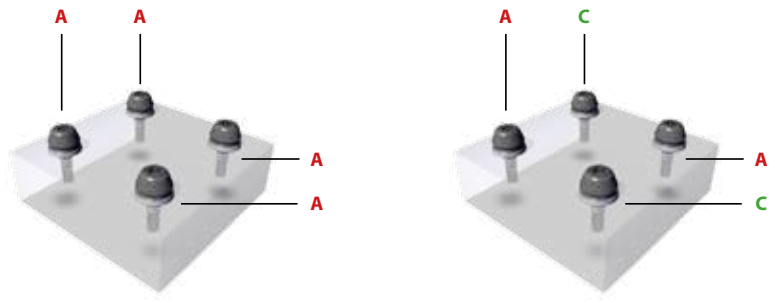


TECHNICAL INFORMATION

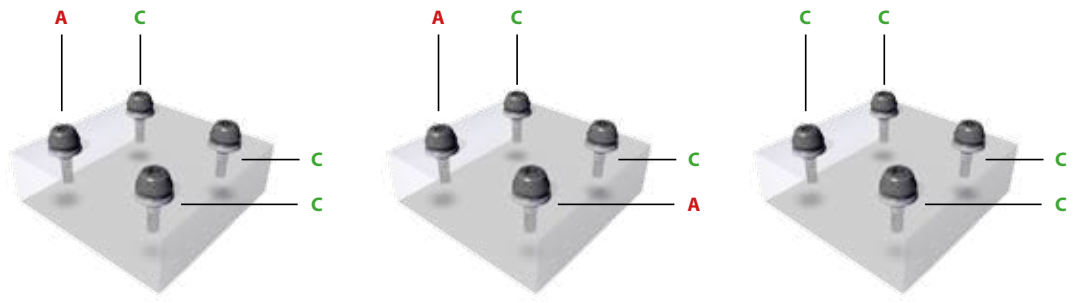
A
CENTERING PIN **C**
CLAMPING PIN

Clamping and positioning of fixture and/or workpiece are achieved through the clamping pins. Type A is used for centering and clamping, type C only for clamping.

SMALL PARTS



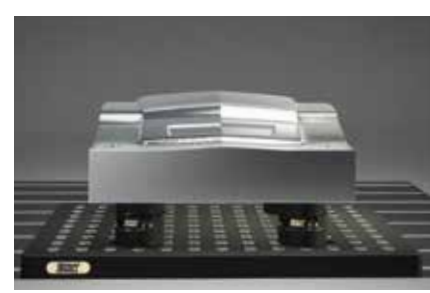
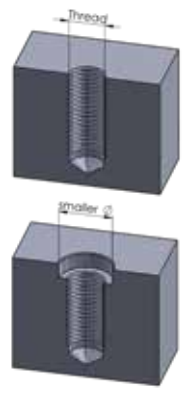
BIG PARTS



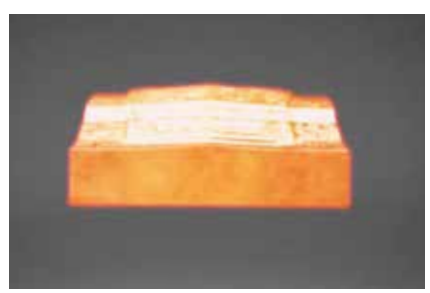
Re-machining process of the counterbores to compensate for distortion of the part.



1 : MACHINING COUNTERBORES (SMALLER Ø)



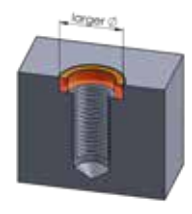
2 : ROUGHING



3 : HEAT TREATMENT



4 : ENLARGING HOLES (LARGER Ø)



MODULES

PINS AND BUSHES

RISERS

SPACERS

THIRD POINT

VERTICAL CLAMPING

MINI RANGE

TILTING

FMZ

PLATES

CUBES

CLAMPS

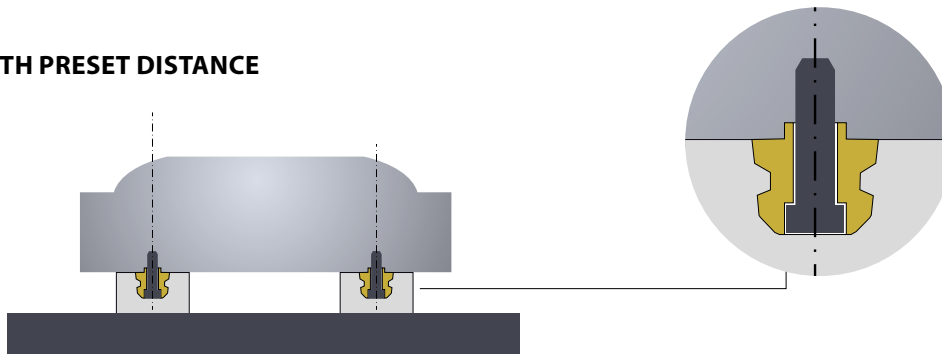
ACCESSORIES

MODULES
 PINS AND BUSHES
 RISERS
 SPACERS
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 VERTICAL CLAMPING
 MINI RANGE
 TILTING
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 ACCESSORIES

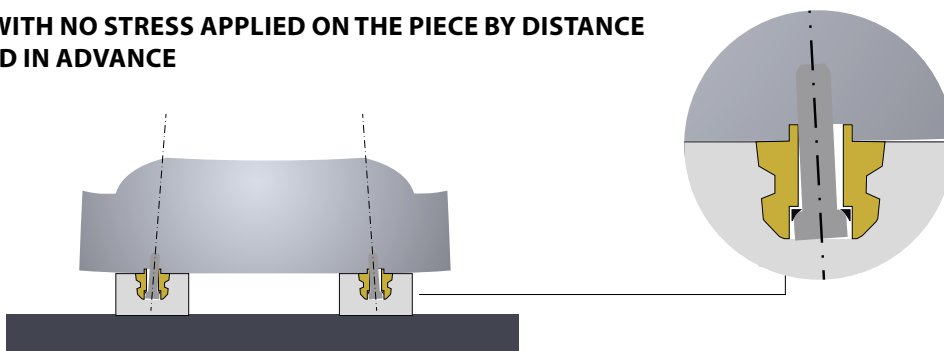
Floating Pin (H Pin): Innovative solution for workpiece re-positioning with no stress applied on the piece.

PATENTED

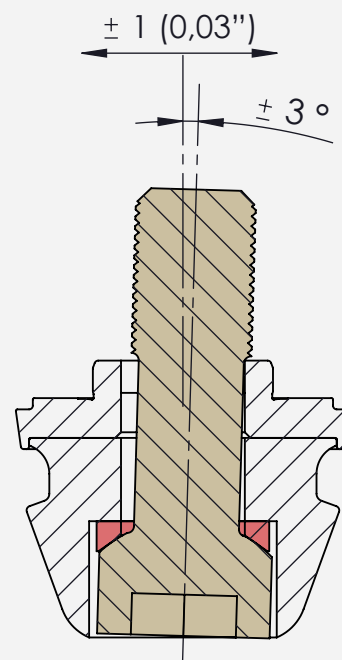
CLAMPING WITH PRESET DISTANCE



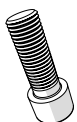
CLAMPING WITH NO STRESS APPLIED ON THE PIECE BY DISTANCE NOT DEFINED IN ADVANCE



Floating Pin (H Pin)

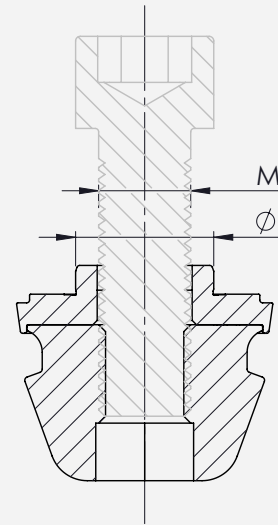
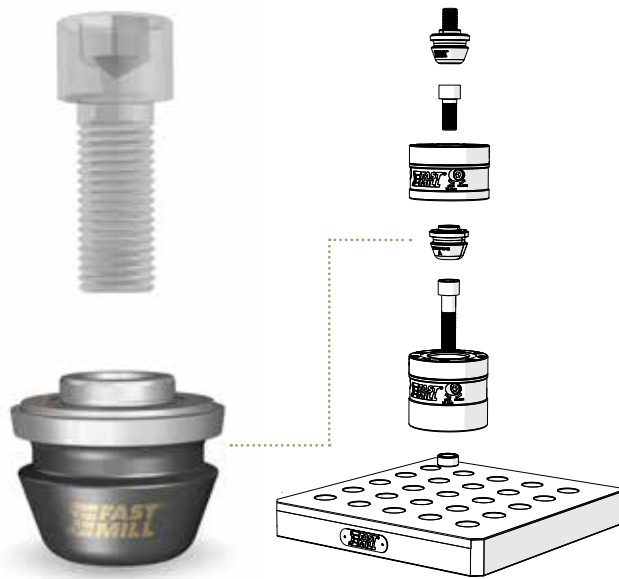


CODE	SCREW	Ø	TYPE
FM46191421	M12	20 (0,78")	A
FM46193421	M12	20 (0,78")	C
CODE	SCREW	Ø	TYPE
FM46191442	M16	24 (0,94")	A
FM46193442	M16	24 (0,94")	C



Special screw included.

Female Pin for single module Ø90



CODE	M	Ø	TYPE
FM46191242	M16	24 (0,94")	A

Also available M12 Ø18/20 mm type A and C - M16 Ø22 mm type A and C - M16 Ø24 mm type C

Screw not included.



MODULES

PINS AND BUSHES

RISERS

SPACERS

THIRD POINT

VERTICAL CLAMPING

MINI RANGE

TILTING

FMZ

PLATES

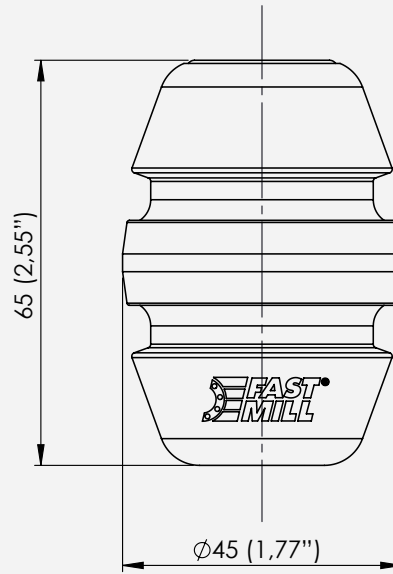
CUBES

CLAMPS

ACCESSORIES

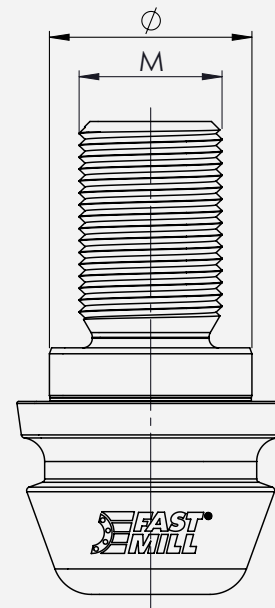
MODULES
PINS AND BUSHES
RISERS
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THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
PLATES
CUBES
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ACCESSORIES

Double Pin



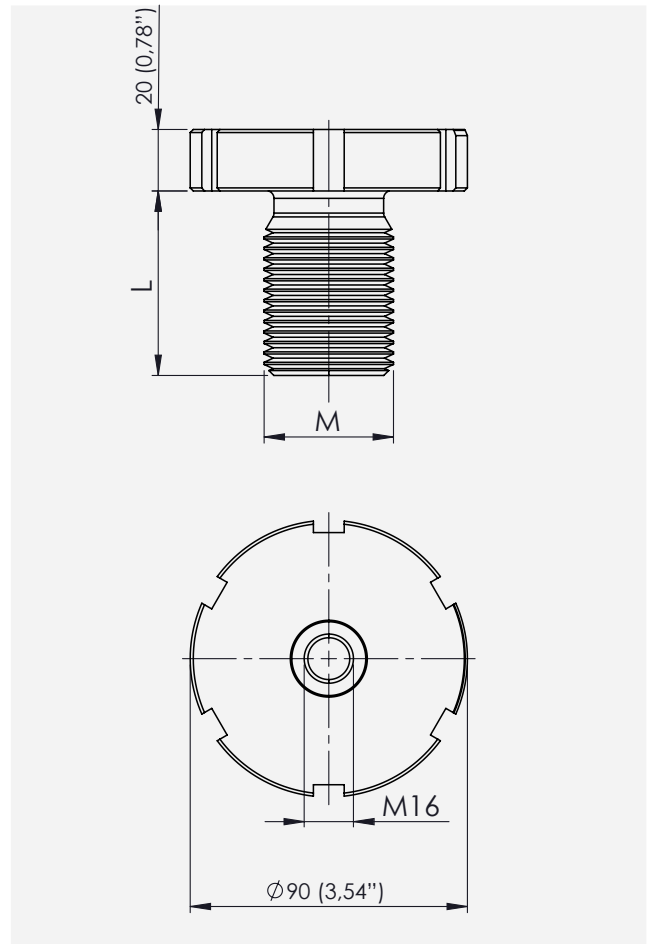
CODE	Ø	HEIGHT
FM46191316	45 (1,77")	65 (2,55")

Integral Pin M24



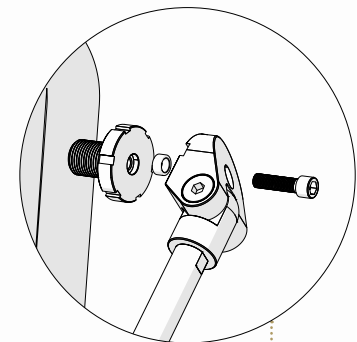
CODE	M	Ø	TYPE
FM46191162	M24	34 (1,33")	A
FM46191164	M24	34 (1,33")	C
FM46191163	M24	36 (1,33")	A
FM46191165	M24	36 (1,33")	C

Adapter M24 > M64

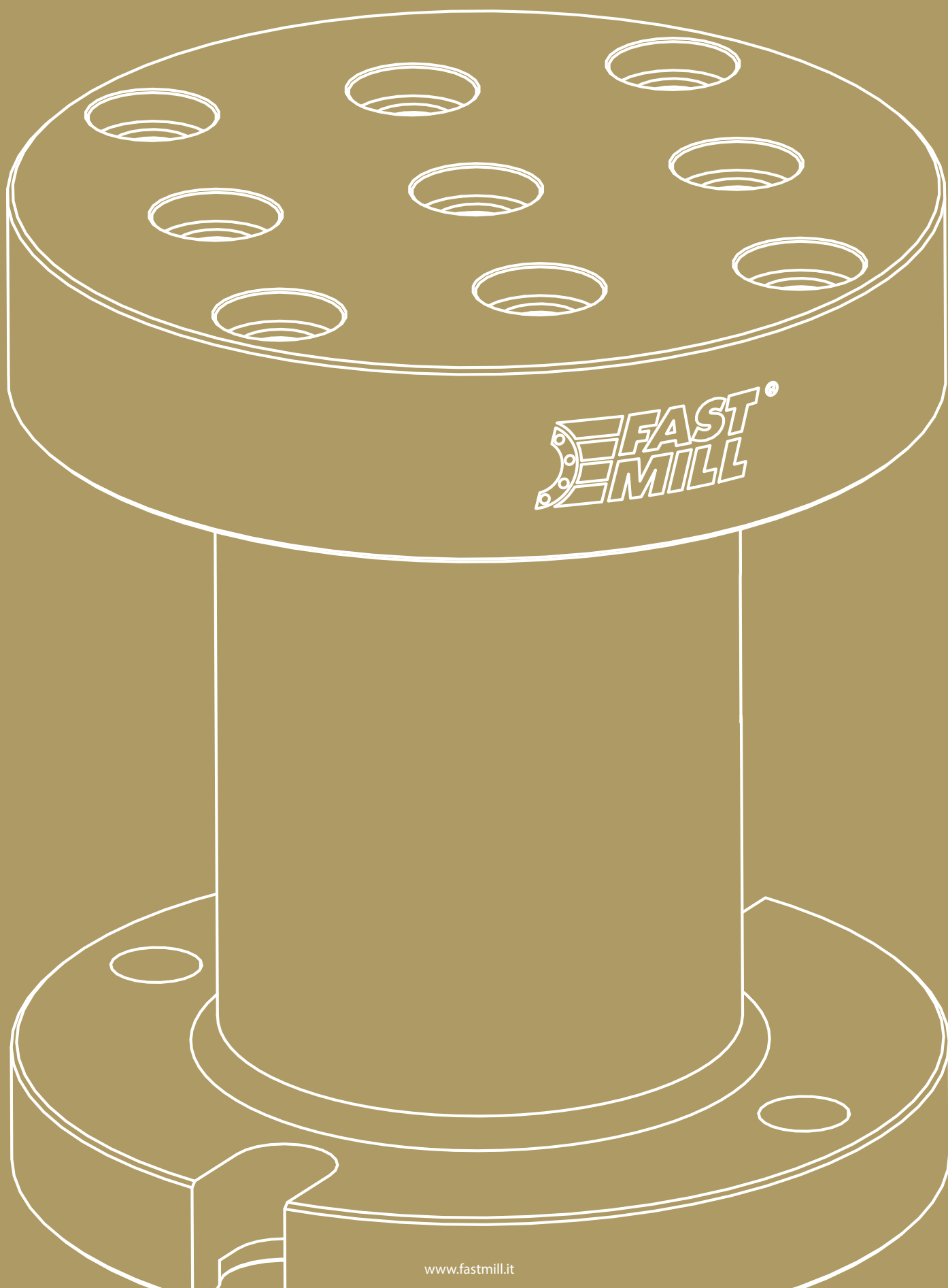


CODE	M	L
FM93000028	M24X3	35 (1,37")
FM93000010	M30X3,5	40 (1,57")
FM93000023	M36X3	50 (1,96")
FM93000011	M36X4	50 (1,96")
FM93000024	M42X3	60 (2,36")
FM93000012	M42X4,5	60 (2,36")
FM93000025	M48X3	70 (2,75")
FM93000013	M48X5	70 (2,75")
FM93000014	M56X5,5	80 (3,14")
FM93000015	M64X6	90 (3,54")
FM93000043	M20X2,5	30 (1,18")

Assembly example



MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
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ACCESSORIES

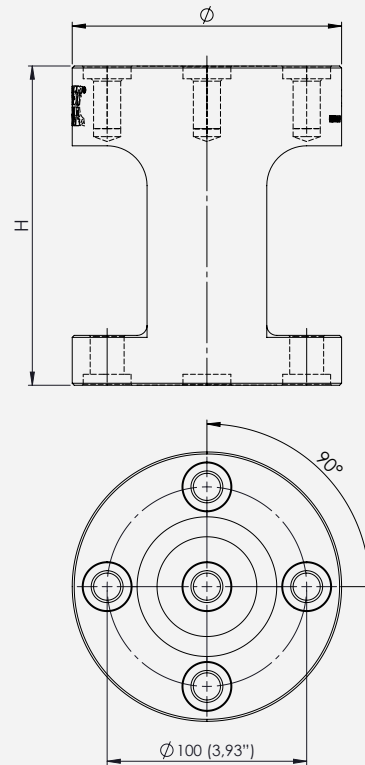




RISERS



Riser Ø135

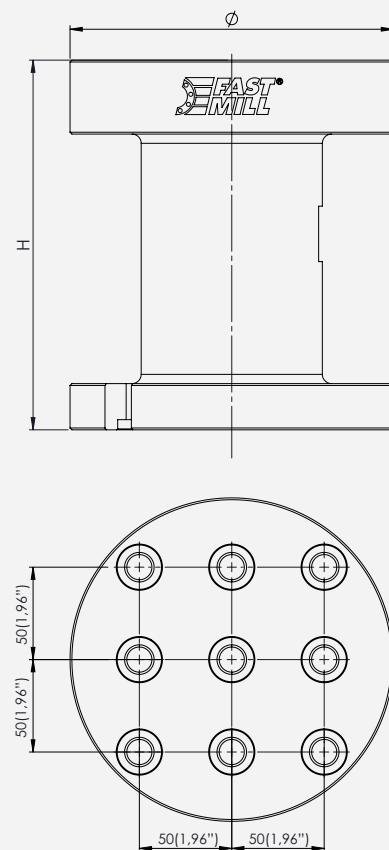


CODE	Ø	HEIGHT	WEIGHT
FM46192060	135 (5,31")	160 (6,29")	13 (28,66 lbs)



Related bushes at page 43.

Riser Ø175



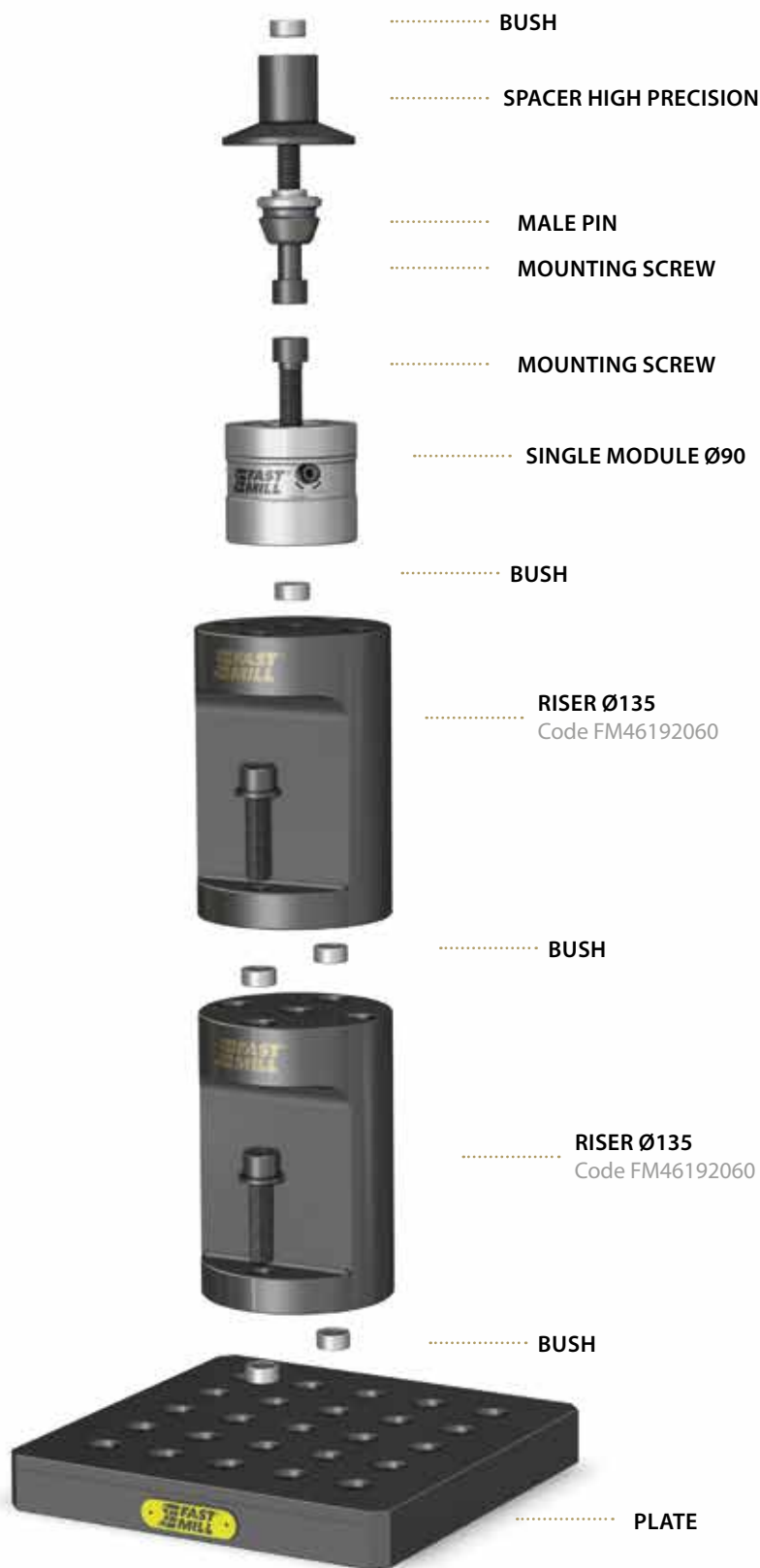
CODE	Ø	HEIGHT	WEIGHT
FM46192050	175 (6,88")	200 (7,87")	20 (44,09 lbs)



Related bushes at page 43.



Riser assembly example



- MODULES
- PINS AND BUSHES
- RISERS**
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
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- CUBES
- CLAMPS
- ACCESSORIES



SPACERS

MODULES

PINS AND BUSHES

RISERS

SPACERS

THIRD POINT

VERTICAL CLAMPING

MINI RANGE

TILTING

FMZ

PLATES

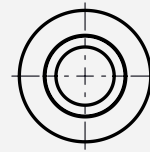
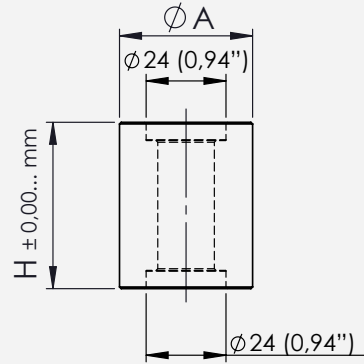
CUBES

CLAMPS

ACCESSORIES

Spacer Ø40 HIGH PRECISION

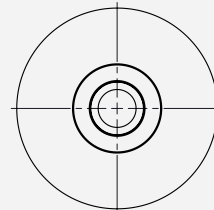
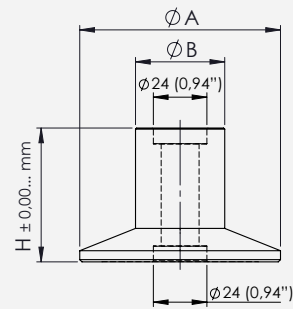
HARDENED - GRINDED - H TOLERANCE $\pm 0,00... \text{ mm}$



CODE	Ø A	HEIGHT
FMSPHP0004010	40 (1,57")	10 (0,39")
FMSPHP0004015	40 (1,57")	15 (0,59")
FMSPHP0004020	40 (1,57")	20 (0,78")
FMSPHP0004025	40 (1,57")	25 (0,98")
FMSPHP0004030	40 (1,57")	30 (1,18")
FMSPHP0004040	40 (1,57")	40 (1,57")
FMSPHP0004050	40 (1,57")	50 (1,96")

Reduction Ø90 - 40 HIGH PRECISION

HARDENED - GRINDED - H TOLERANCE $\pm 0,00... \text{ mm}$



CODE	Ø A	Ø B	HEIGHT
FM46191801	90 (3,54")	40 (1,57")	10 (0,39")
FM46191802	90 (3,54")	40 (1,57")	20 (0,78")
FM46191803	90 (3,54")	40 (1,57")	30 (1,18")
FM46191804	90 (3,54")	40 (1,57")	40 (1,57")
FM46191805	90 (3,54")	40 (1,57")	50 (1,96")
FM46191806	90 (3,54")	40 (1,57")	60 (2,36")



Related bushes at page 43.

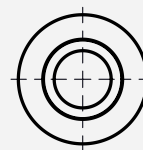
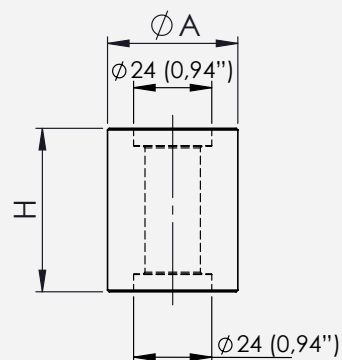
Spacer Ø40



CODE	Ø A	HEIGHT
FM46191910	40 (1,57")	10 (0,39")
FM46191915	40 (1,57")	15 (0,59")
FM46191920	40 (1,57")	20 (0,78")
FM46191925	40 (1,57")	25 (0,98")
FM46191940	40 (1,57")	40 (1,57")
FM46191950	40 (1,57")	50 (1,96")

To be used on top of reduction Ø90

Related bushes at page 43.

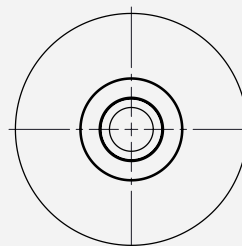
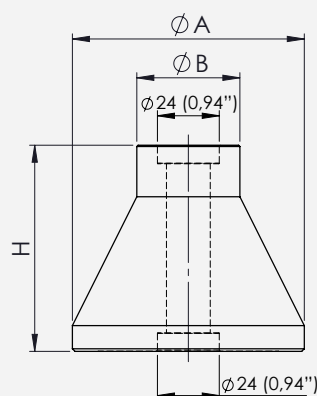


Reduction Ø90 - 40



CODE	Ø A	Ø B	HEIGHT
FM46191785	90 (3,54")	40 (1,57")	20 (0,78")
FM46191790	90 (3,54")	40 (1,57")	40 (1,57")
FM46191795	90 (3,54")	40 (1,57")	60 (2,36")
FM46191800	90 (3,54")	40 (1,57")	80 (3,14")

Related bushes at page 43.



MODULES
 PINS AND BUSHES
 RISERS
 SPACERS
 THIRD POINT
 VERTICAL CLAMPING
 MINI RANGE
 TILTING
 FMZ
 PLATES
 CUBES
 CLAMPS
 ACCESSORIES

Spacer Ø55

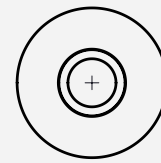
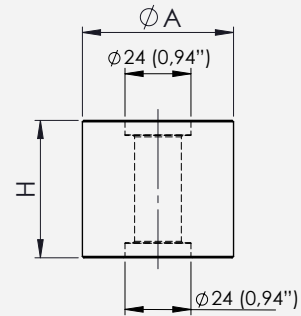


CODE	Ø A	HEIGHT
FM46191843	55 (2,16")	3 (0,11")
FM46191844	55 (2,16")	4 (0,15")
FM46191845	55 (2,16")	5 (0,19")
FM46191810	55 (2,16")	10 (0,39")
FM46191815	55 (2,16")	15 (0,59")
FM46191820	55 (2,16")	20 (0,78")
FM46191825	55 (2,16")	25 (0,98")
FM46191840	55 (2,16")	40 (1,57")
FM46191850	55 (2,16")	50 (1,96")

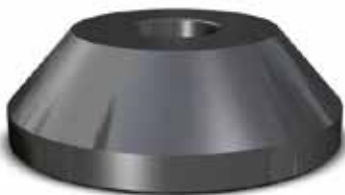
To be used on top of reduction Ø90 - page 48-49-51



Related bushes at page 43.



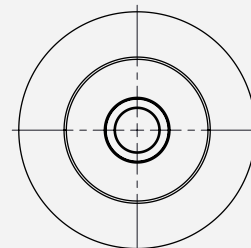
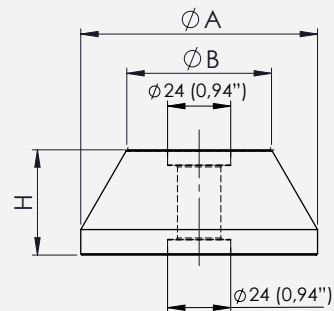
Reduction Ø90 - 55



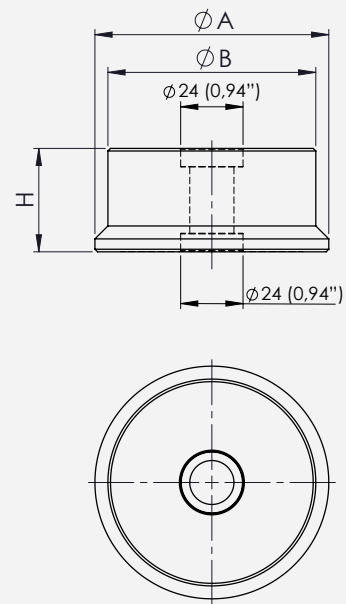
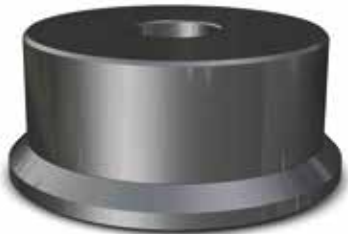
CODE	Ø A	Ø B	HEIGHT
FM46191740	90 (3,54")	55 (2,16")	10 (0,39")
FM46191745	90 (3,54")	55 (2,16")	25 (0,98")
FM46191750	90 (3,54")	55 (2,16")	30 (1,18")



Related bushes at page 43.



Reduction $\varnothing 90 - 80$



CODE	$\varnothing A$	$\varnothing B$	HEIGHT
FM46191770	90 (3,54")	80 (3,14")	20 (0,78")
FM46191780	90 (3,54")	80 (3,14")	40 (1,57")
FM46191782	90 (3,54")	80 (3,14")	60 (2,36")



Related bushes at page 43.





Spacer Ø90

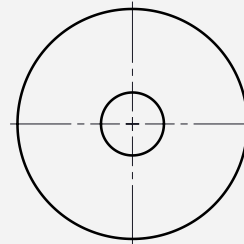
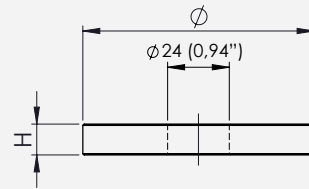


CODE	Ø	HEIGHT
FM46191889 *	90 (3,54")	5 (0,19")
FM46191890	90 (3,54")	10 (0,39")
FM46191891	90 (3,54")	11 (0,43")
FM46191892	90 (3,54")	12 (0,47")
FM46191895	90 (3,54")	30 (1,18")

* Bushes Ø24 h16 Code **FM93000042**



Related bushes at page 43.



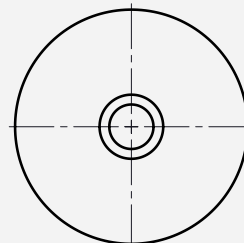
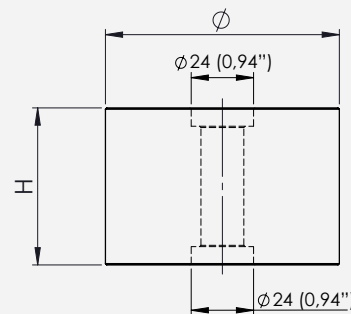
Turnable spacer Ø90



CODE	Ø	HEIGHT
FM46191710	90 (3,54")	60 (2,36")
FM46191715	90 (3,54")	80 (3,14")

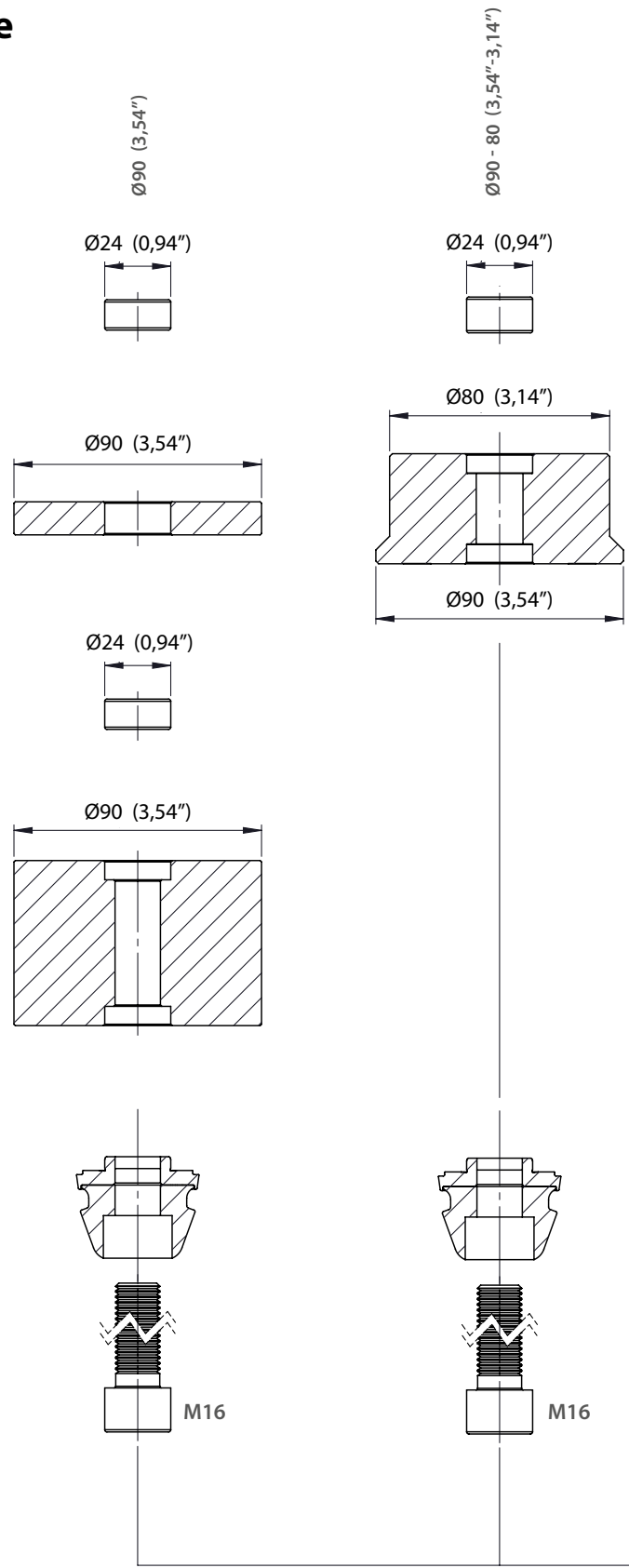


Related bushes at page 43.



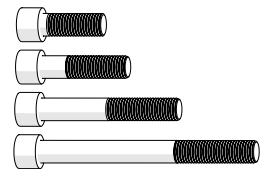
MODULES
PINS AND BUSHES
RISERS
SPACERS
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TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES

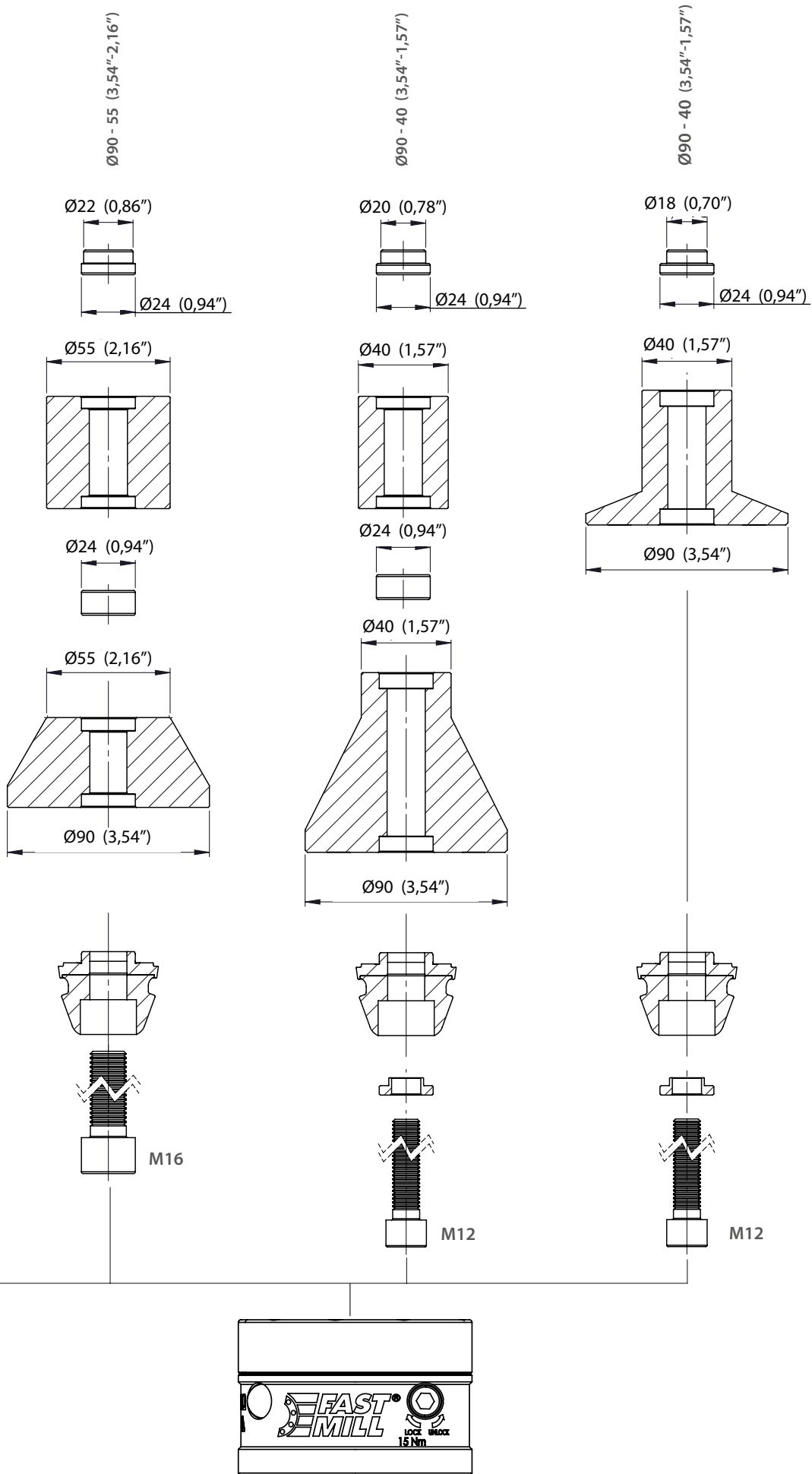
Spacers assembly example



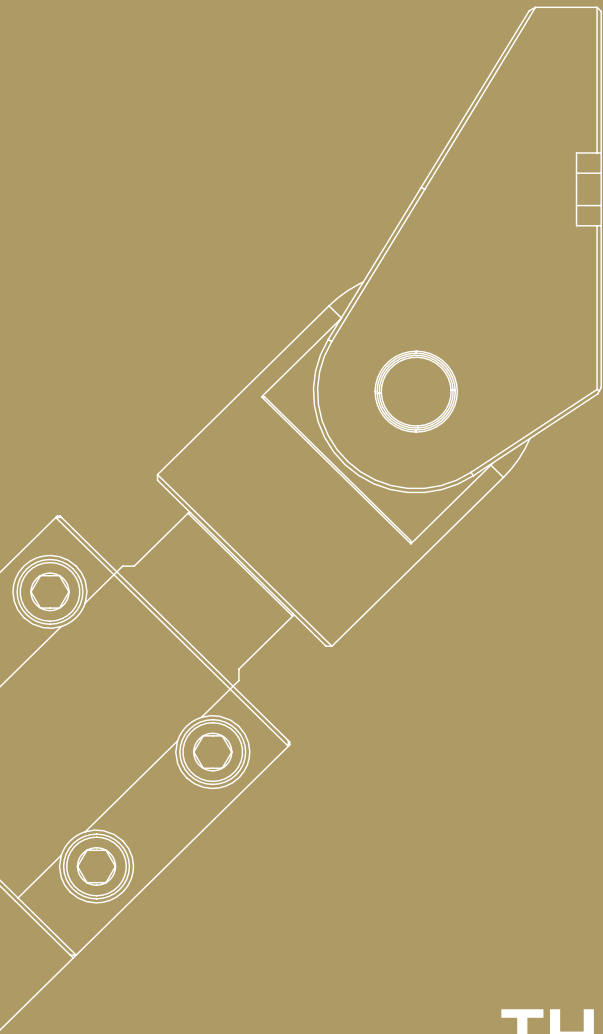
TECHNICAL TIPS

In the whole range of FAST MILL® modules you can use standard 12.9 (DIN912) screws from M6 to M16 or higher of different heights for the connection of the pieces, to the plates and to the risers / spacers.





MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
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ACCESSORIES



THIRD CLAMPING POINT

- MODULES
- PINS AND BUSHES
- RISERS
- SPACERS
- THIRD POINT**
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
- FMZ
- PLATES
- CUBES
- CLAMPS
- ACCESSORIES

Third clamping point set



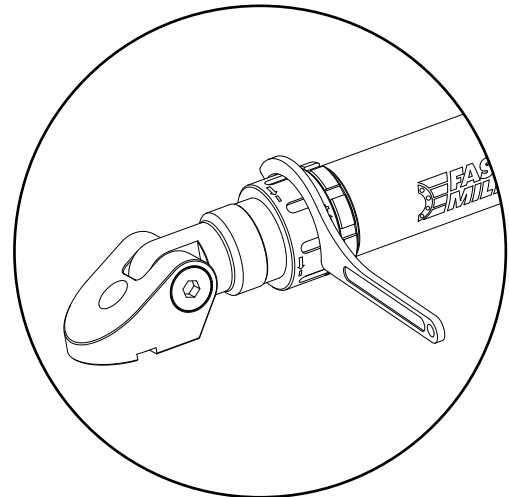
Third clamping point set

A third clamping point for roughing, finishing and drilling operations of pieces fixed in a vertical position. Thanks to its rigid telescopic system and its additional modular extensions, the third clamping point supports workpieces and opposes vibrations and flexures caused by machining operations, thus avoiding the use of expensive, heavy and bulky fastening brackets. The third clamping point can be fixed directly on plates or workpieces by means of standard TCEI screws or FAST MILL® coordinate modules/risers. Alternatively, it can be fixed on the machine's T-slots. In addition to fixing, thanks to its efficient fine adjustment system, it can be adjusted for the purposes of thrust or traction to ensure verticality of workpieces before their machining.

CODE	DIMENSION mm (in)
FM46191600	630/820 (24,80"/32,28")

SET CONFIGURATION

Third clamping point	1 piece
C-hook spanner 92-95	1 piece
Bush Ø24-24 mm	2 pieces
Cylindrical head hexagon socket screw 12.9 (DIN912)	2 pieces

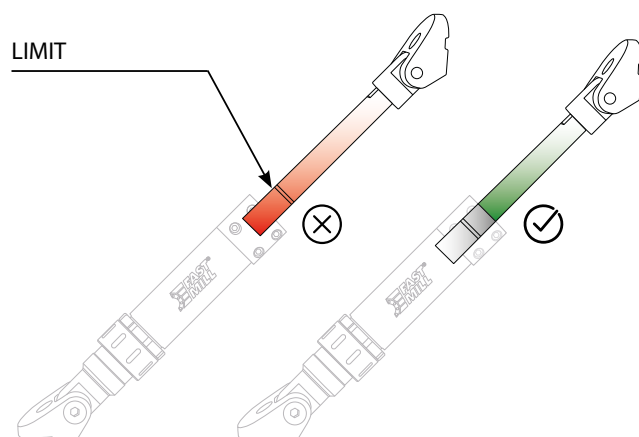
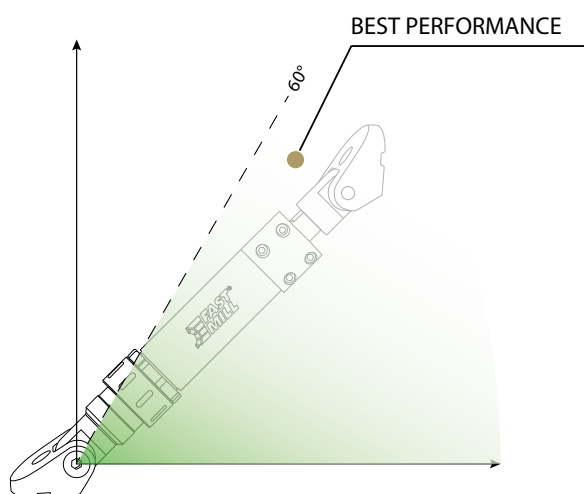


C-HOOK SPANNER 92-95
APPLICATION

Extension

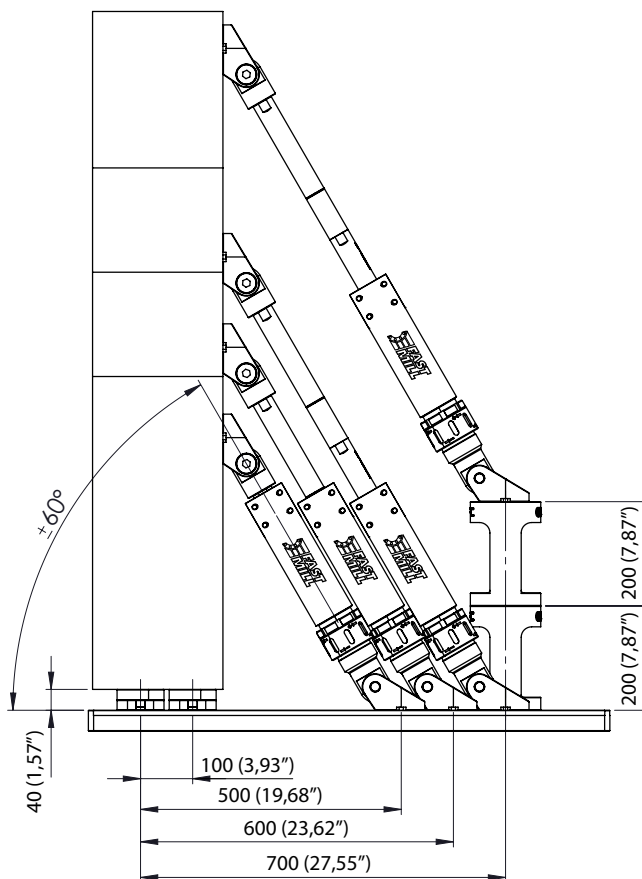
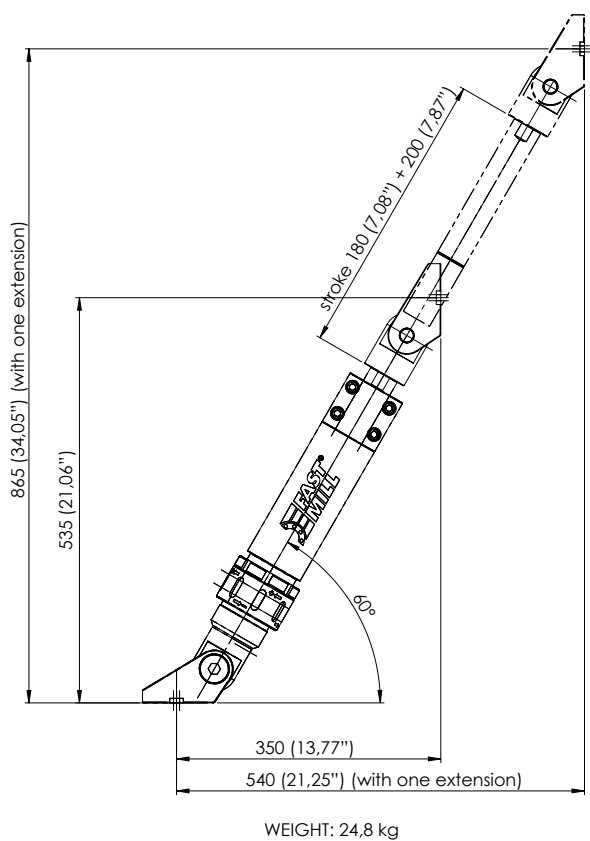
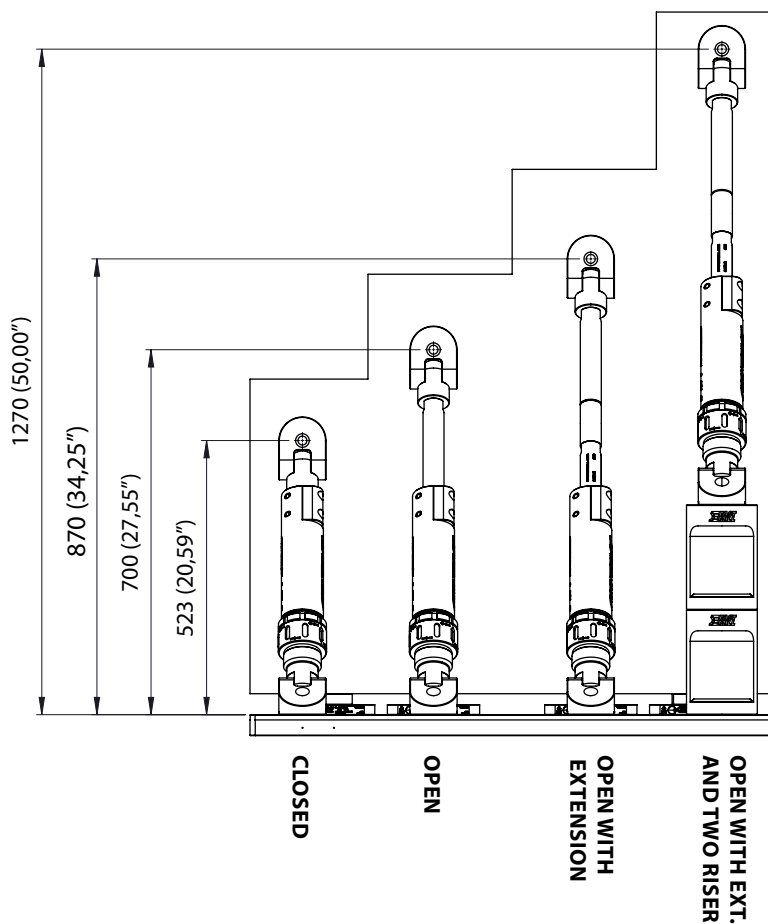
CODE	DIMENSION mm (in)
FM46191650	+ 200 (7,87")

Not included in the set.

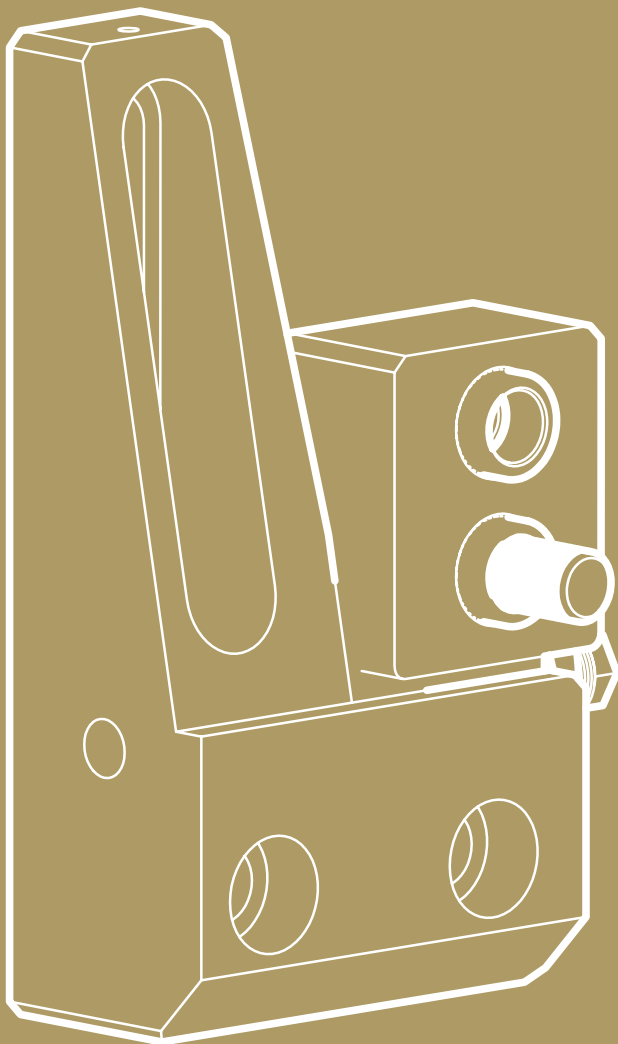
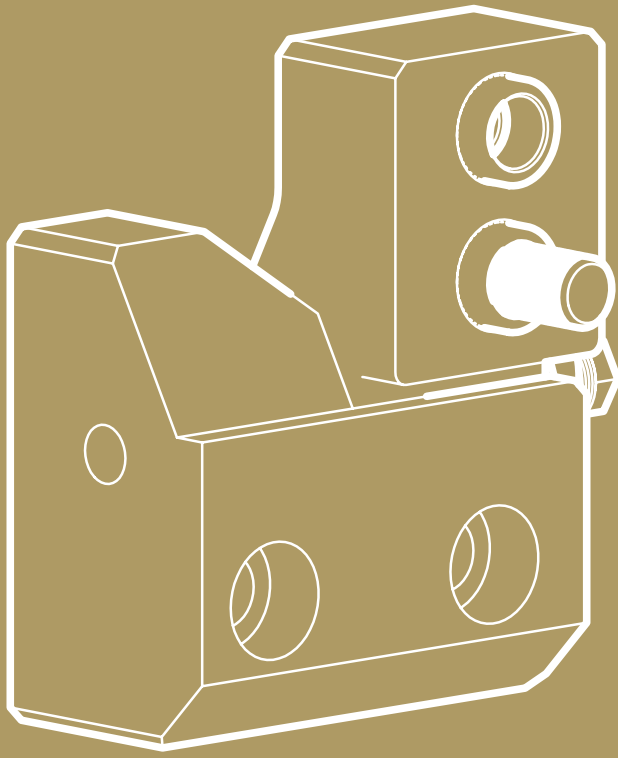




Third clamping point mm (in)



MODULES	PINS AND BUSHES	RISERS	SPACERS	THIRD POINT	VERTICAL CLAMPING	MINI RANGE	TILTING	FMZ	PLATES	CUBES	CLAMPS	ACCESSORIES
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VERTICAL CLAMPING

MODULES
 PINS AND BUSHES
 RISERS
 SPACERS
 THIRD POINT
 VERTICAL CLAMPING
 MINI RANGE
 TILTING
 FMZ
 PLATES
 CUBES
 CLAMPS
 ACCESSORIES

Vertical clamping for HEAVY PARTS set

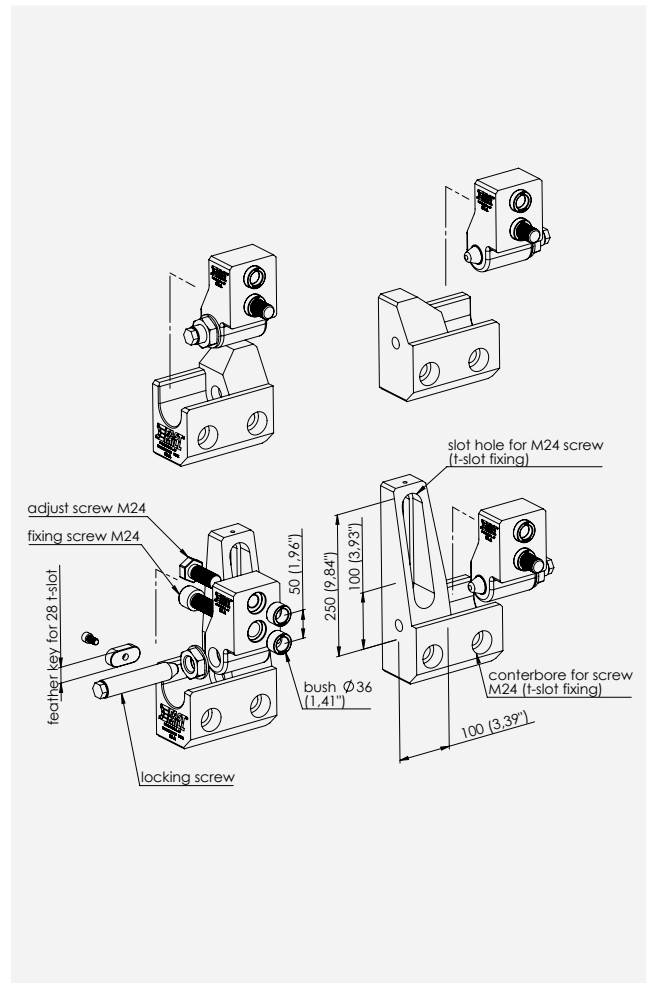


CODE

FMVCHP0024036

SET CONFIGURATION

Special bush $\varnothing 36-36$ mm h 20 mm	8 pieces
TE M24X60 UNI 5739-8,8	4 pieces
31X56 UNI 6592-69 washer	4 pieces
Feather key 28X16X60 DIN6885 C	4 pieces
M30 NUT UNI 5589 -8G	4 pieces
TCEI M24X80 UNI 5931-12,9 screw	4 pieces
TCEI M10X20 UNI 5931-12,9 screw	4 pieces

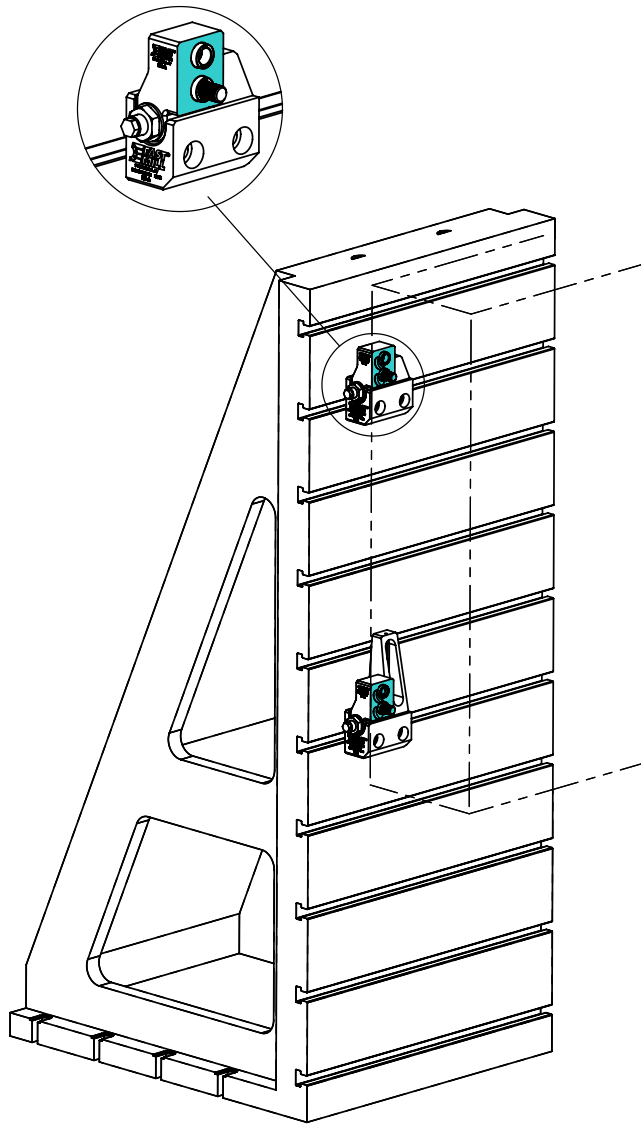


Setup example

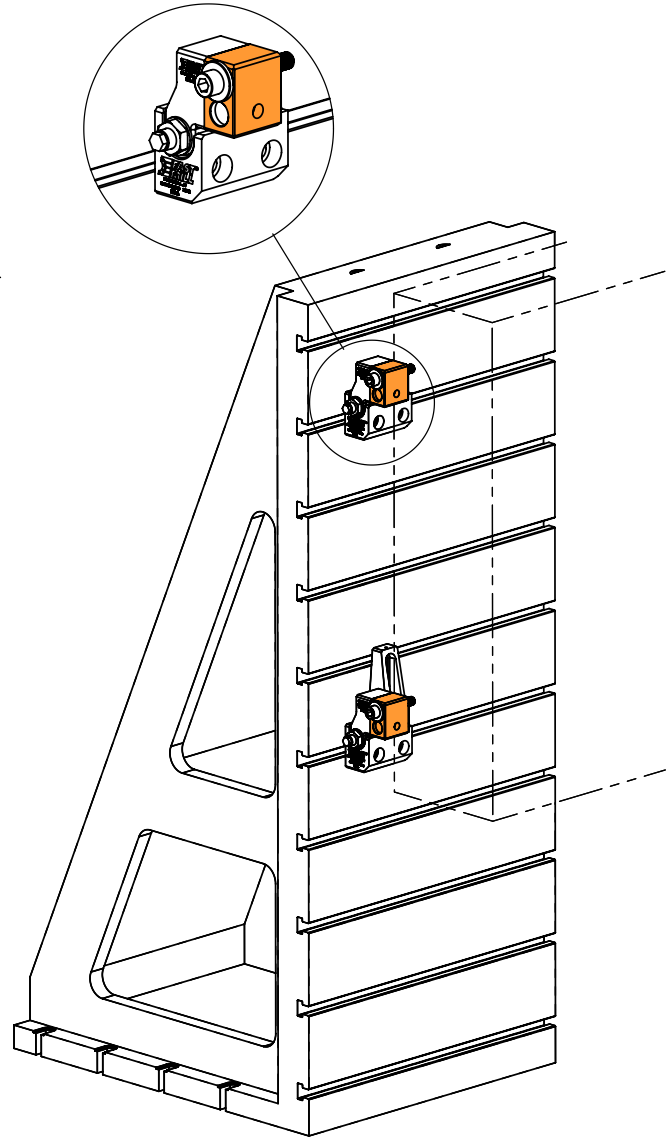


Setup example

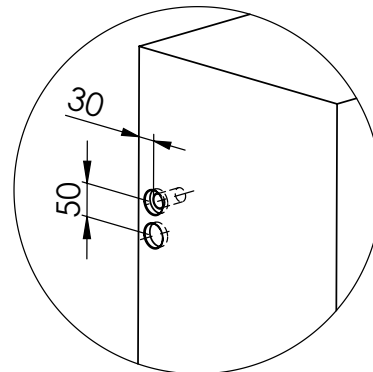
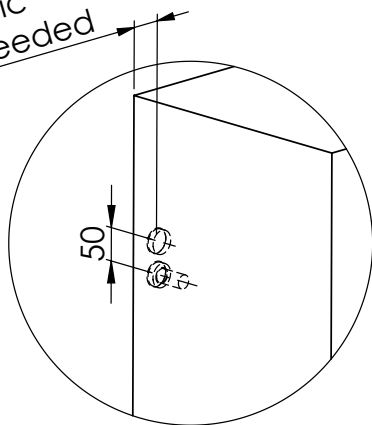
VERTICAL CLAMPING
BACK CONFIGURATION



VERTICAL CLAMPING
LATERAL CONFIGURATION



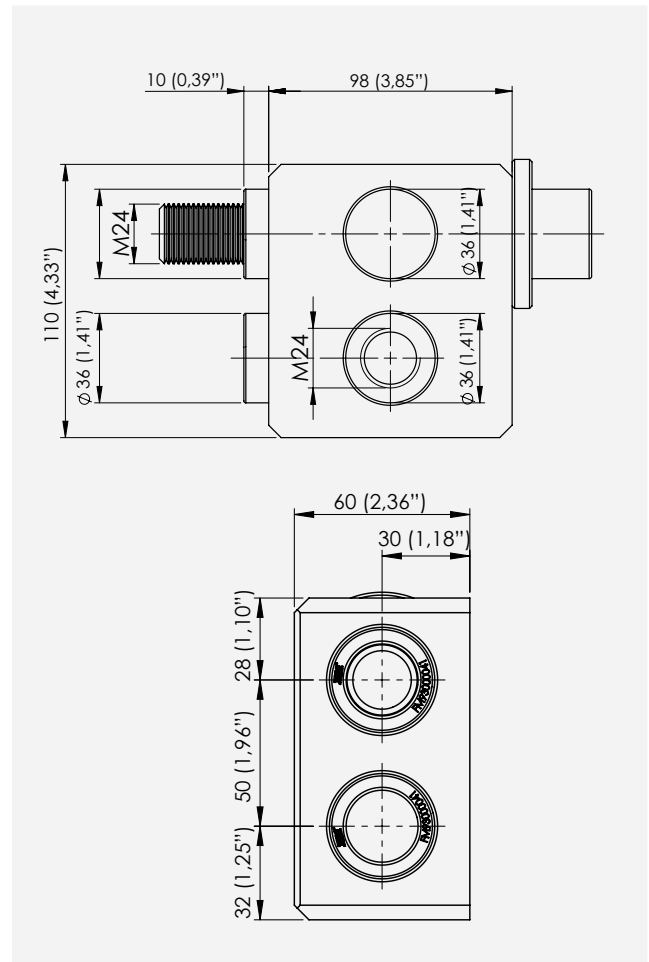
No specific
position is needed



- MODULES
- PINS AND BUSHES
- RISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
- FMZ
- PLATES
- CUBES
- CLAMPS
- ACCESSORIES

MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES

90° Lateral clamping accessories



CODE	DIMENSION	HEIGHT	WEIGHT
FMVCHPLATERAL	98x60 (3,85"x2,36")	110 (4,33")	2,7 (5,95 lbs)



Vertical clamping and POSITIONING set



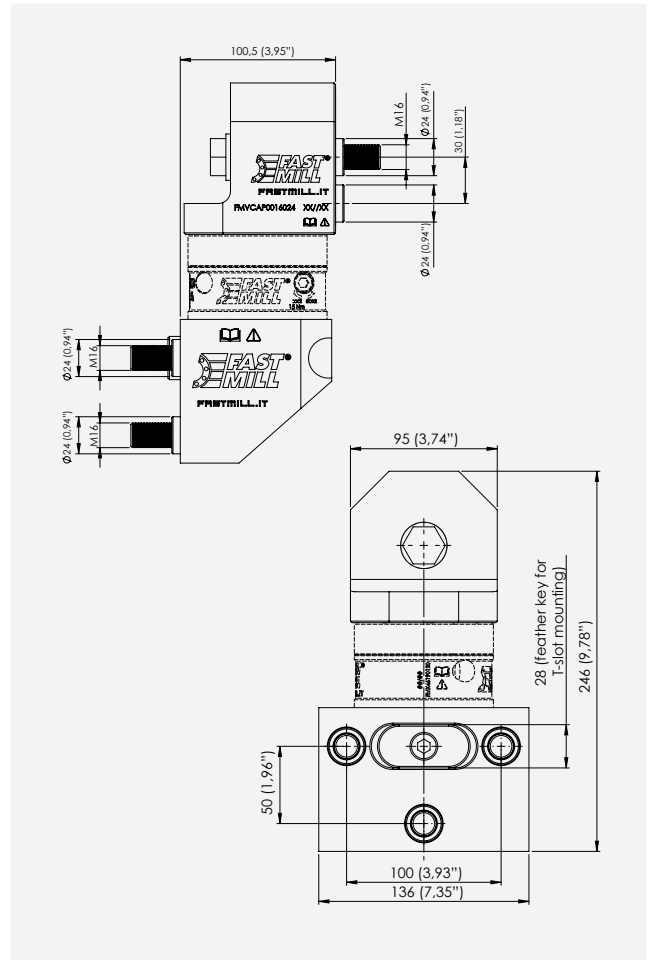
CODE

FMVCA0016024

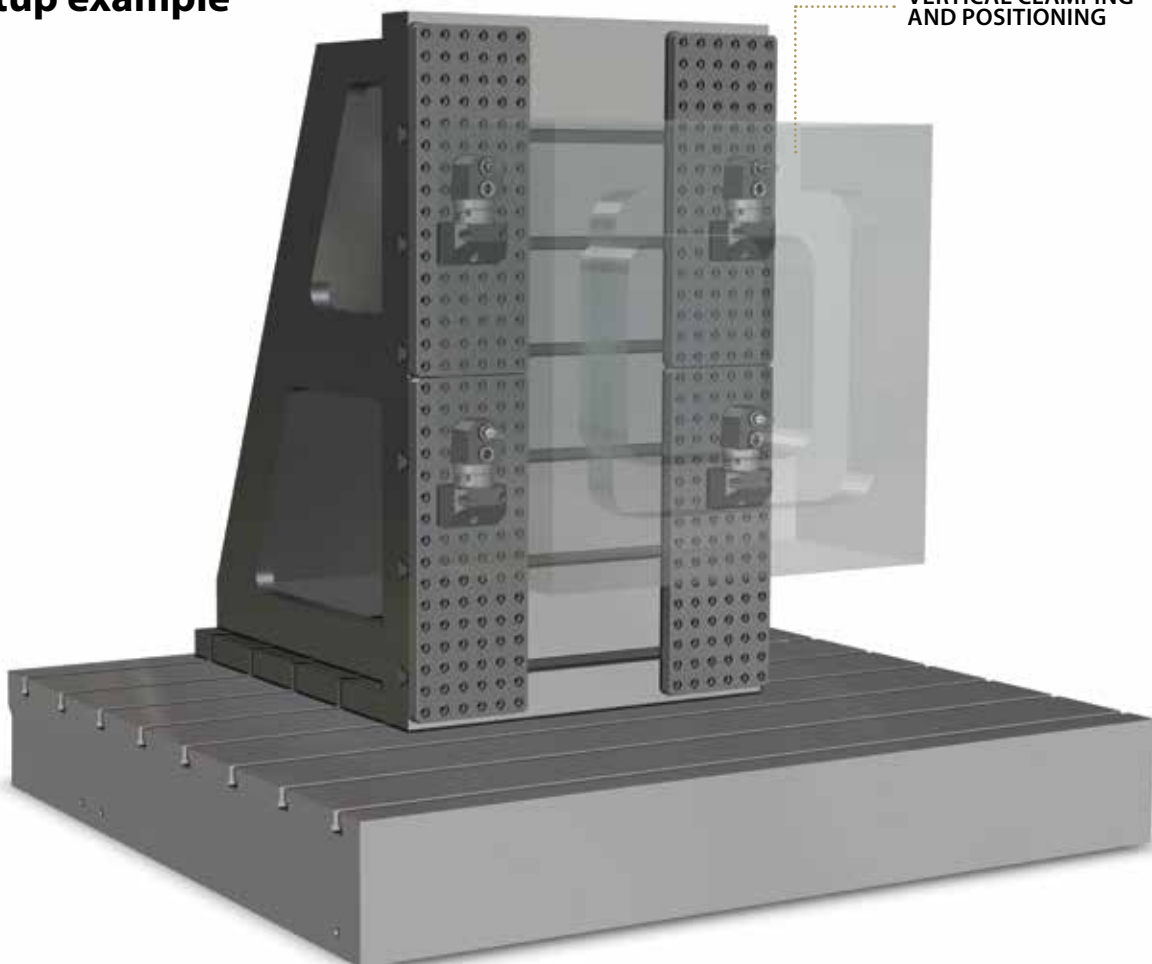
SET CONFIGURATION

- Bush Ø24-24 mm 6 pieces
- TCEI M16X60 mm UNI 5931-12,9 screw 3 pieces
- TCEI M16X40 mm UNI 5931-12,9 screw 1 piece
- TCEI M16X20 mm UNI 5931-12,9 screw 1 piece
- TE M16X100 mm UNI 5739-12,9 screw 1 piece
- Feather key 28X16X60 DIN6885 C 1 piece
- 17x30 UNI 6592-69 washer 1 piece

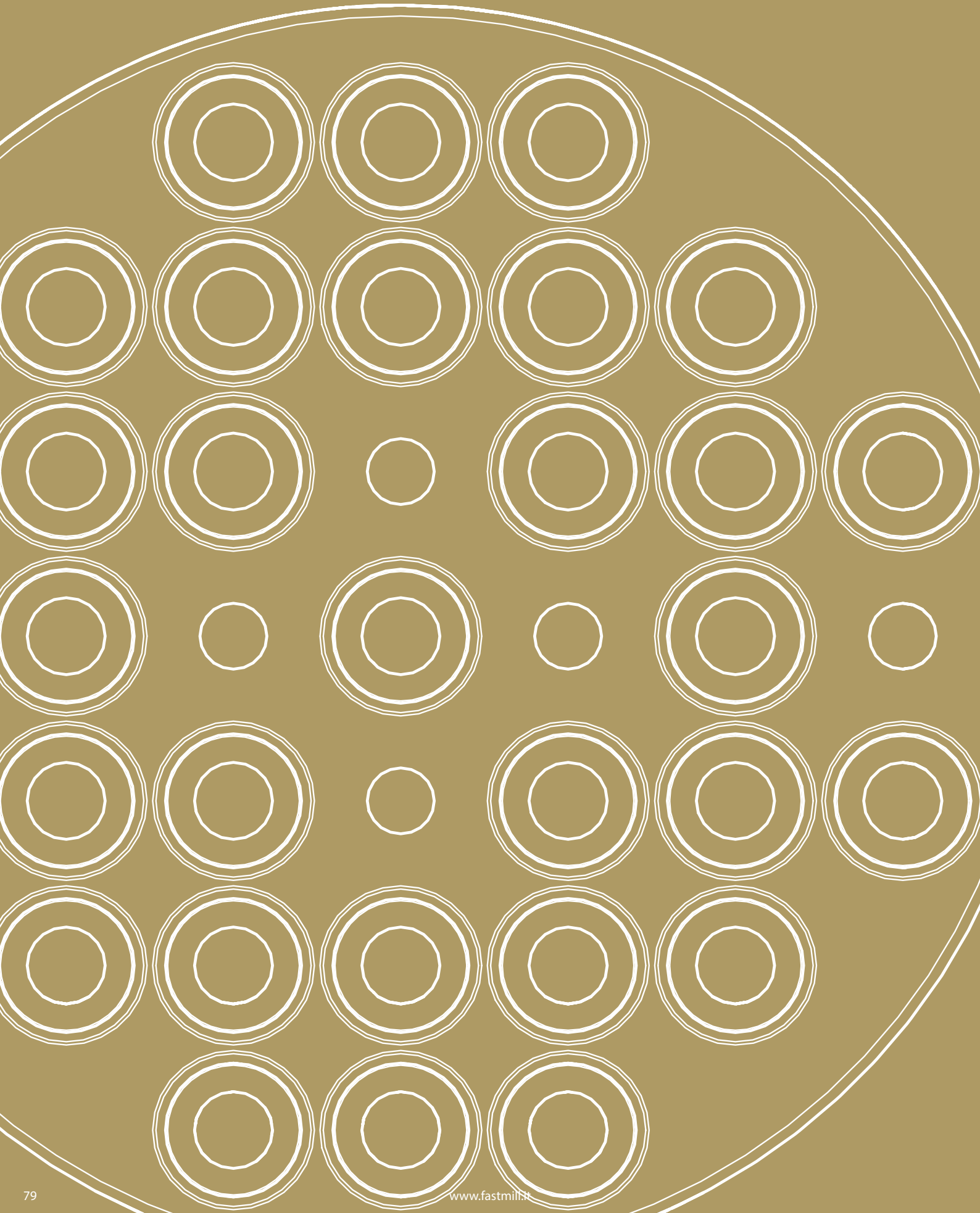
Module and pin not included.



Setup example



- MODULES
- PINS AND BUSHES
- RIISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING**
- MINI RANGE
- TILTING
- FMZ
- PLATES
- CUBES
- CLAMPS
- ACCESSORIES

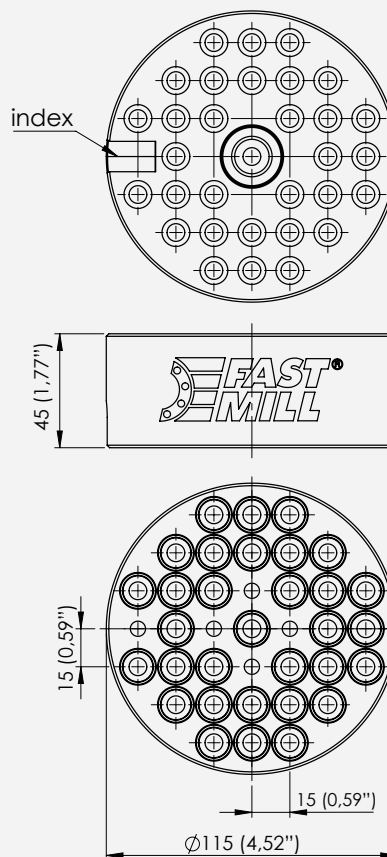




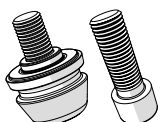
MINI RANGE

MODULES
 PINS AND BUSHES
 RISERS
 SPACERS
 THIRD POINT
 VERTICAL CLAMPING
 MINI RANGE
 TILTING
 FMZ
 PLATES
 CUBES
 CLAMPS
 ACCESSORIES

Pallet for index module

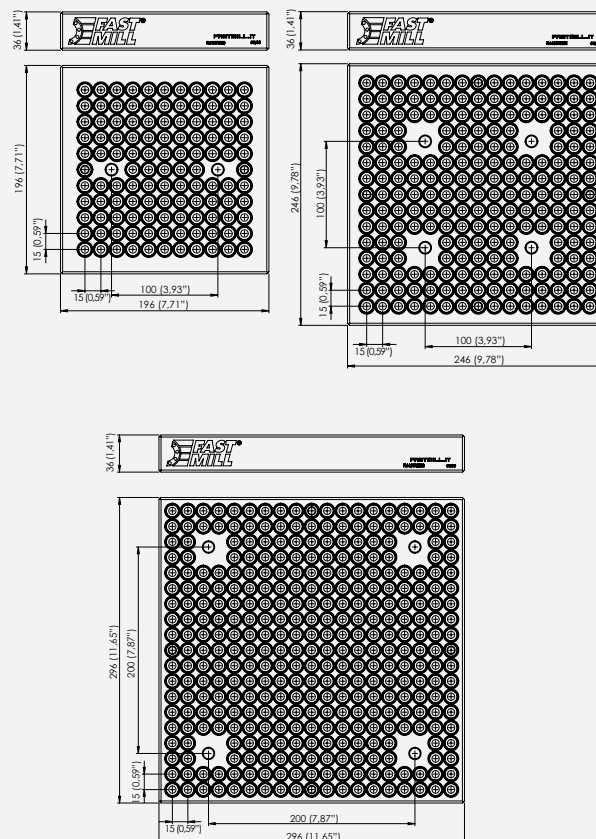


CODE	SCREW	Ø	HEIGHT	GRID
FM46190019	M6	115 (4,52")	45 (1,77")	15 (0,59")

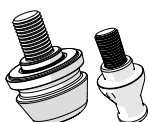


Required for assembly (not included):
 No. 1 Special drilled screw code **FM46190018**.
 No. 1 Male pin code **FM46191142** at page 45.

Pallet M6



CODE	SCREW	BXB	HEIGHT	GRID	XxY
FM46195020	M6	196x196 (7,71"x7,71")	36 (1,41")	15 (0,59")	100x0 (3,93"x0)
FM46195021 *	M6	246x246 (9,68"x9,68")	36 (1,41")	15 (0,59")	100x100 (3,93"x 3,93")
FM46195022 *	M6	296x296 (11,65"x11,65")	36 (1,41")	15 (0,59")	200x200 (7,87"x 7,87")



Required for assembly:
 No. 2 Male pin **M12 Ø20** at page 45.
 No. 4 Male pin **M12 Ø20 (*)** at page 45.

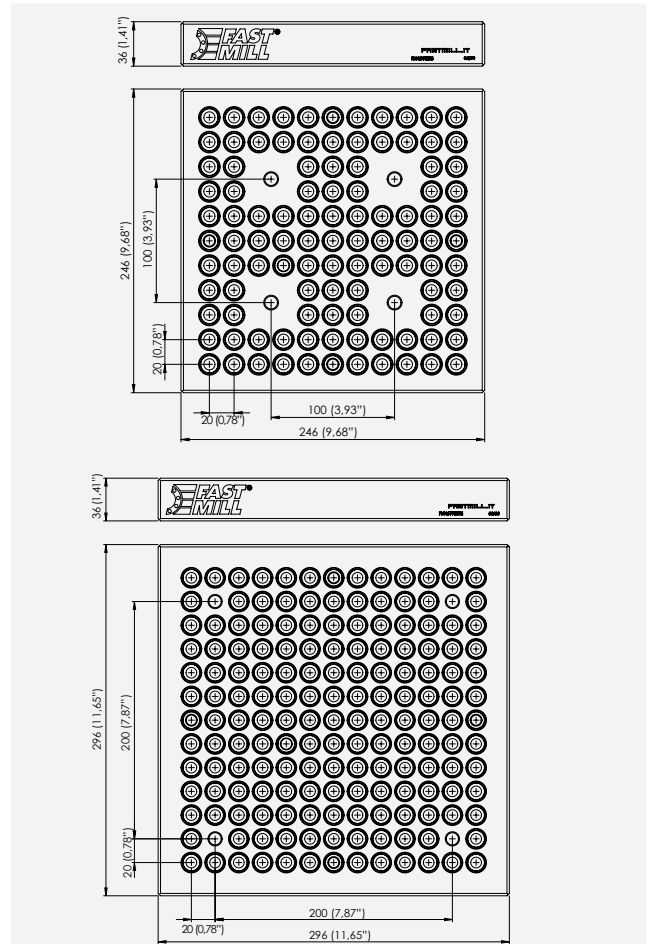
Pallet M8



CODE	SCREW	BXB	HEIGHT	GRID	XxY
FM46195025	M8	246x246 (9,68"x9,68")	36 (1,41")	20 (0,78")	100x100 (3,93"x 3,93")
FM46195026	M8	296x296 (11,65"x11,65")	36 (1,41")	20 (0,78")	200x200 (7,87"x 7,87")



Required for assembly:
No. 4 Male pin **M12 Ø20** at page 45.



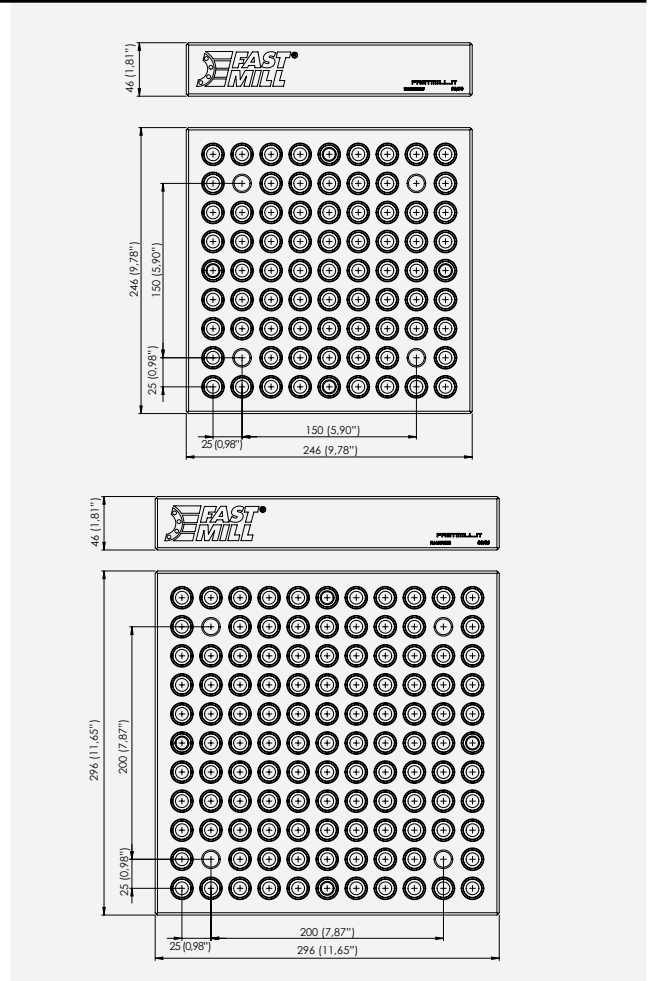
Pallet M10



CODE	SCREW	BXB	HEIGHT	GRID	XxY
FM46195029	M10	246x246 (9,68"x9,68")	46 (1,81")	25 (0,98")	150x150 (5,90"x 3,93")
FM46195030	M10	296x296 (11,65"x11,65")	46 (1,81")	25 (0,98")	200x200 (7,87"x 7,87")

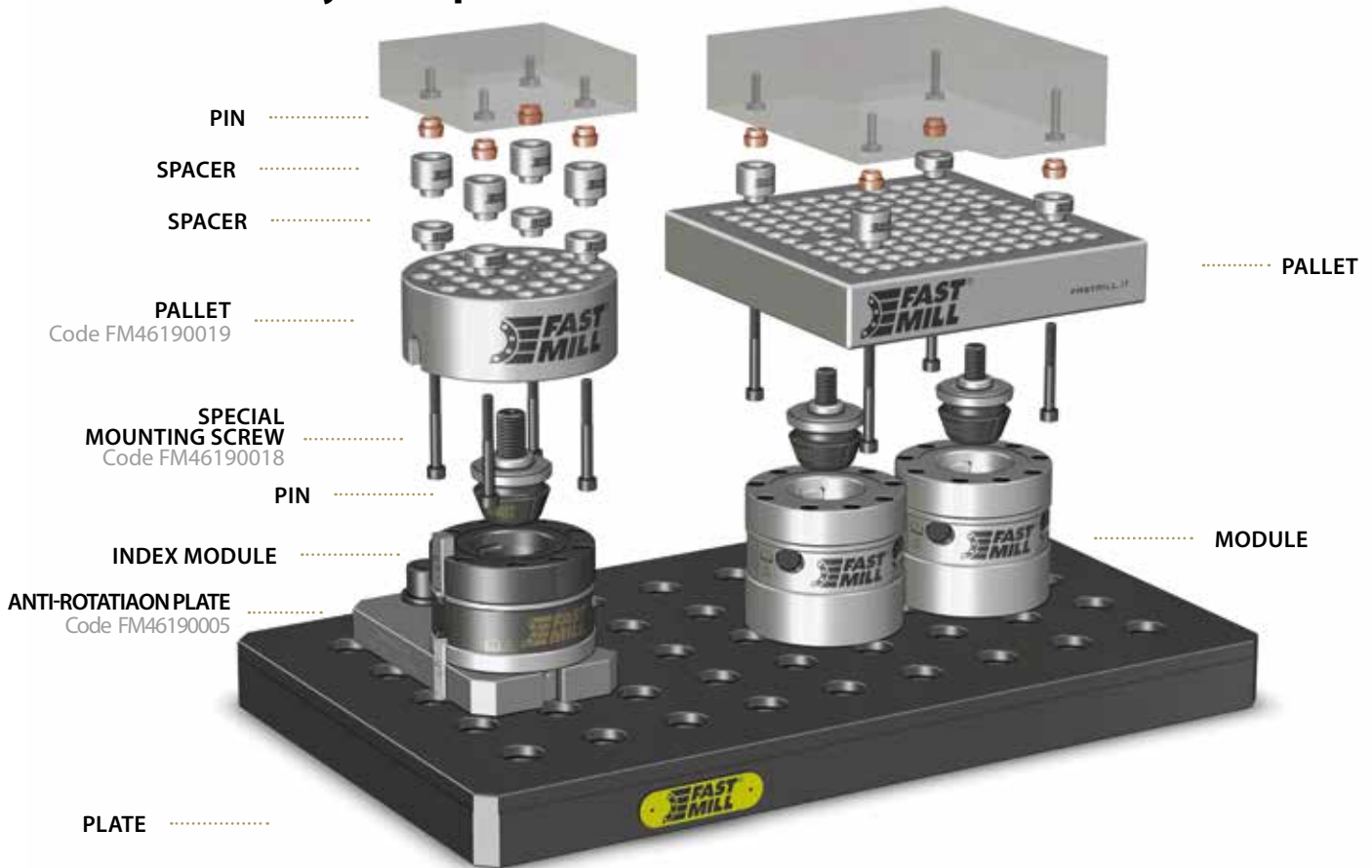


Required for assembly:
No. 4 Male pin **M16 Ø24** at page 45.

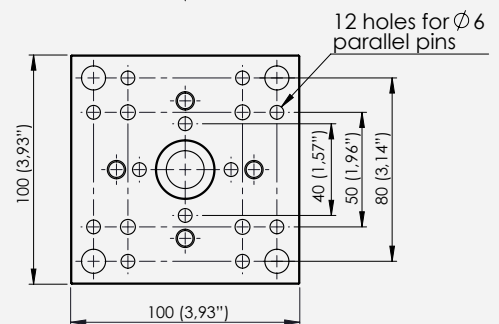
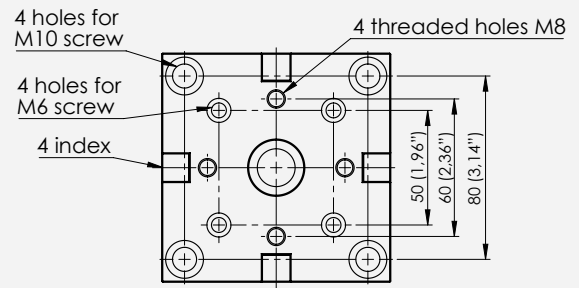


MODULES
 PINS AND BUSHES
 RISERS
 SPACERS
 THIRD POINT
 VERTICAL CLAMPING
 MINI RANGE
 TILTING
 FMZ
 PLATES
 CUBES
 CLAMPS
 ACCESSORIES

Pallet assembly example



Pallet for index module



CODE	SCREW	DIMENSION	HEIGHT
FM46190015	M6 - M8 - M10	100x100 (3,93"x3,93")	30 (1,18")



Required for assembly (not included):
 No. 1 Female pin code **FM46191242** at page 48.

Coated Pin



CODE	SCREW	Ø
------	-------	---

FM46194015	M6	10 (0,39")
------------	----	------------

FM46194010	M6	11 (0,43")
------------	----	------------

CODE	SCREW	Ø
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FM46194025	M8	12 (0,47")
------------	----	------------

FM46194020	M8	14 (0,55")
------------	----	------------

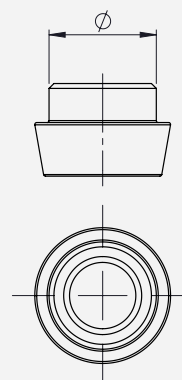
CODE	SCREW	Ø
------	-------	---

FM46194035	M10	14 (0,55")
------------	-----	------------

FM46194030	M10	16 (0,62")
------------	-----	------------



Related extractor adapter at page 124.



Spacer



CODE	SCREW	Ø	HEIGHT
------	-------	---	--------

FM46194011	M6	22 (0,86")	8 (0,31")
------------	----	------------	-----------

FM46194012	M6	22 (0,86")	12 (0,47")
------------	----	------------	------------

FM46194013	M6	22 (0,86")	16 (0,62")
------------	----	------------	------------

CODE	SCREW	Ø	HEIGHT
------	-------	---	--------

FM46194021	M8	25 (0,98")	10 (0,39")
------------	----	------------	------------

FM46194022	M8	25 (0,98")	15 (0,59")
------------	----	------------	------------

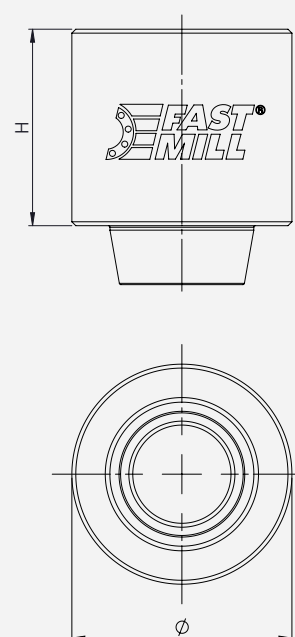
FM46194023	M8	25 (0,98")	20 (0,78")
------------	----	------------	------------

CODE	SCREW	Ø	HEIGHT
------	-------	---	--------

FM46194031	M10	28 (1,10")	15 (0,59")
------------	-----	------------	------------

FM46194032	M10	28 (1,10")	25 (0,98")
------------	-----	------------	------------

FM46194033	M10	28 (1,10")	35 (1,37")
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MODULES

PINS AND
BUSHES

RISERS

SPACERS

THIRD POINT

VERTICAL
CLAMPING

MINI RANGE

TILTING

FMZ

PLATES

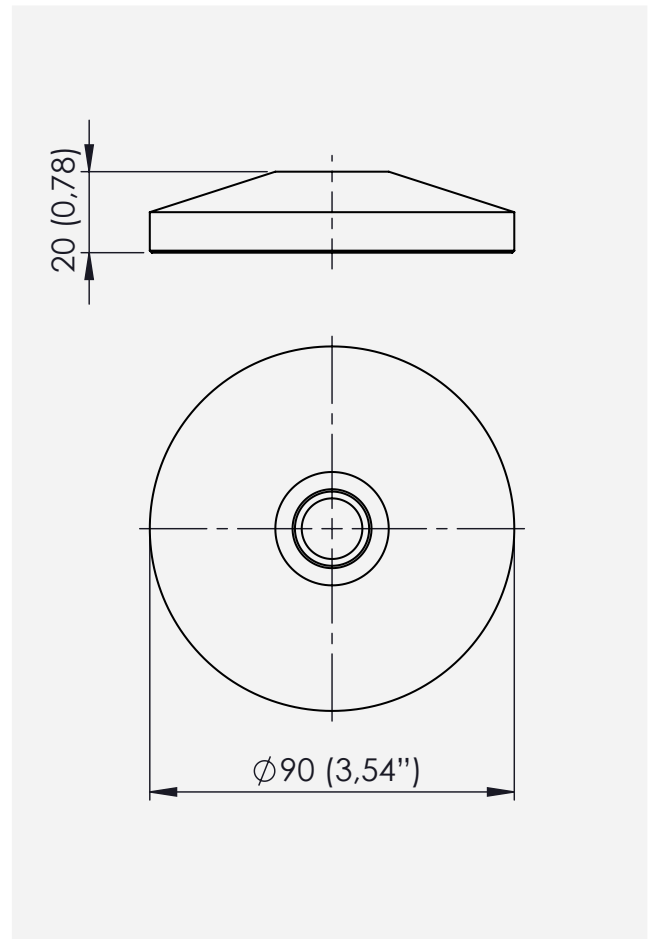
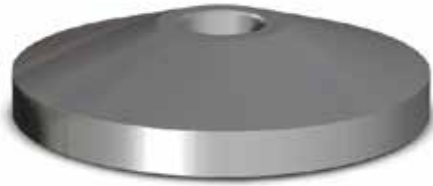
CUBES

CLAMPS

ACCESSORIES



Adapter for module

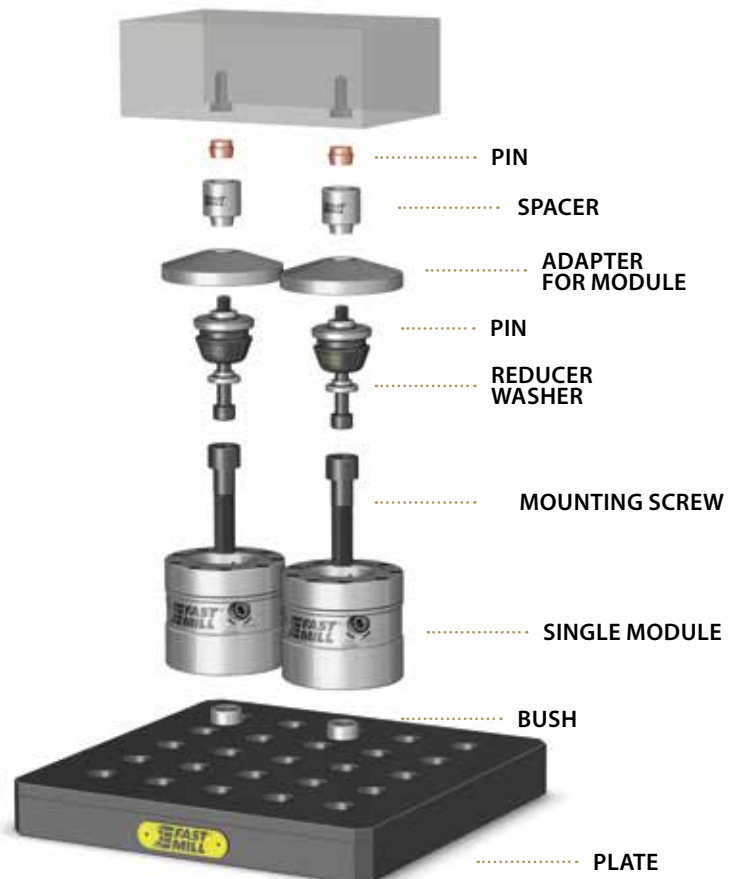


CODE	SCREW	\varnothing	HEIGHT
FM46194000	M6	90 (3,54")	20 (0,78")

CODE	SCREW	\varnothing	HEIGHT
FM46194003	M8	90 (3,54")	20 (0,78")

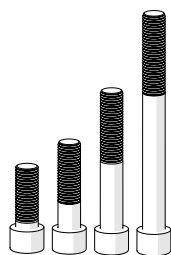
CODE	SCREW	\varnothing	HEIGHT
FM46194006	M10	90 (3,54")	20 (0,78")

Adapter for module assembly example

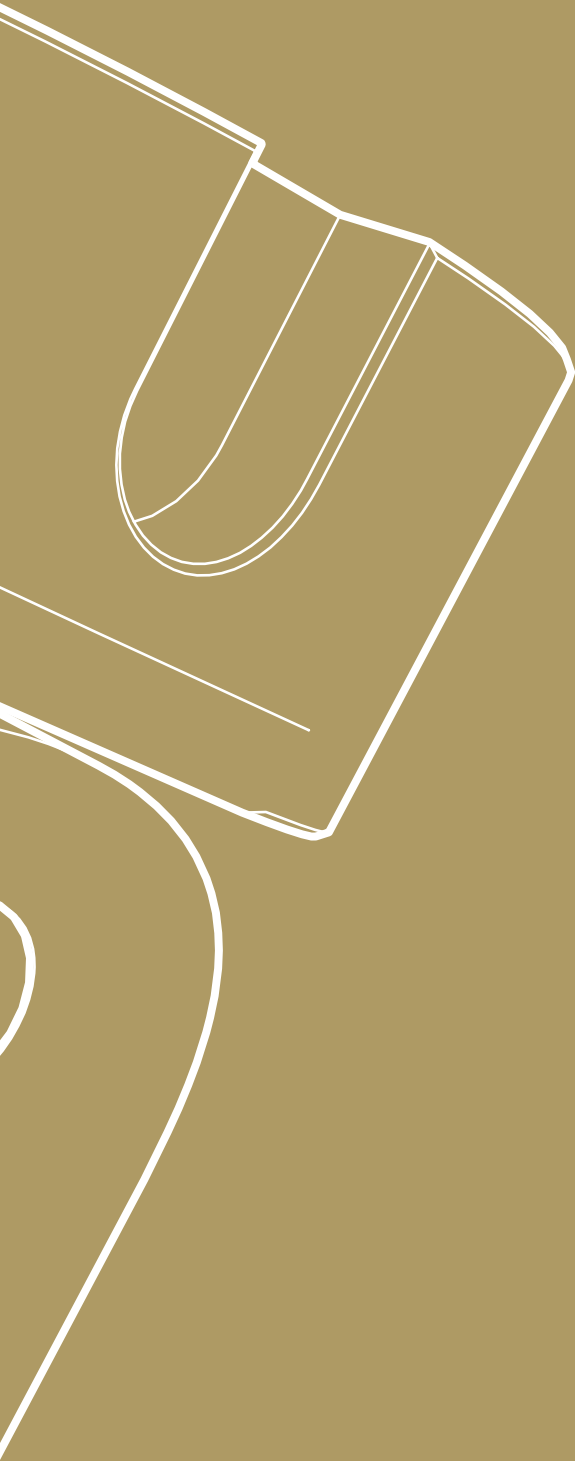


TECHNICAL TIPS

In the whole range of FAST MILL® modules you can use standard 12.9 (DIN912) screws from M6 to M10 or higher of different heights for the connection of the pieces, to the pallets and to the spacers.



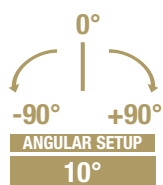




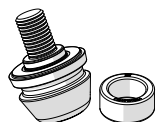
TILTING



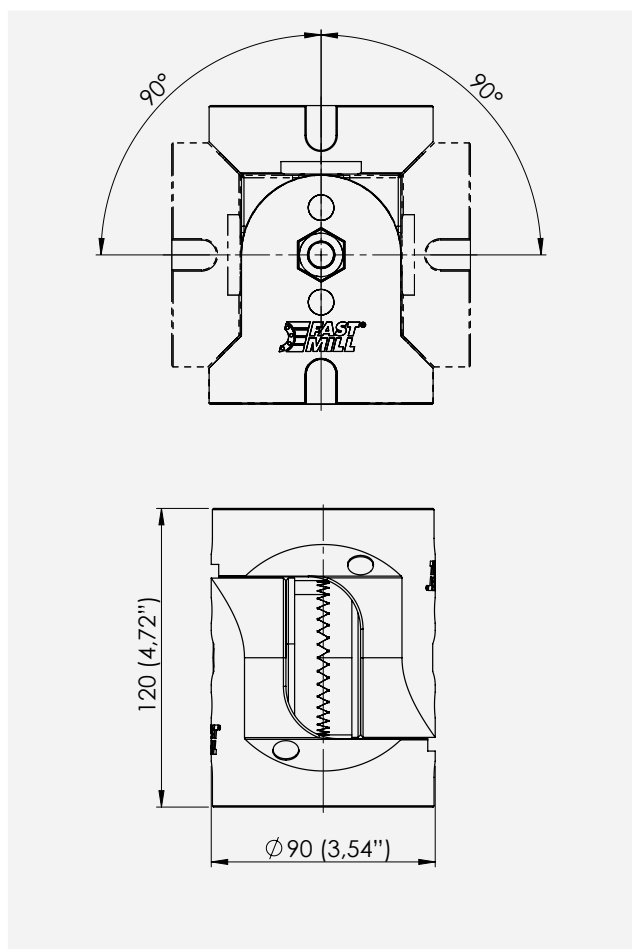
Tilting module Ø90 with 10° hirth



CODE	Ø	HEIGHT	WEIGHT
FMTMSS1090120	90 (3,54")	120 (4,72")	4,8 (10,58 lbs)



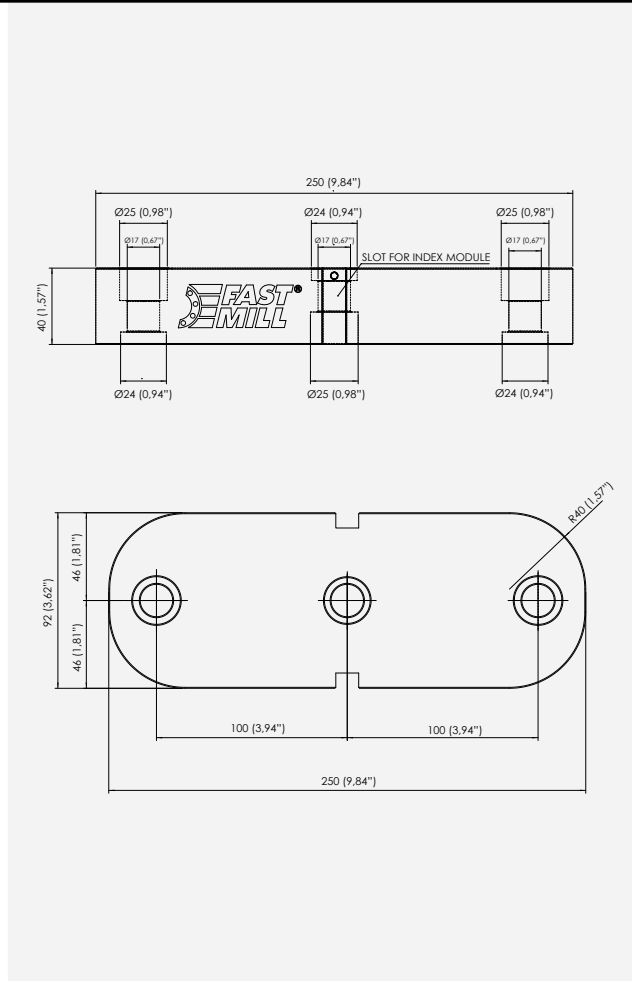
Related pins and bushes at page 42.

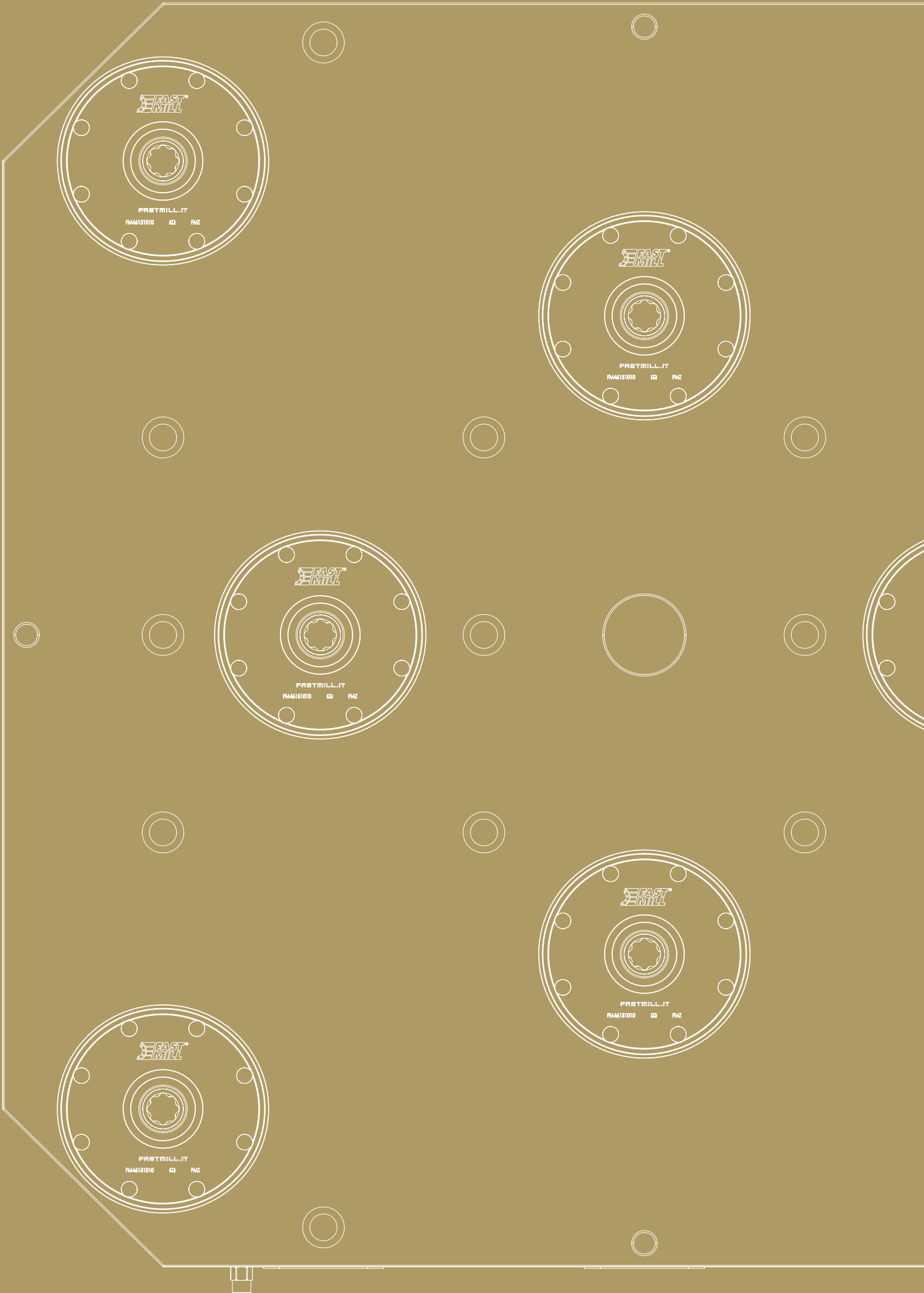


Base plate for tilting module



CODE	DIMENSION	HEIGHT	WEIGHT
FMTMSS1090C06	250x92 (9,84"x3,62")	40 (1,57")	5,1 (11,24 lbs)







FAST MILL ZERO

MODULES
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 ACCESSORIES

FMZ pneumatic module

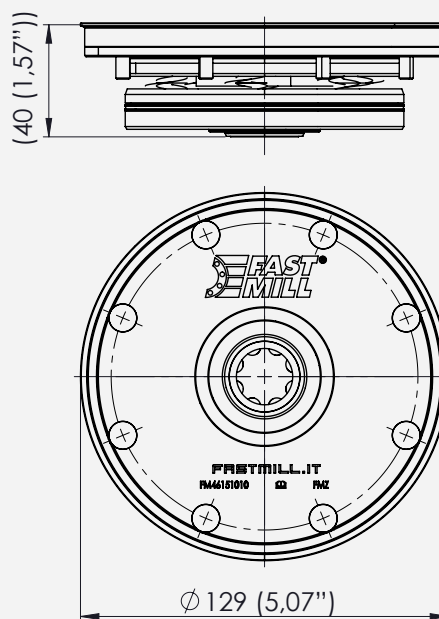


Pneumatic module FMZ with NBR seals.

TECHNICAL INFORMATION

Clamping force (by springs)	12500 N (2,800 lbs)
Repetitive accuracy	≤ 0,005 mm (0,00019")
Pneumatic pressure for opening	6 bar (87 psi)
Max. axial load	1000 kg (2,200 lbs)

CODE	DIAMETER	HEIGHT	WEIGHT kg
FM46151010	129 (5,07")	40 (1,57")	2 (4,40 lbs)



FMZ pneumatic index module

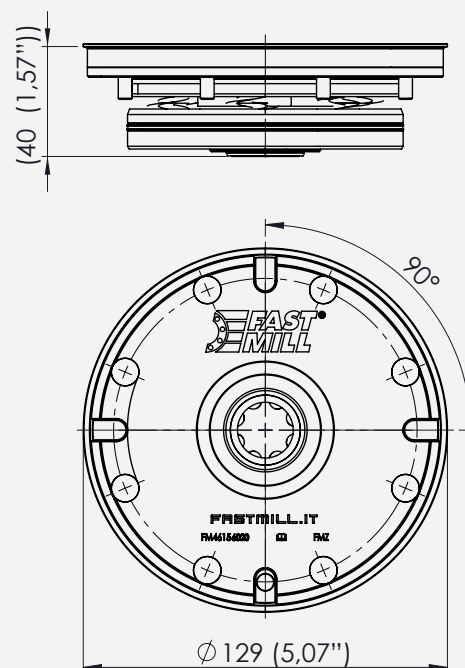


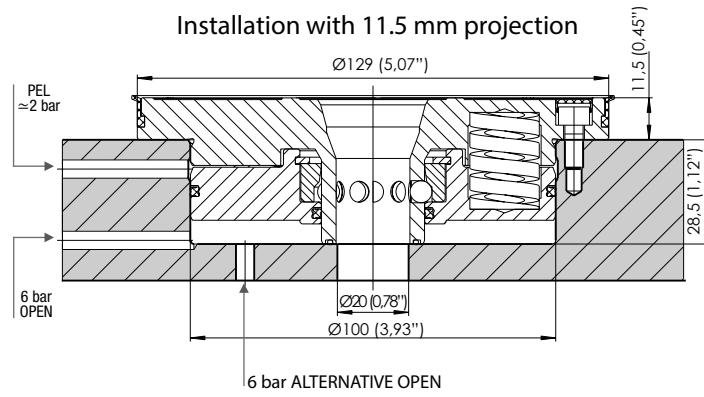
Pneumatic module FMZ with NBR seals.

TECHNICAL INFORMATION

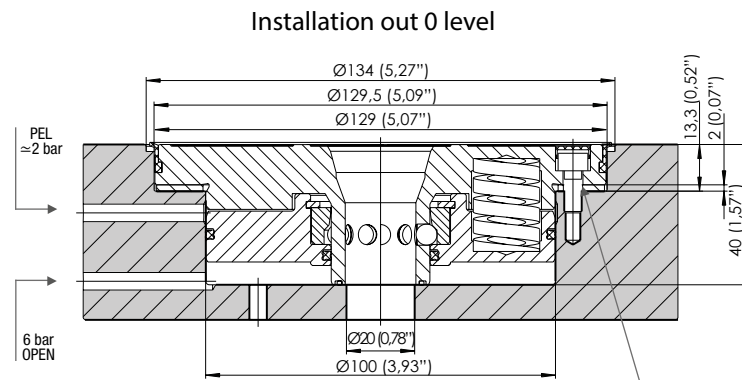
Clamping force (by springs)	12500 N (2,800 lbs)
Repetitive accuracy	≤ 0,005 mm (0,00019")
Pneumatic pressure for opening	6 bar (87 psi)
Max. axial load	1000 kg (2200 lbs)

CODE	DIAMETER	HEIGHT	WEIGHT
FM46151020	129 (5,07")	40 (1,57")	2 (4,40 lbs)



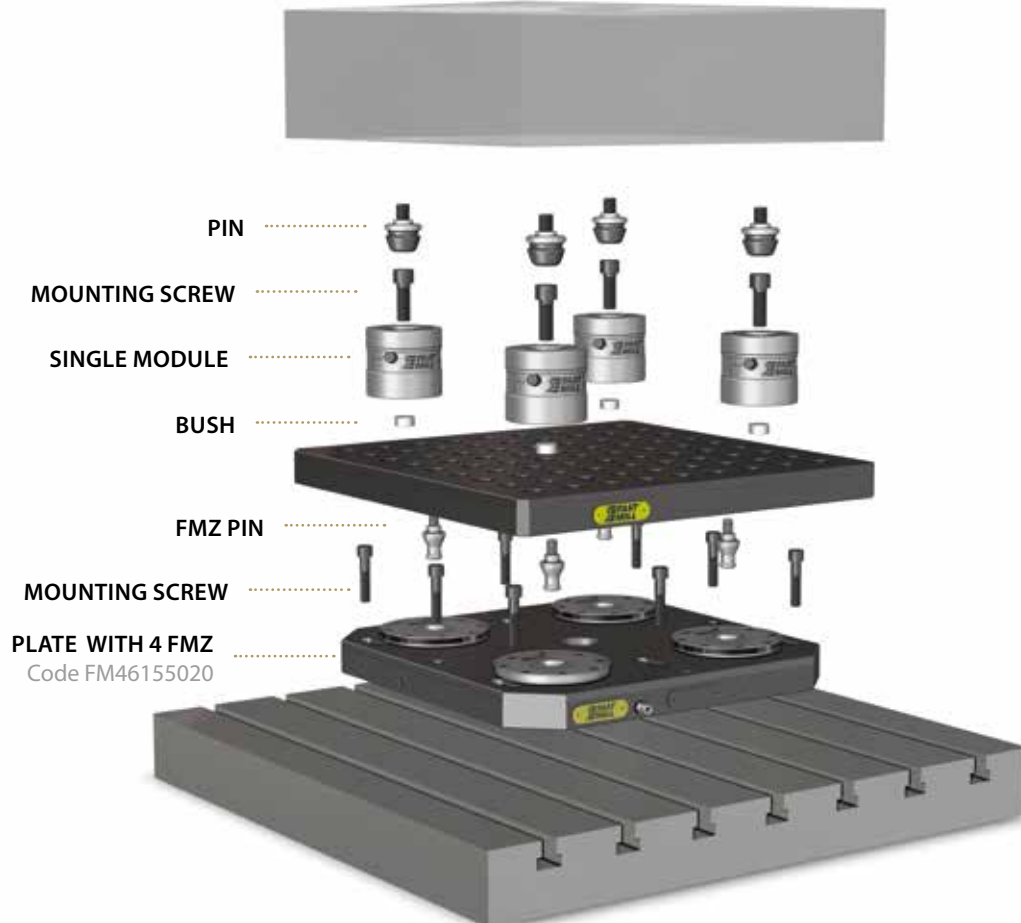


Detailed installation diagram upon request.



Calibration ring code **FM46152010**
for height adjustment

Plate with 4 FMZ modules assembly example



MODULES
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Pin M12 for FMZ



The screwing of the centering, compensating and clamping pin of the FMZ series can be done both, from above (with M12 screw) or from below (with M12 stud screw).

Centering pin (FM46153010 - FM46153070)

Clamping and centering pin (X-, Y-positioning), required for set-up. Includes one M12x30 DIN912 screw (strength class 10.9) and one M12x25 DIN939 stud screw (strength class 10.9).

Compensating pin (two-parts) (FM46153020)

Clamping and locating pin used for radial alignment when two or more clampers are used for the same fixture. Required for multiple clamber fixture. Includes one M12x30 DIN912 screw (strength class 10.9) and one M12x25 DIN939 stud screw (strength class 10.9).

Clamping pin (FM46153030)

Clamping pin without alignment. Used for clamping when three or more clampers are used for the same fixture. Required with three or more clampers. Includes one M12x30 screw (strength class 10.9) and one M12x25 (DIN938) stud screw (strength class 10.9)

CODE	M	Ø	TYPE
FM46153010	M12	18 (0,70")	A
FM46153020	M12	18 (0,70")	B
FM46153030	M12	-	C
FM46153070	M12	20 (0,78")	A

Pin M16 for FMZ



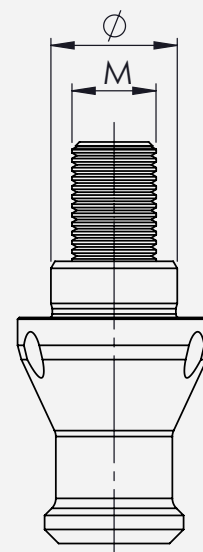
Integral Pin M16 type C (FM46153060)

Clamping and locating pin used for clamping when three or more clampers are used for one fixture.

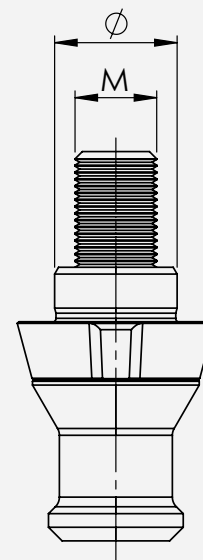
CODE	M	Ø	TYPE
FM46153060	M16	-	C

ON DEMAND

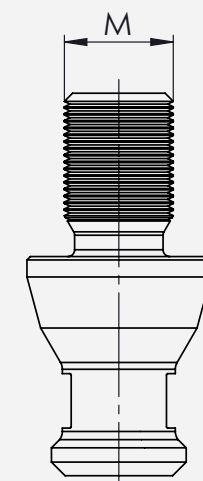
TYPE A



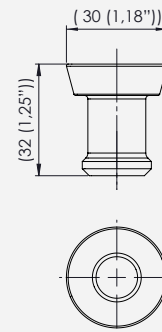
TYPE B



TYPE C

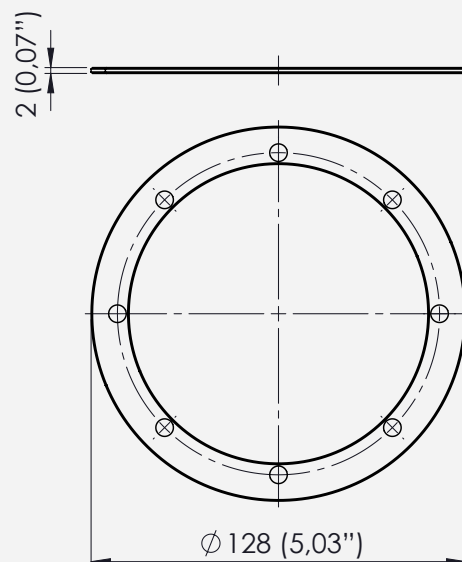


Cover for FMZ



CODE	DIAMETER	HEIGHT
FM46154020	30 (1,18'')	32 (1,25'')

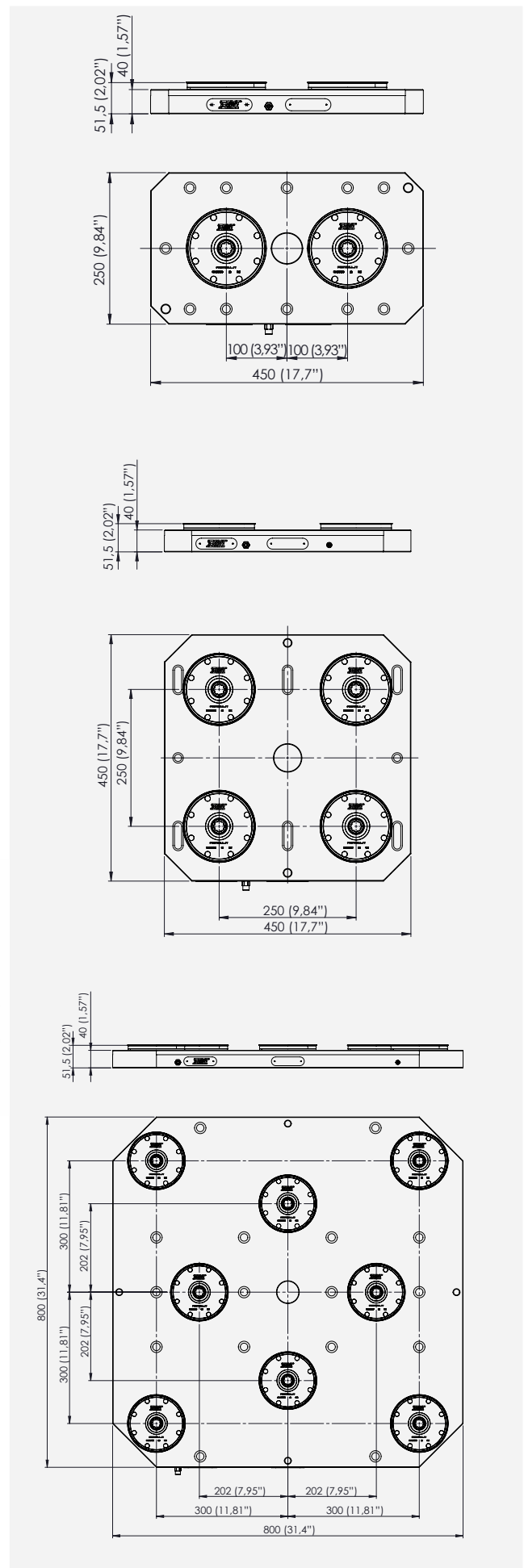
Calibration ring for vertical adjustment



CODE	DIAMETER	HEIGHT
FM46152010	128 (5,03'')	2 (0,07'')



Plate with pneumatic FMZ

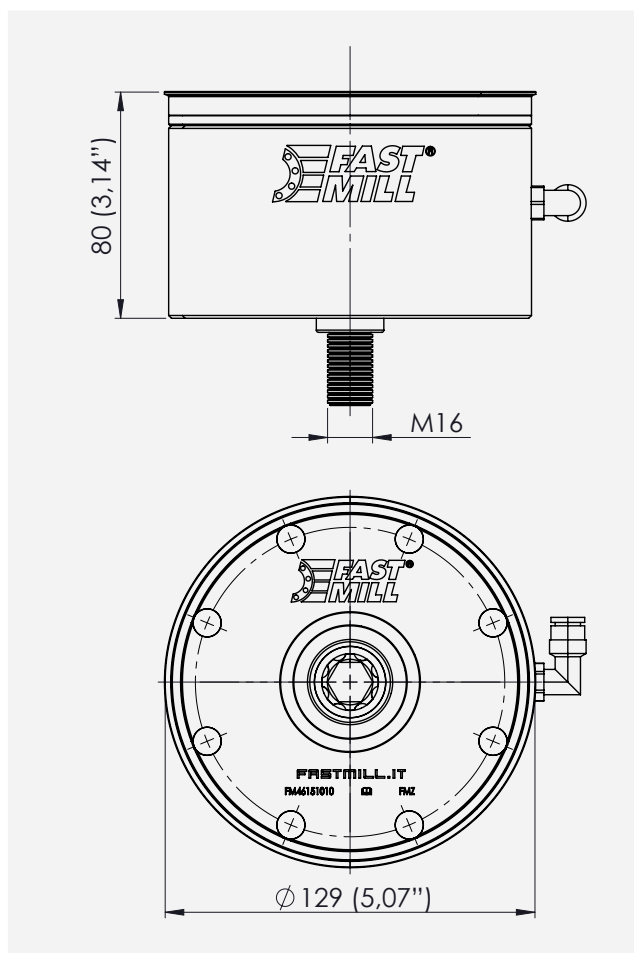


CODE	# FMZ	DIMENSION	HEIGHT	WEIGHT
FM46155010	2	450x250 (17,71"x9,84")	40 (1,57")	33,9 (74,7 lbs)
FM46155020	4	450x450 (17,71"x17,71")	40 (1,57")	60,8 (134 lbs)
FM46155030	6	800x400 (31,4"x15,74")	40 (1,57")	92,8 (204,5 lbs)
FM46155040	8	800x800 (31,4"x31,4")	40 (1,57")	194,0 (427,6 lbs)

- MODULES
- PINS AND BUSHES
- RIISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
- TILTING
- FMZ**
- PLATES
- CUBES
- CLAMPS
- ACCESSORIES

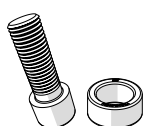


FMZ pneumatic single module for assembly on plate



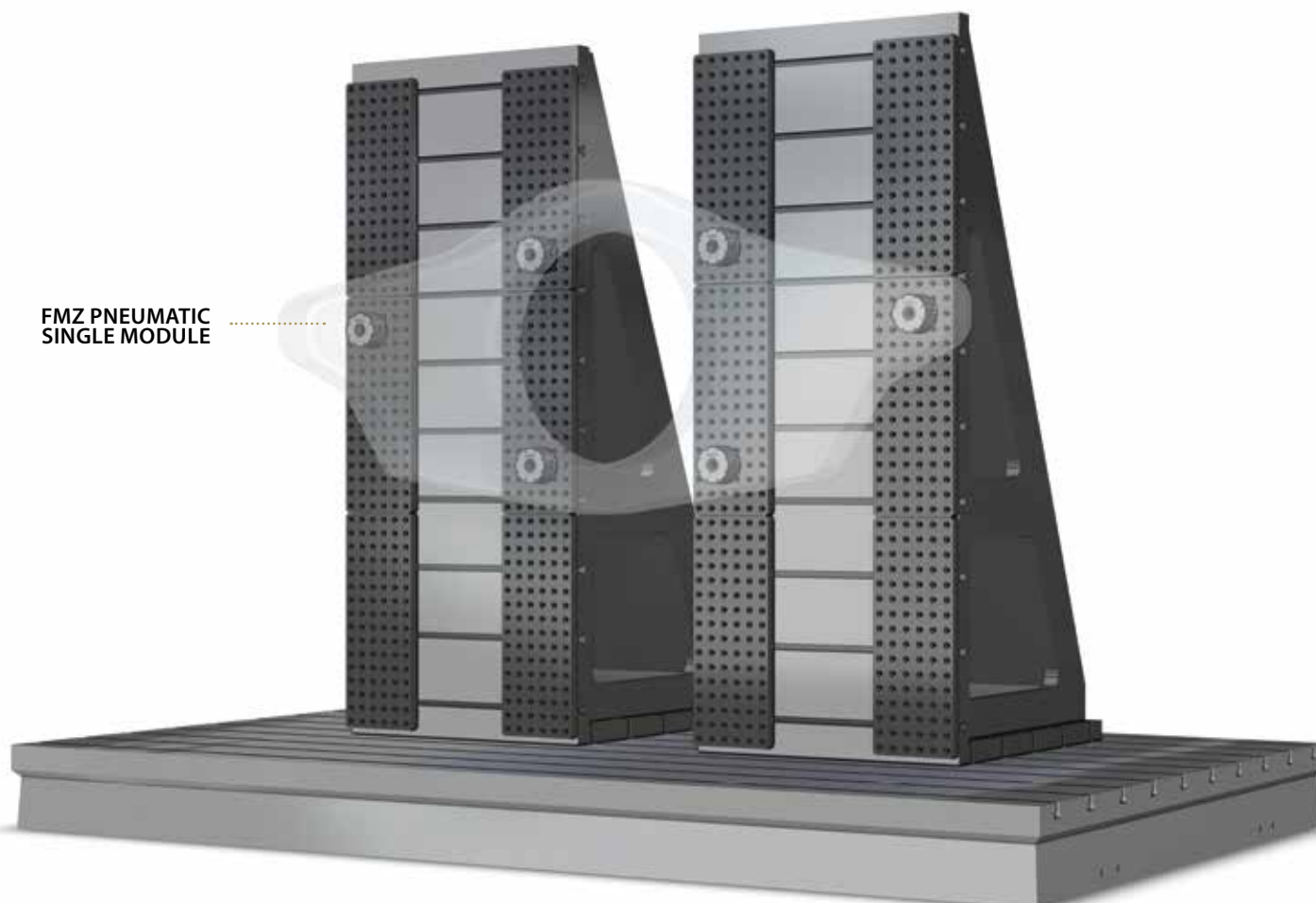
CODE	DIAMETER	HEIGHT	WEIGHT
FM46156010	129 (5,07")	80 (3,14")	7,3 (16 lbs)
FM46156020 *	129 (5,07")	80 (3,14")	7,3 (16 lbs)

* INDEX version.

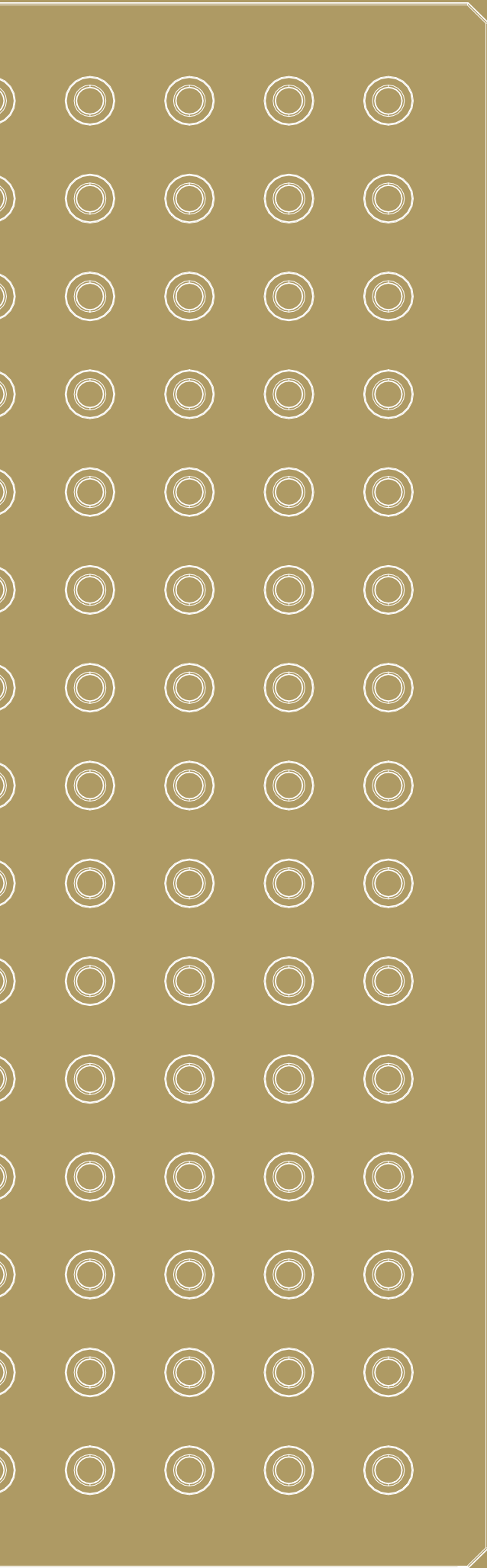


Provided with 12.9 (DIN912) M16x45 screw and bush Ø24 code **FM46190924**.

FMZ PNEUMATIC SINGLE MODULE



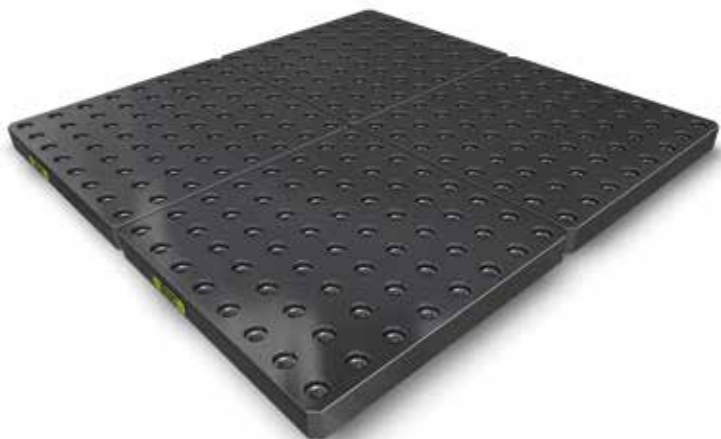
- MODULES
- PINS AND BUSHES
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- MINI RANGE
- TILTING
- FMZ
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- CUBES
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- ACCESSORIES



PLATES



Finished MODULAR plate



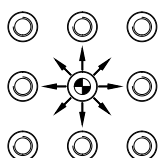
L x C	HEIGHT	GRID	Ø
ON DEMAND	40 (1,57")	50 (1,96")	24H



ON DEMAND

CODE	L x C	HEIGHT	GRID
FM46195201	600x400 (23,6"x15,7")	40 (1,57")	50 (1,96")
FM46195202	500x500 (19,6"x19,6")	40 (1,57")	50 (1,96")
FM46195203	600x500 (23,6"x19,6")	40 (1,57")	50 (1,96")
FM46195204	800x600 (31,4"x23,6")	40 (1,57")	50 (1,96")
FM46195205	1000x500 (39,3"x19,6")	40 (1,57")	50 (1,96")
FM46195206	1000x600 (39,3"x23,6")	40 (1,57")	50 (1,96")
FM46195207	1000x800 (39,3"x31,4")	40 (1,57")	50 (1,96")
FM46195208	1000x1000 (39,3"x39,3")	40 (1,57")	50 (1,96")
FM46195210	800x800 (31,4"x31,4")	40 (1,57")	50 (1,96")
FM46195223	800x400 (31,4"x15,7")	40 (1,57")	50 (1,96")

Grid 100 mm, alternative dimensions or custom solutions on demand.

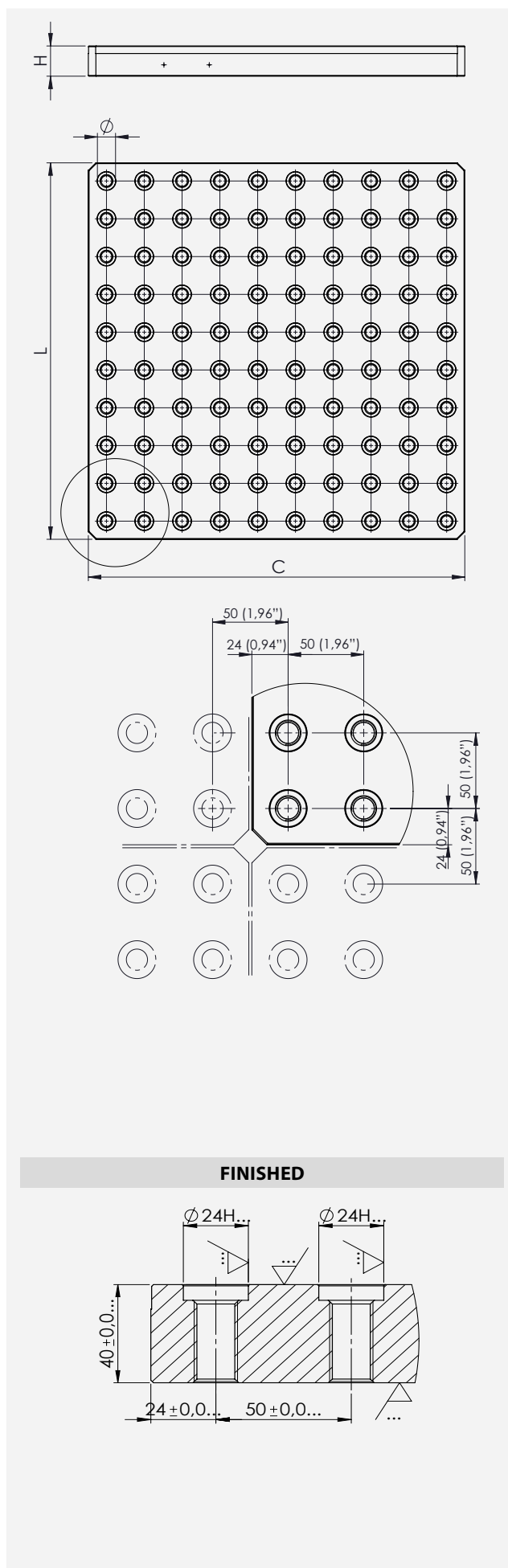


Position tolerance $\pm 0,00...$ on adjacent holes.

Available alphanumeric marking option for the hole grid according to customer specifications.



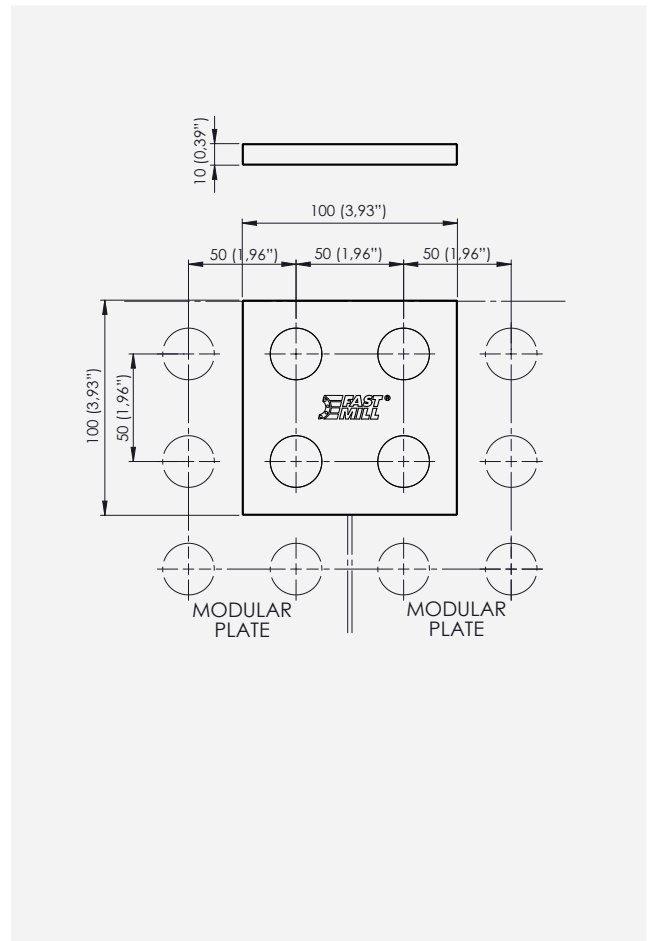
Related accessories at page 105.



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SPACERS
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ANGLE PLATES SOLUTIONS
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FMZ
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MODULES
PINS AND BUSHES
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THIRD POINT
ANGLE PLATES SOLUTIONS
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PLATES
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ACCESSORIES

Set for modular plate alignment

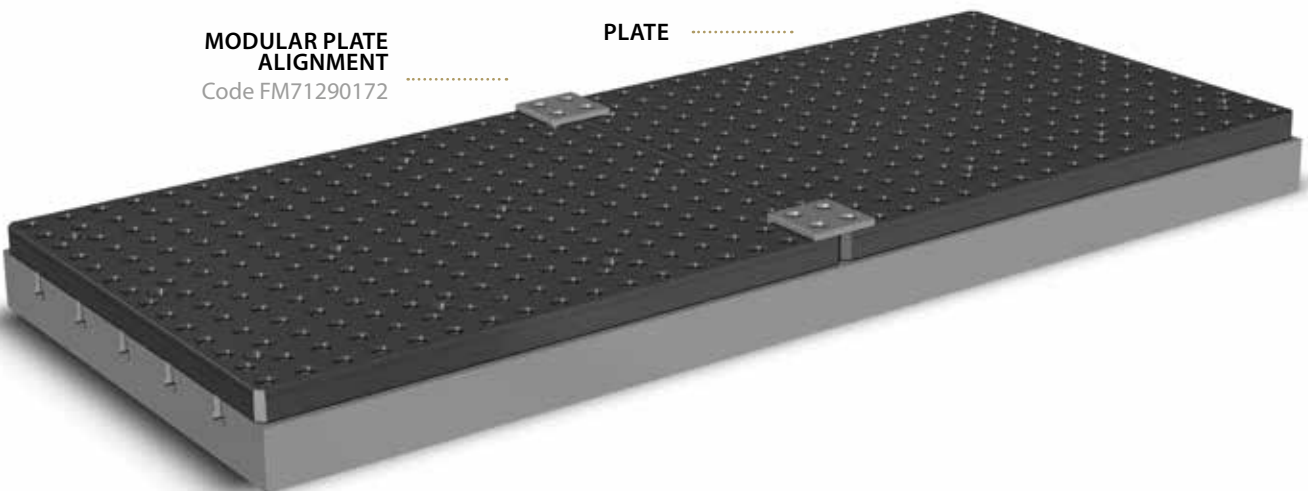


SET CONFIGURATION

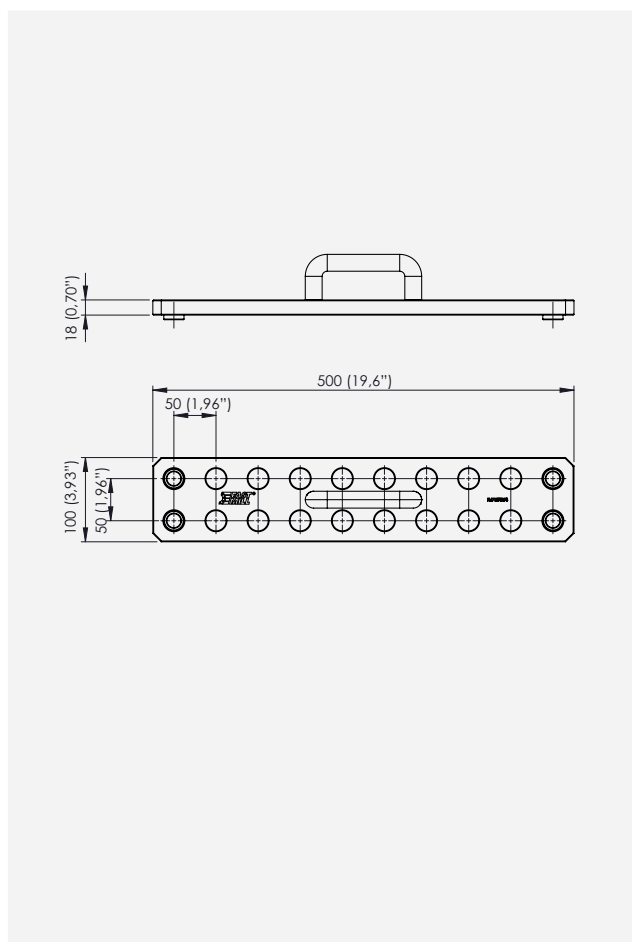
- Plate for alignment 1 piece
- Cones bushes 4 pieces

CODE	DIMENSION	HEIGHT	GRID
FM71290172	100x100 (3,93"x3,93")	10 (0,39")	50 (1,96")

Setup example



Set for modular plate alignment

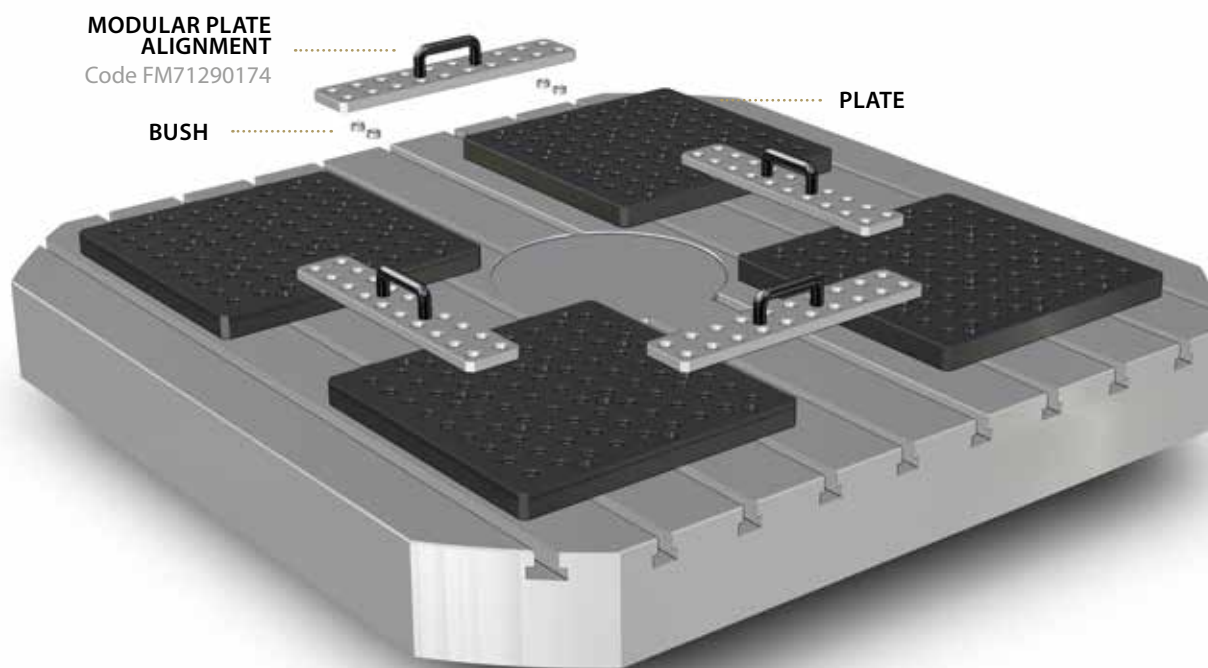


SET CONFIGURATION

- Plate for alignment 1 piece
- Cones bushes 4 pieces

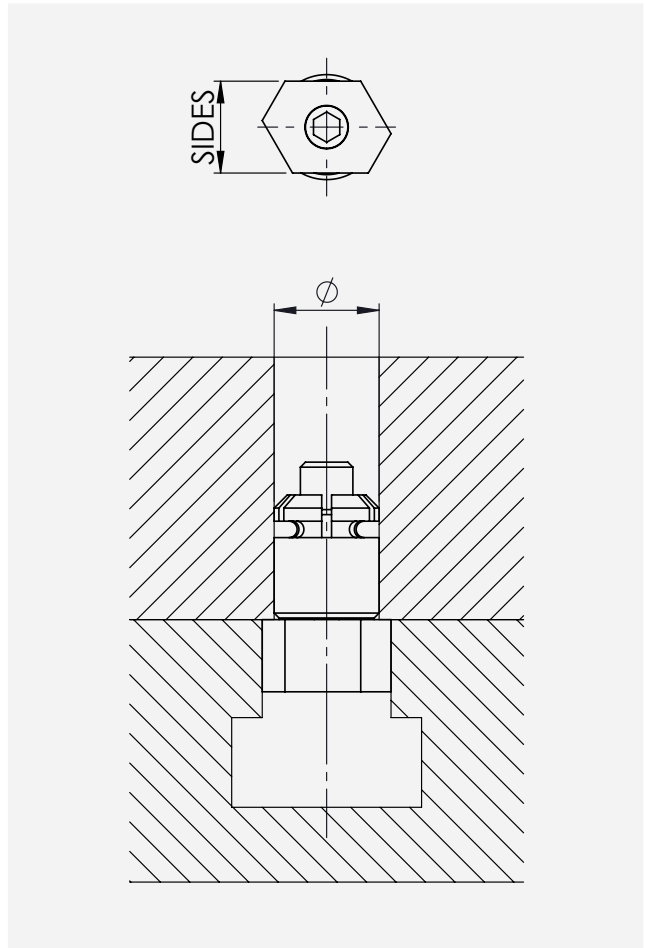
CODE	DIMENSION	HEIGHT	GRID
FM71290174	500x100 (19,6"x3,93")	18 (0,70")	50 (1,96")

Setup example



MODULES
PINS AND BUSHES
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ANGLE PLATES SOLUTIONS
MINI RANGE
TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES

Locating pin expanding for H7 t-slot



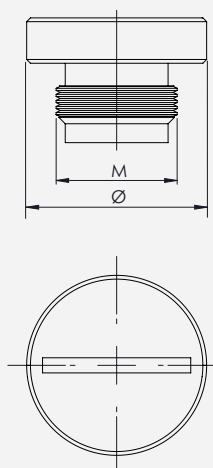
CODE	Ø	SIDES
FM71290181	16 (0,72")	12-22
FM71290182	16 (0,72")	14-16-18
FM71290183	16 (0,72")	10-20
FM71290184	20 (0,78")	24-28-32



Setup example



Cap for plate



CODE	Ø	M
FM46191011	18 (0,70")	M12
FM46191012	20 (0,78")	M12
FM46191016	24 (0,94")	M16



CUBES

MODULES
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SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
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ACCESSORIES

90° Index riser set

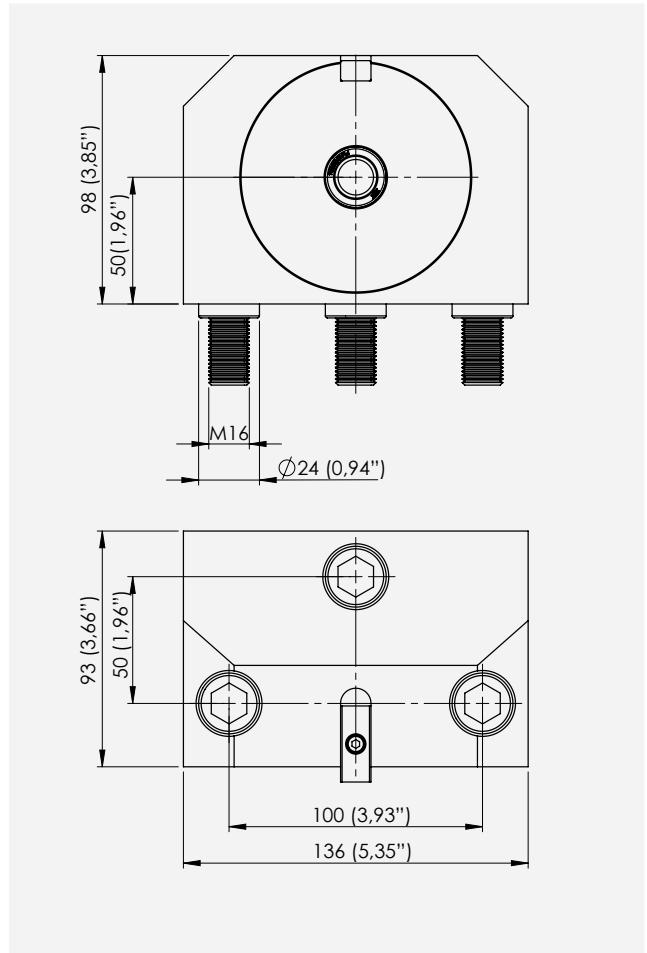


CODE

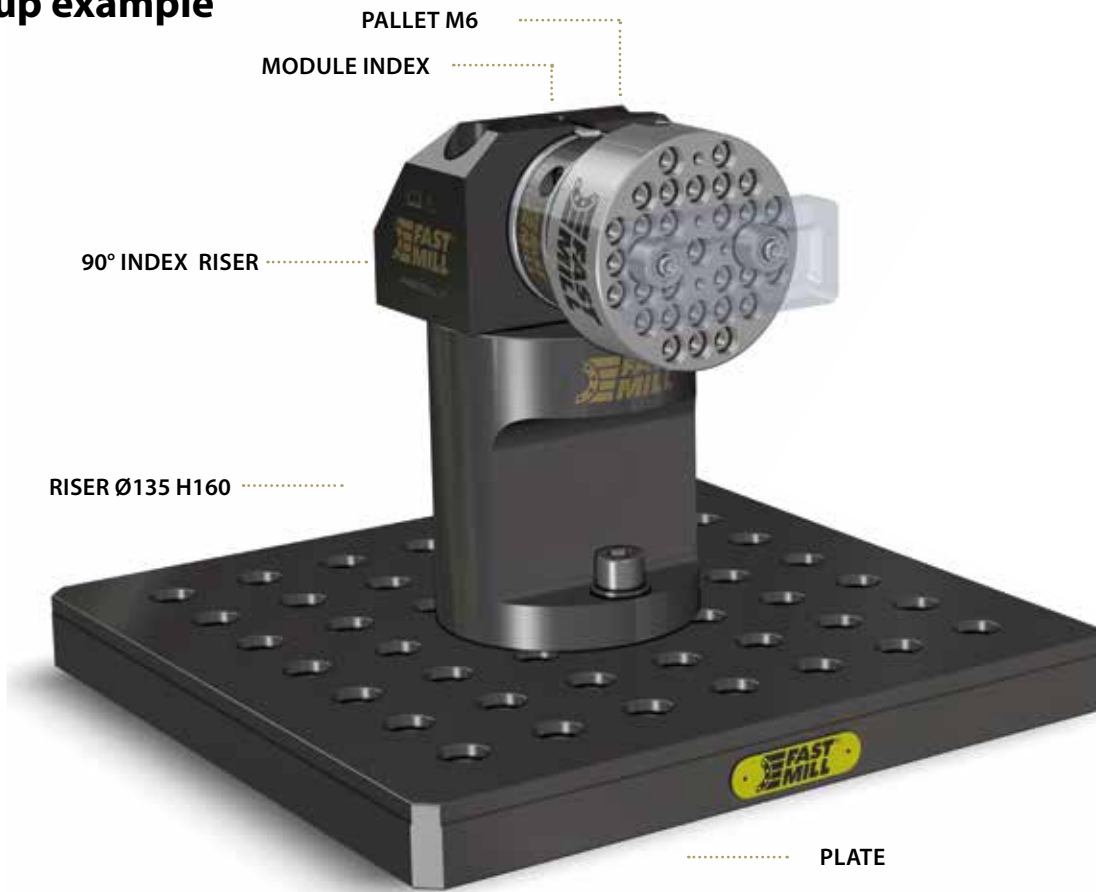
FM90IR0016024

SET CONFIGURATION

- | | |
|------------------------------------|----------|
| Feather key 12H6X8X30 for index | 1 pieces |
| Bush Ø24-24 mm | 5 pieces |
| TCEI M4X10 mm UNI 5931 inox screw | 1 pieces |
| TCEI M16X60 mm UNI 5931-12,9 screw | 3 pieces |



Setup example



MODULES
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Smart Cube set

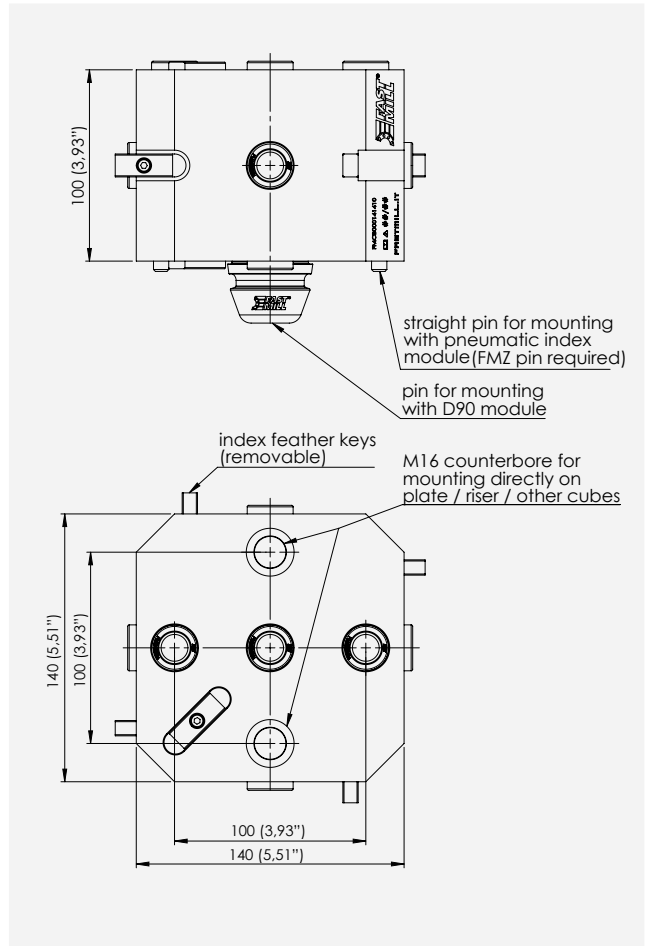


CODE

FMCB000141410

SET CONFIGURATION

Feather key 12H6X8X30 for index	6 pieces
Bush Ø24-24 mm	10 pieces
Male Pin type A M12 Ø18	1 piece
TCEI M4X10 mm UNI 5931 inox screw	6 pieces
Straight pin 8x18 UNI 6364-B	2 pieces

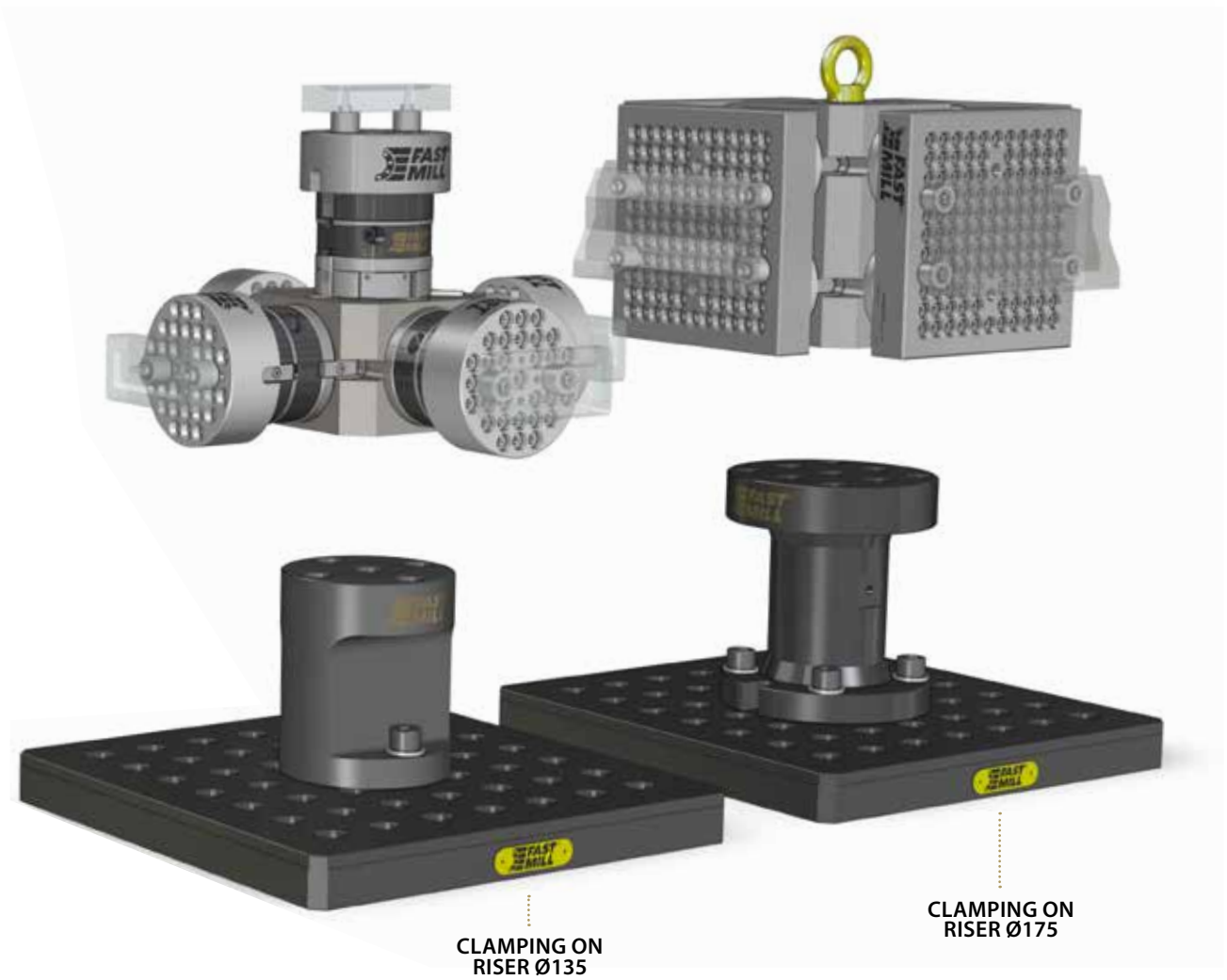


Setup example



CLAMPING ON INDEX MODULE

CLAMPING ON PNEUMATIC MODULE



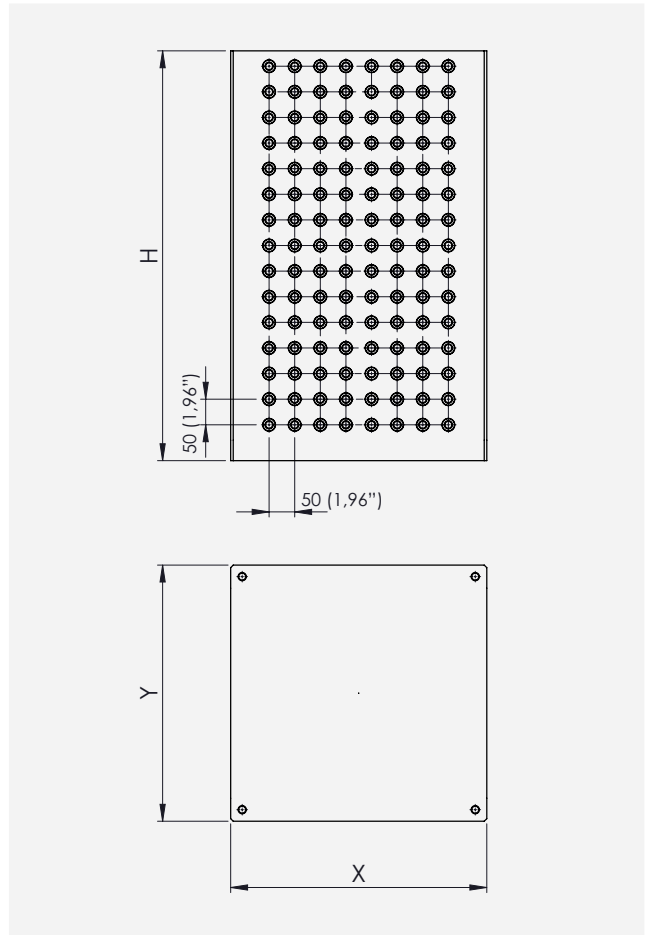
CLAMPING ON RISER Ø135

CLAMPING ON RISER Ø175

- MODULES
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- MODULES
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- RISERS
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Cube/Tombstone



Alternative dimensions or custom solutions on demand.

CODE	DIMENSION	HEIGHT	WEIGHT
FM57700700	500x500 (19,6"x19,6")	800 (31,4")	597 (1316 lbs)

ON DEMAND

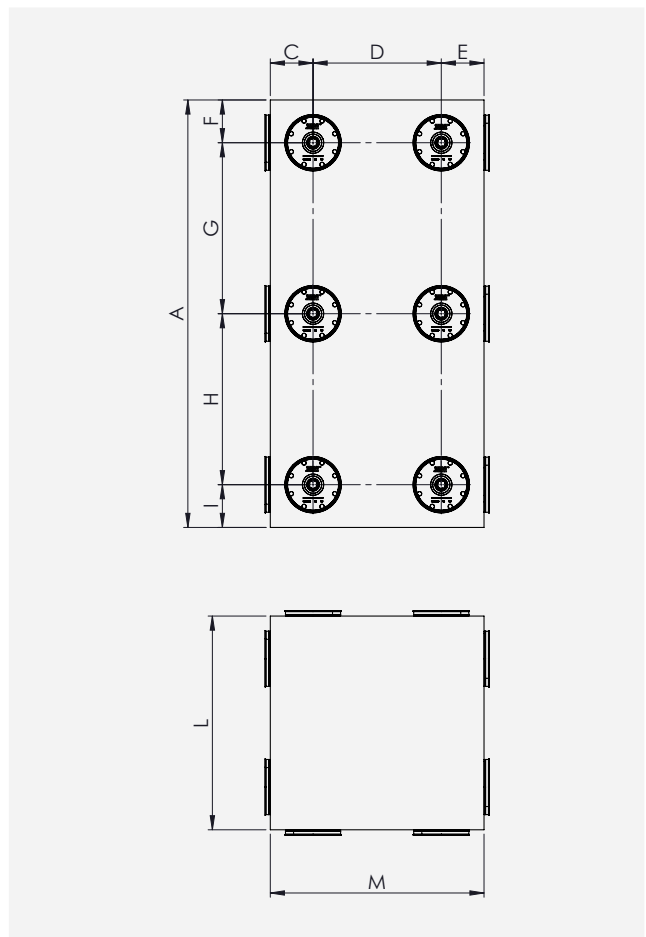


FMZ pneumatic cube

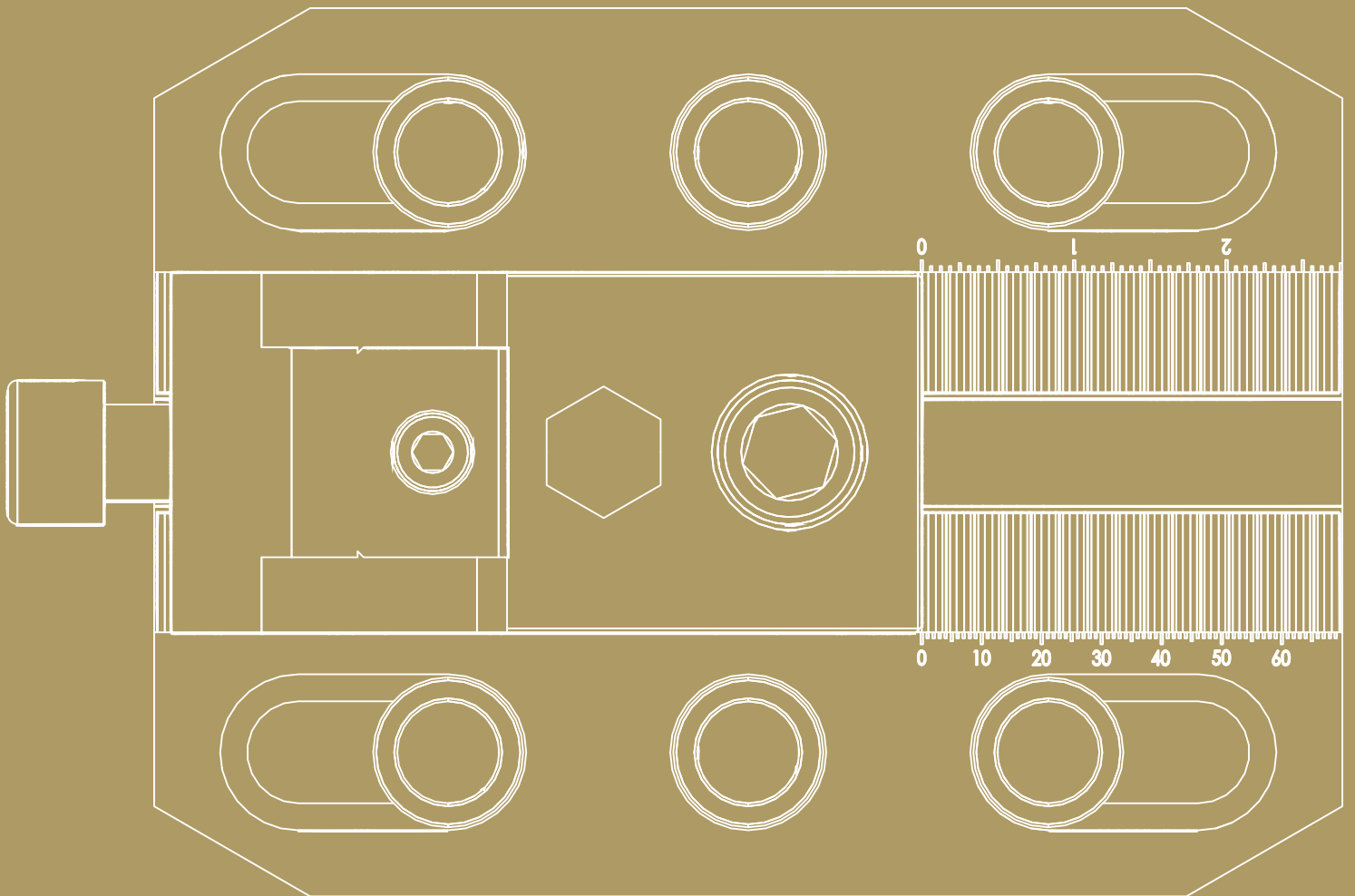


ON DEMAND

Alternative dimensions or custom solutions on demand.



- MODULES
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- RISERS
- SPACERS
- THIRD POINT
- VERTICAL CLAMPING
- MINI RANGE
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- CLAMPS
- ACCESSORIES





CLAMPS

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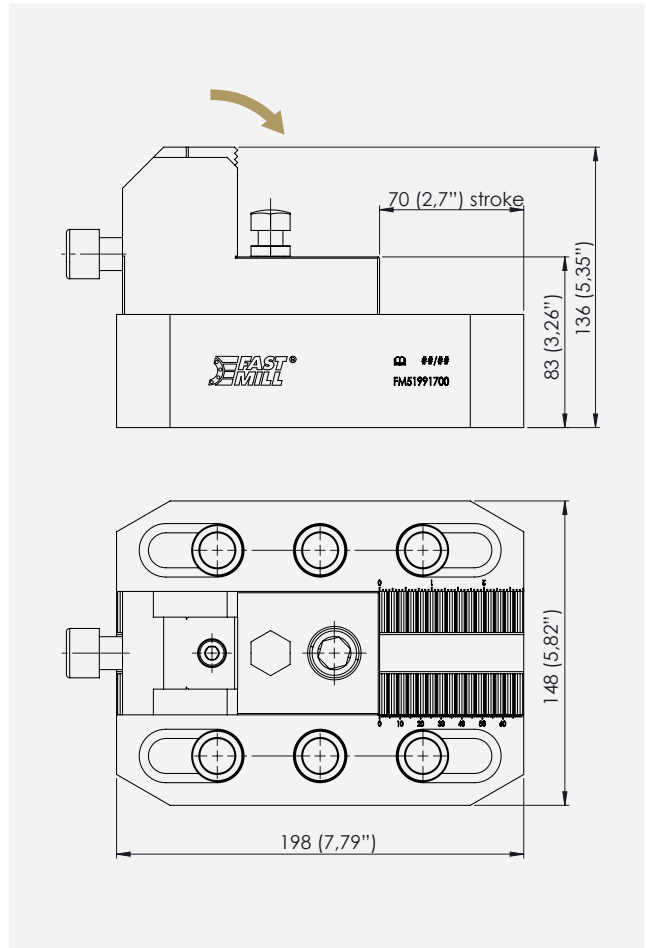
Modular clamp



CODE	DIMENSION	HEIGHT	WEIGHT
FM51991700	198x148 (7,79"x5,82")	136 (5,35")	11,8 (26 lbs)



Related bushes at page 42.



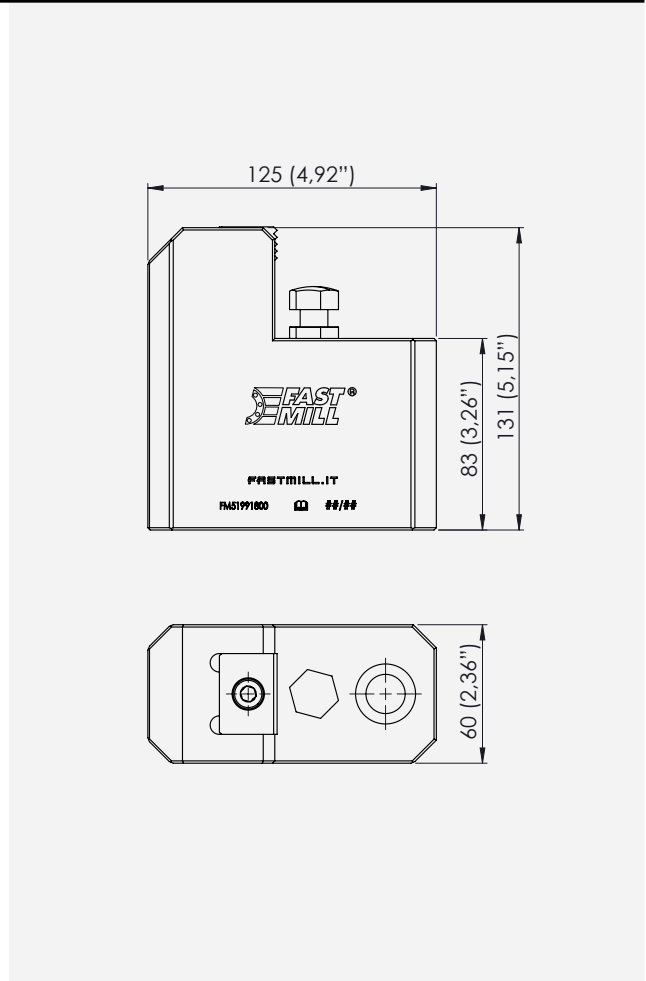
Fixed clamp



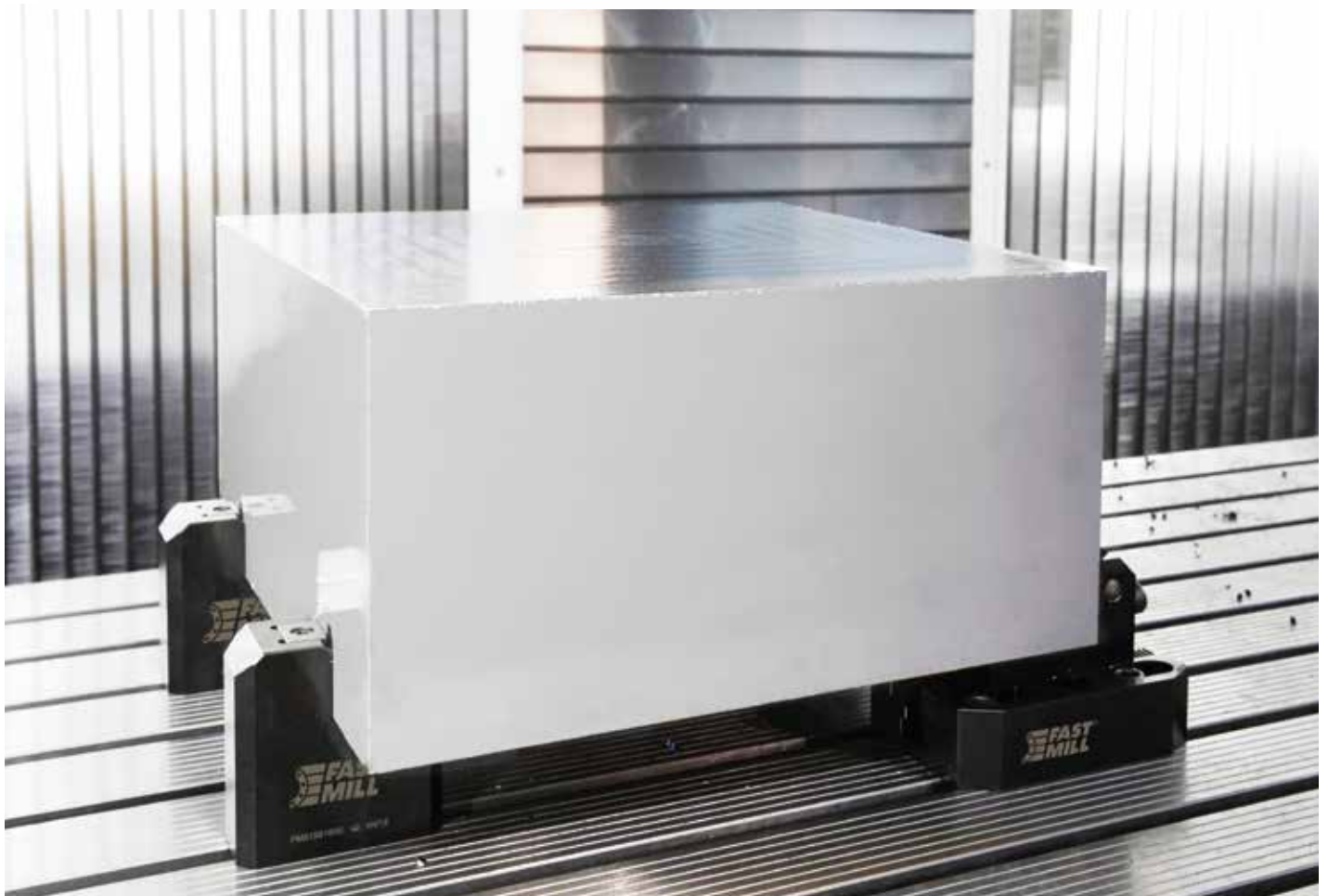
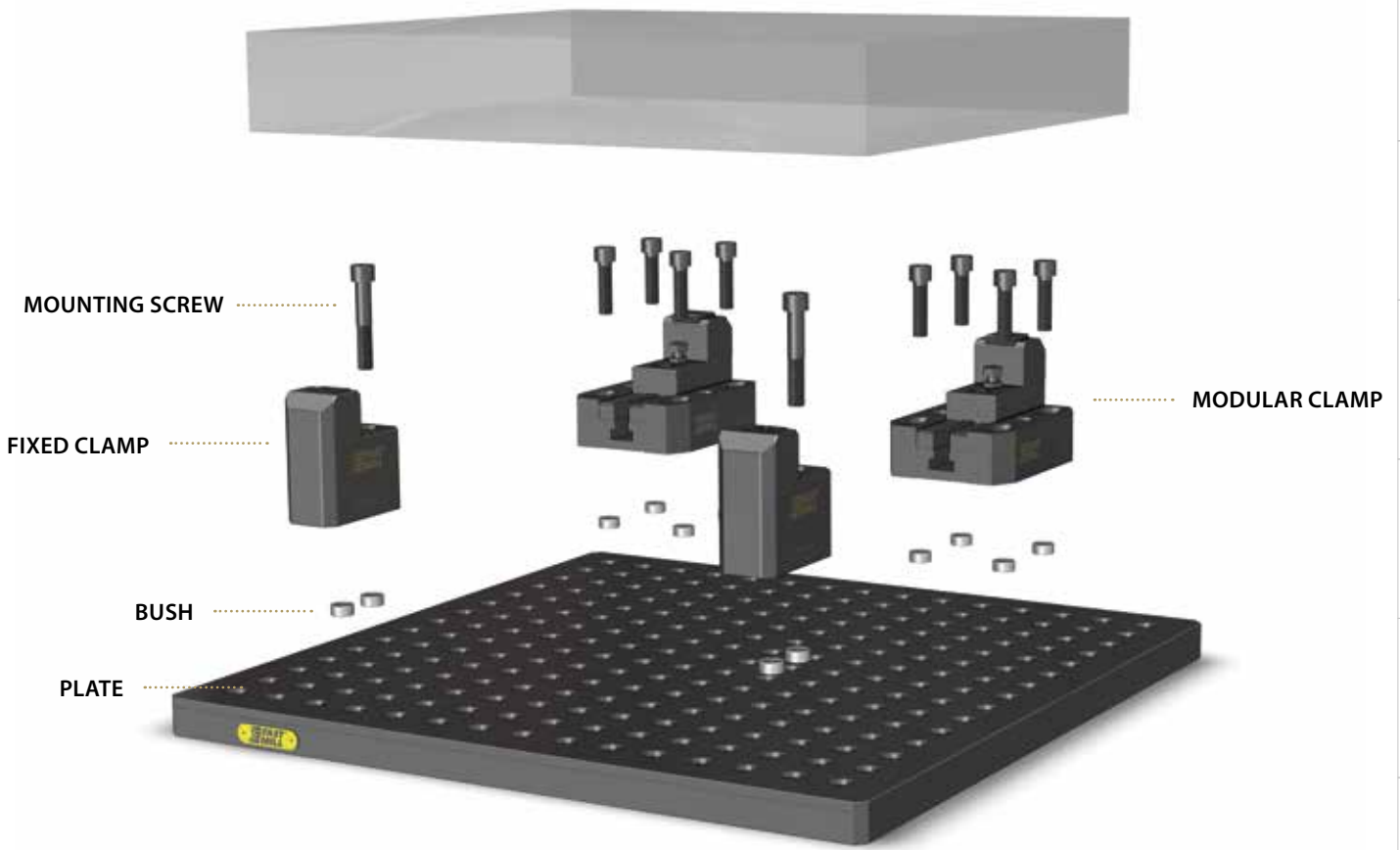
CODE	DIMENSION	HEIGHT	WEIGHT
FM51991800	60x125 (2,36"x4,92")	131 (5,15")	5,8 (12,7 lbs)



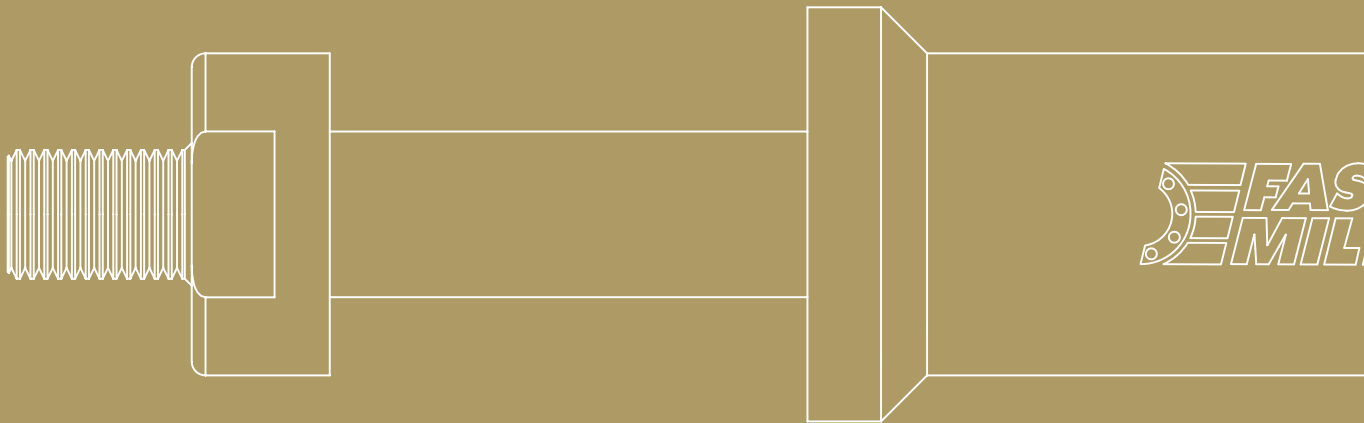
Related bushes at page 42.



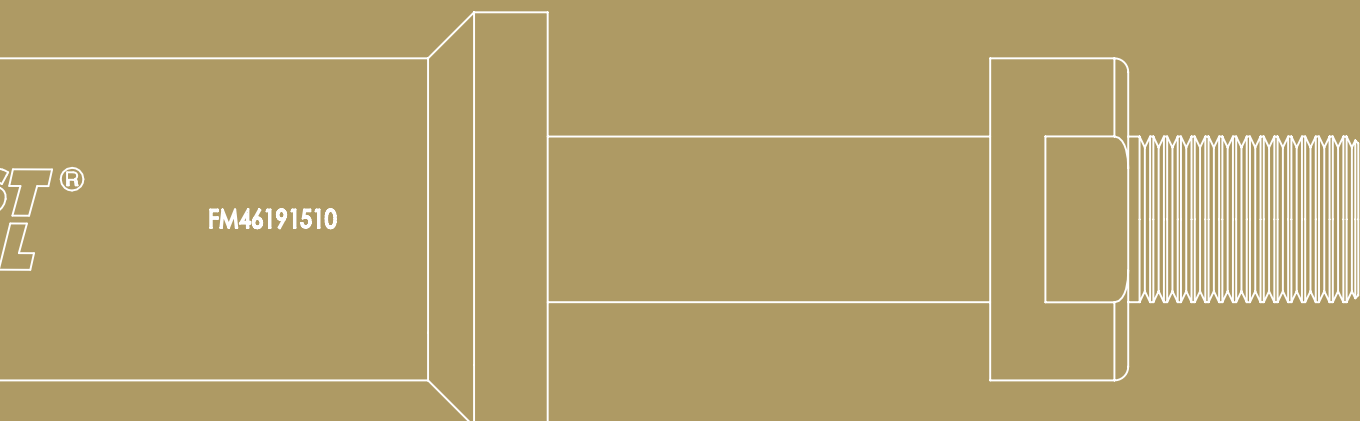
Clamps assembly example



MODULES
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THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
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ACCESSORIES



ACCESSORIES

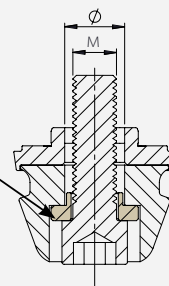


MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES

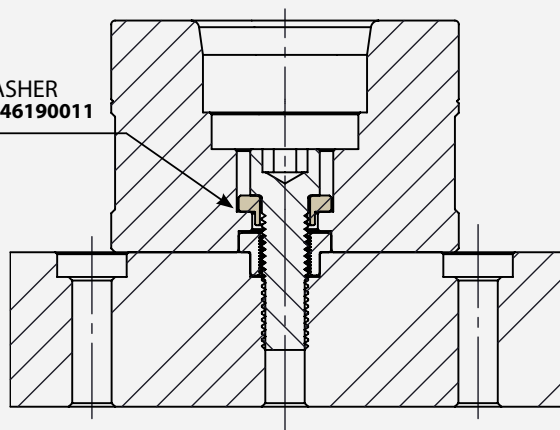
Reducer washer for pin



WASHER
FM46190008
FM46190010
FM46190011



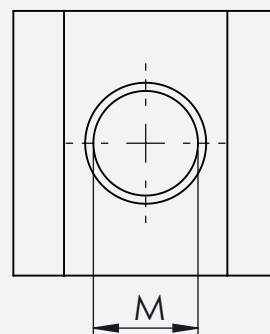
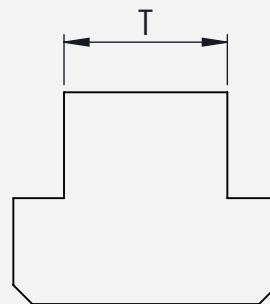
WASHER
FM46190011



CODE	Ø	M
FM46190008	M12	M6
FM46190010	M12	M8
FM46190011 *	M16	M10-M12

* Usable with single or index modules h 60/80/160 mm.

T-Nut



CODE	T	M
FM36008012	T12	M8
FM36008014	T14	M8
FM36012014	T14	M12
FM36012018	T18	M12
FM36016018	T18	M16
FM36016022	T22	M16
FM36016024	T24	M16
FM36016028	T28	M16
FM36316028 *	T28	M16

* Rhomboidal version.

Extractor adapter



CODE	FOR PIN
FM46191520	M6
FM46191521	M8
FM46191522	M10
FM46191523 *	M14
FM46191525 **	M26

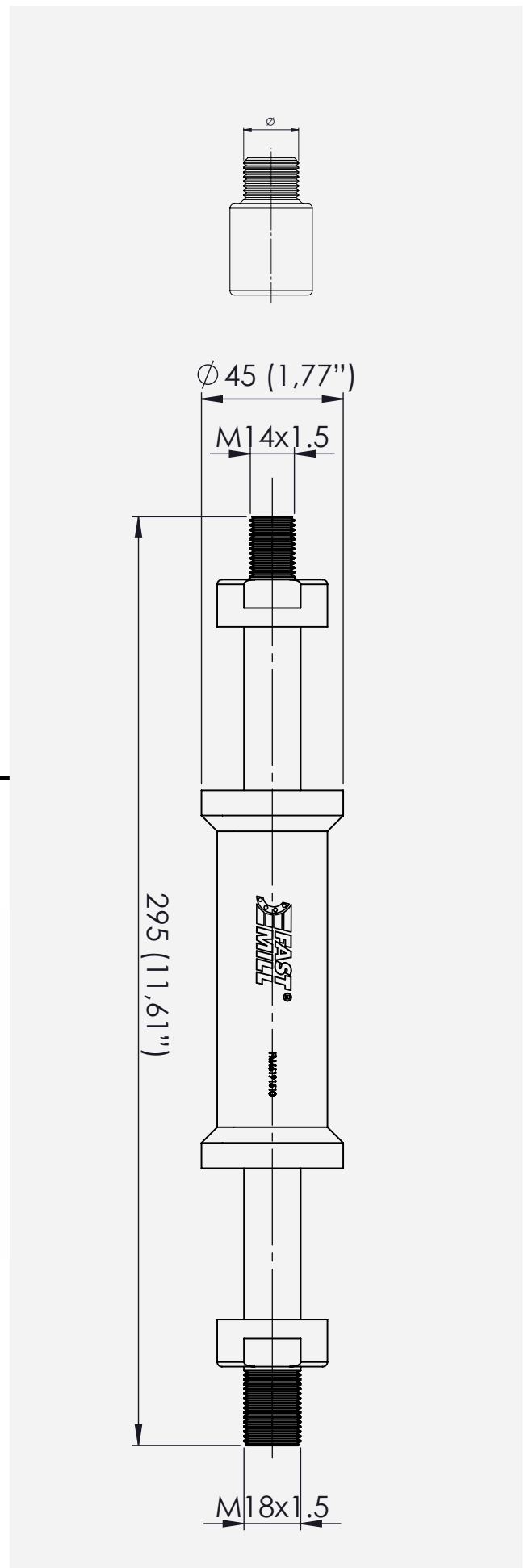
* Usable with FMZ range.

** For vertical clamping at page 74.

Pin and bush extractor



CODE	DIMENSION
FM46191510	295 (11,61")



MODULES

PINS AND
BUSHES

RISERS

SPACERS

THIRD POINT

VERTICAL
CLAMPING

MINI RANGE

TILTING

FMZ

PLATES

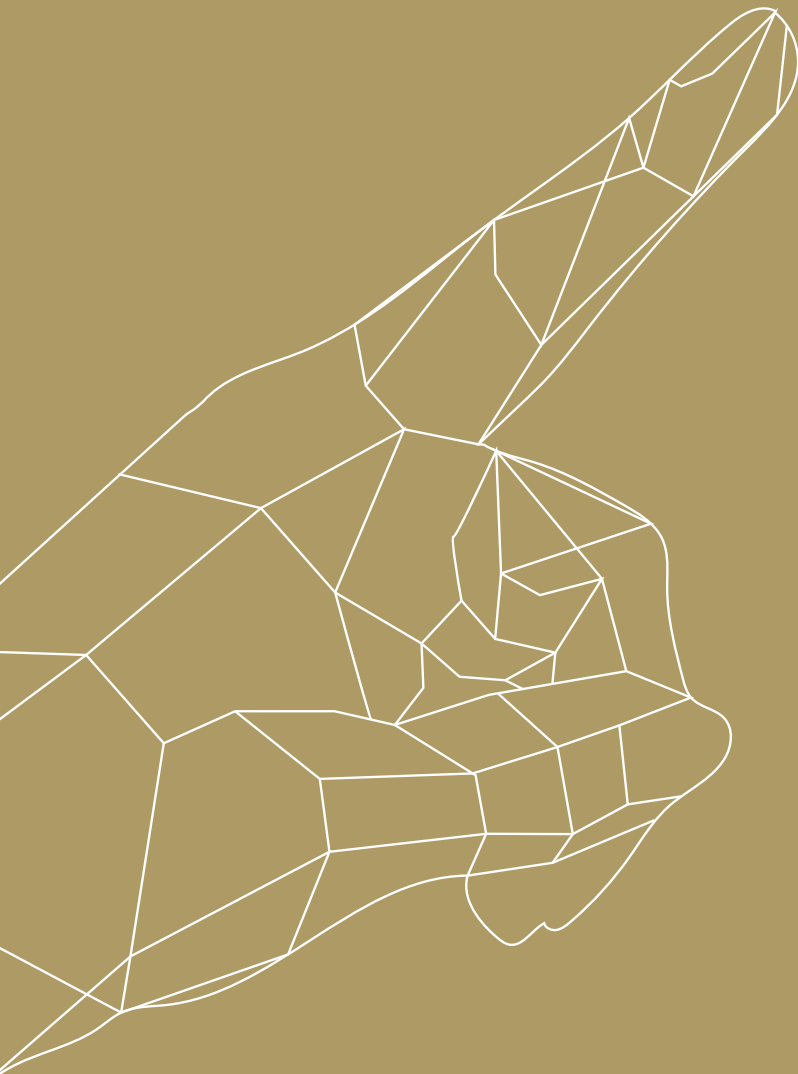
CUBES

CLAMPS

ACCESSORIES



INDUSTRY 4.0 PLATFORM




PLATFORM
MARES 4.0+
 DIGITAL INTELLIGENCE

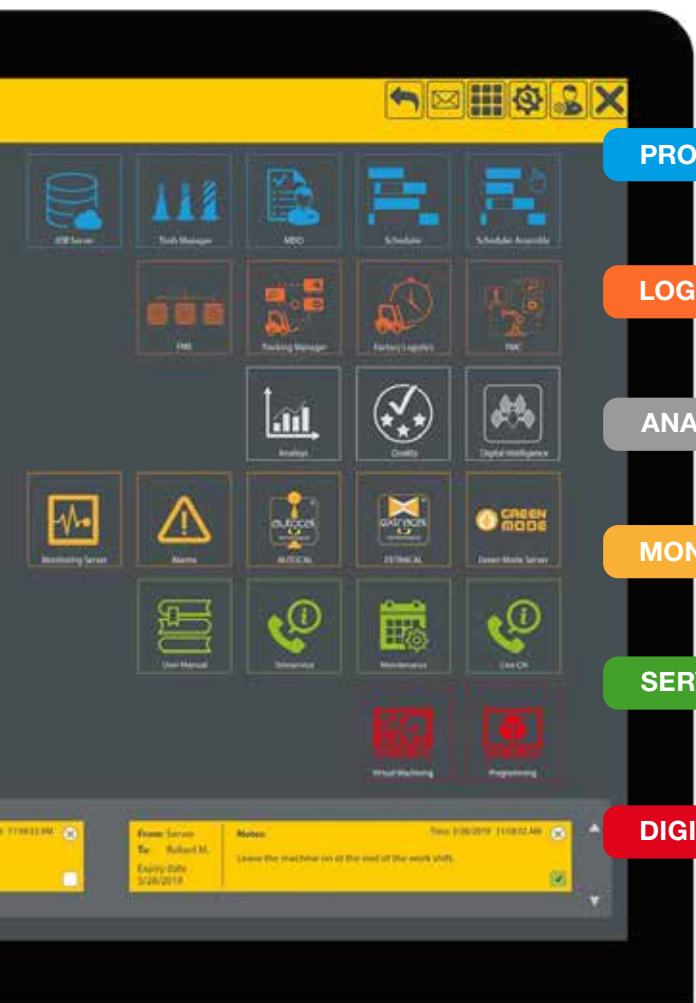


The correct interconnection between machines is the fundamental basis for the realization of a digital factory according to INDUSTRY 4.0.

Only a machine manufacturer with more than 50 years of experience in its sector has the right skills to interconnect machines by different manufacturers with different electronic systems and to develop an operator interface directly embedded in machines.

MARES 4.0+ Platform is the new exclusive IT platform designed and developed by an enterprise that produces, uses and manages the integration of production machines installed in factories.





PRODUCTIVITY

The applications belonging to this group are aimed at managing productivity and controlling the efficiency of the machine.

LOGISTICS

The applications belonging to this group are aimed at managing production logistics, FMS and processing cells.

ANALYTICS

The applications belonging to this group are aimed at the statistical analysis of production data.

MONITORING

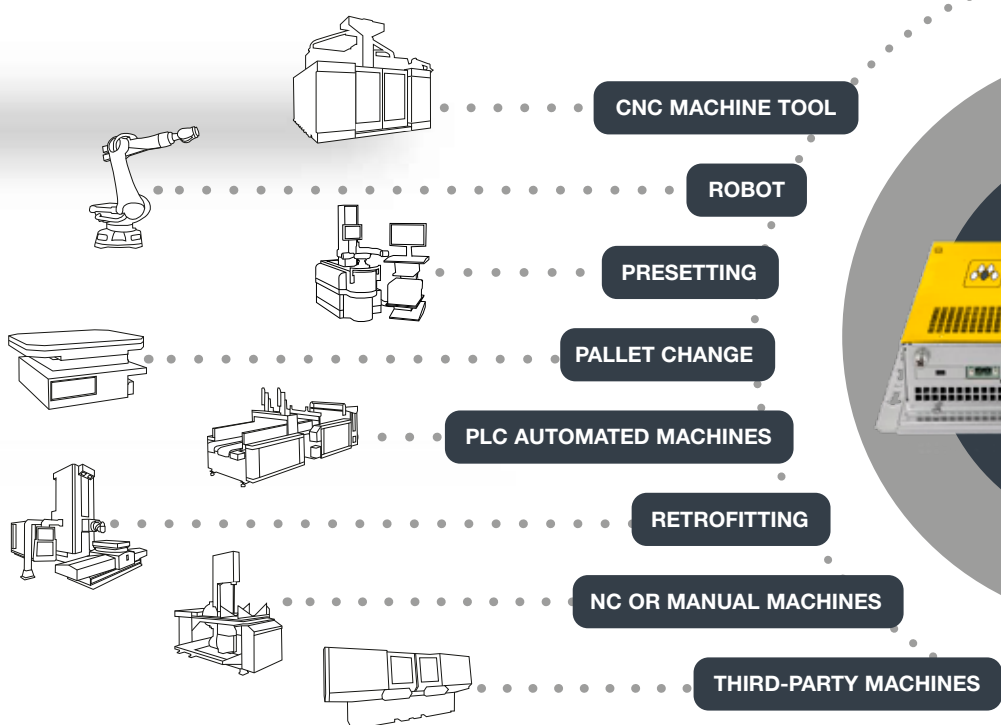
The applications belonging to this group aim at monitoring machine status, monitoring working conditions and using adaptive control software for process deviations.

SERVICE

The applications belonging to this group aim at properly managing the machine, providing both technical support for its use and technical assistance service.

DIGITAL TWIN

The applications belonging to this group aim at simulating work programs and virtualizing production processes of the machine.





TECHNICAL INFORMATION

TECHNICAL INFORMATION

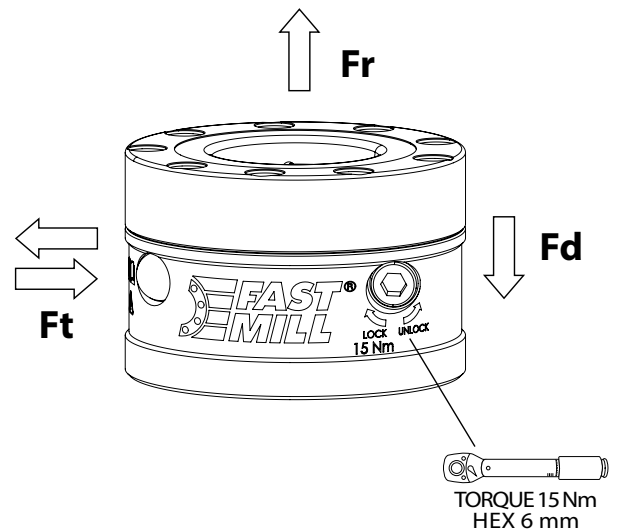
ALL STANDARD SCREW MUST BE TIGHTEN WITH 80% OF MAX TORQUE ACCORDING TO ISO 7379 12.9.

ISO METRIC PITCH

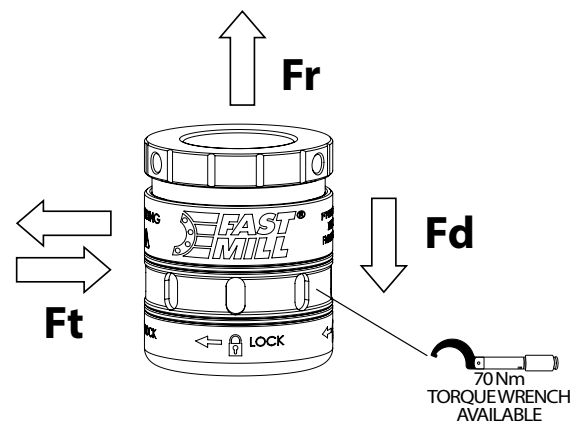
Screw 12.9	Hex wrench	Resistant section rated mm ²	Max torque Nm
M12 x 1.75	10	84.3	120
M16 x 2	14	157	300

USAGE LIMIT MODULE Ø90

Screw 12.9	Usage limit		
Thread on steel with Rm ≥ 950 N/mm ²	Ft Admissible lateral force	Fr Admissible holding force	Fd Admissible loading force
M12 x 1.75	30 kN	50 kN	100 kN
M16 x 2	30 kN	75 kN	100 kN


USAGE LIMIT MODULE Ø49

Screw 12.9	Usage limit		
Thread on steel with Rm ≥ 950 N/mm ²	Ft Admissible lateral force	Fr Admissible holding force	Fd Admissible loading force
M12 x 1.75	18 kN	50 kN	100 kN
M16 x 2	18 kN	75 kN	100 kN

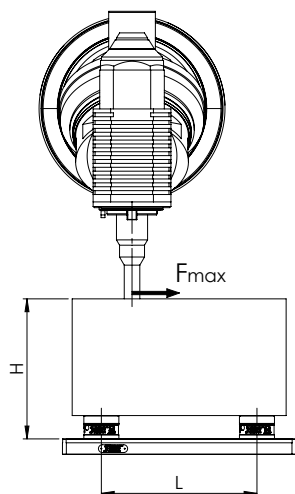


USE AND MAINTENANCE MANUAL AVAILABLE AT WWW.FASTMILL.IT .

Data and features in the present catalogue are not binding. The producer reserves the right to alter them without advance notice at any time. - Dati e caratteristiche del presente catalogo non sono impegnativi. Il costruttore si riserva di modificarli senza preavviso in qualsiasi momento. - Die in diesem Katalog angeführten Daten und Angaben sind unverbindlich. Der Hersteller behält sich das Recht zur Änderung ohne vorherige Benachrichtigung vor. - Les données et caractéristiques du présent catalogue ne sont pas un engagement. Le constructeur se réserve de modifier celles-ci sans préavis à n'importe quel moment.

CALCULATION FORMULA FOR MAXIMUM WEIGHT AND FORCE DURING MACHINING AND DETERMINATION OF THE NUMBER OF MODULES REQUIRED

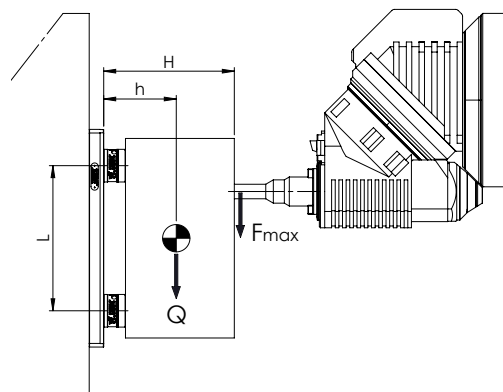
VERTICAL MACHINING



Fmax = maximum force of the axis during machining

$$F_{max} = \frac{L}{H} \times \beta \times \frac{n}{2} \text{ [N]}$$

HORIZONTAL MACHINING



Qmax = maximum payload that can be fixed

$$Q_{max} = \frac{L}{h} \times \beta \times \frac{n}{2} \text{ [N]} \text{ (without F applied)}$$

Fmax = maximum force of the axis during machining

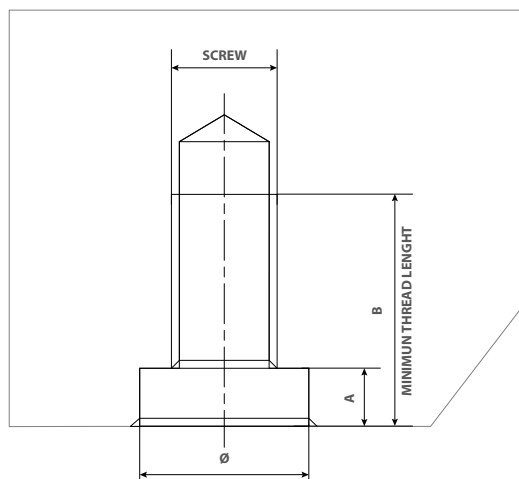
$$F_{max} = \left(\frac{L}{H} \times \beta \times \frac{n}{2} \right) - \frac{h}{H} \times Q \text{ [N]}$$

RESISTANCE VALUE	M12	M16
β	12000	21000

LEGENDA

- n = n° of modules applied (ex. two modules as shown in figure are n=2)
- L = mm / h = mm / H = mm
- β = Newton / Q = Newton / F = Newton
- N = Kg x 9,81

Standard and mini range workpiece preparation

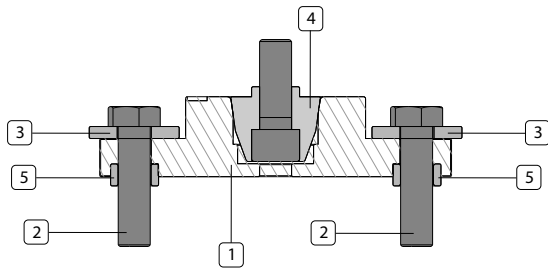


SCREW	DIAMETER Ø	A	B (STEEL)	B (CAST IRON/ALLOY)
M6	10-11 mm H6	7 mm	16 mm	20 mm
M8	12-14 mm H6	7 mm	20 mm	27 mm
M10	14-16 mm H6	7 mm	22 mm	29 mm
M12	18-20 mm H6	7 mm	26 mm	32 mm
M12 *	18-20 mm H6	9,5 mm	26 mm	32 mm
M16	22-24 mm H6	7 mm	32 mm	40 mm
M24	34-36 mm H6	10 mm	48 mm	60 mm

* For FMZ pin.

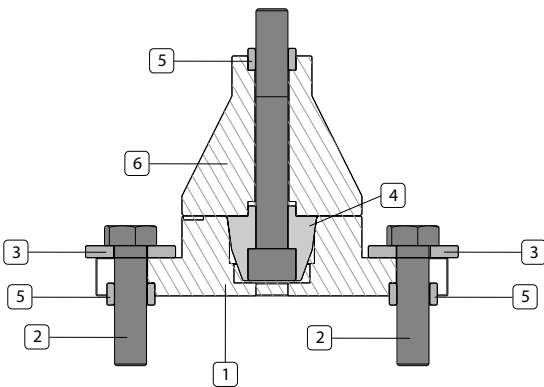
MODULES
PINS AND BUSHES
RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
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Single module h40 mm FMX46190110 SET UP example



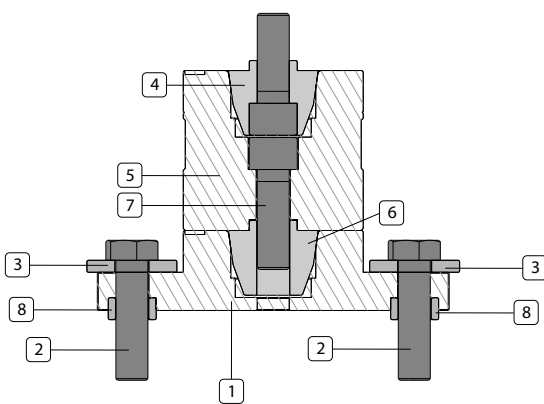
SINGLE MODULE h40 mm ON PLATE OR T-SLOT

- 1 Single module Opt.T-slots - Code **FMX46190110**
- 2 Hexagon head screw M16x60
- 3 Reducer washer for M16 strengthen screw DIN 6340 AND UNI 6602 A
- 4 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**
- 5 Single centering bush M16 Ø24-24 mm - Code **FM46190924**



SINGLE MODULE h40 mm ON PLATE OR T-SLOT WITH SPACER

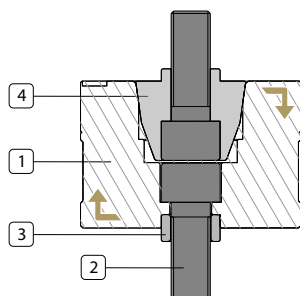
- 1 Single module Opt.T-slots - Code **FMX46190110**
- 2 Hexagon head screw M16x60
- 3 Reducer washer for M16 strengthen screw DIN 6340 AND UNI 6602 A
- 4 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**
- 5 Single centering bush M16 Ø24-24 mm - Code **FM46190924**
- 6 Reduction spacer Ø90-40 mm h 80 mm - Code **FM46191800**



SINGLE MODULE h40 mm ON PLATE OR T-SLOT WITH MODULE h80 mm FMX46190130

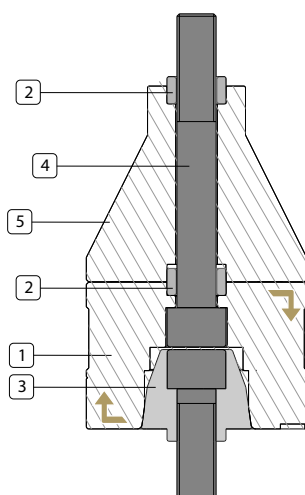
- 1 Single module Opt.T-slots - Code **FMX46190110**
- 2 Hexagon head screw M16x60
- 3 Reducer washer for M16 strengthen screw DIN 6340 AND UNI 6602 A
- 4 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**
- 5 Single module Ø90 mm h 80 mm - Code **FMX46190130**
- 6 Female pin type A M16 Ø24 mm - Code **FM46191242**
- 7 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x50
- 8 Single centering bush M16 Ø24-24 mm - Code **FM46190924**

Single module h60 mm FMX46190120 SET UP example



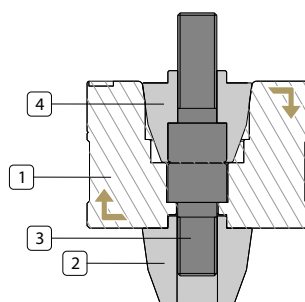
SINGLE MODULE h60 mm ON PLATE OR T-SLOT

- 1 Single module Ø90 mm h60 mm - Code **FMX46190120**
- 2 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x40
- 3 Single centering bush M16 Ø24-24 mm - Code **FM46190924**
- 4 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**



SINGLE MODULE h60 mm ON PLATE OR T-SLOT WITH SPACER

- 1 Single module Ø90 mm h60 mm - Code **FMX46190120**
- 2 Single centering bush M16 Ø24-24 mm - Code **FM46190924**
- 3 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**
- 4 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x120
- 5 Reduction spacer Ø90-40 mm h 80 mm - Code **FM46191800**



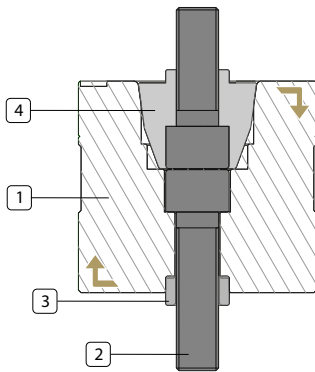
SINGLE MODULE h60 mm ON PLATE OR T-SLOT WITH FEMALE PIN FM46191242

- 1 Single module Ø90 mm h60 mm - Code **FMX46190120**
- 2 Female pin type A M16 Ø24 mm - Code **FM46191242**
- 3 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x30
- 4 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**

MODULES
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MINI RANGE
TILTING
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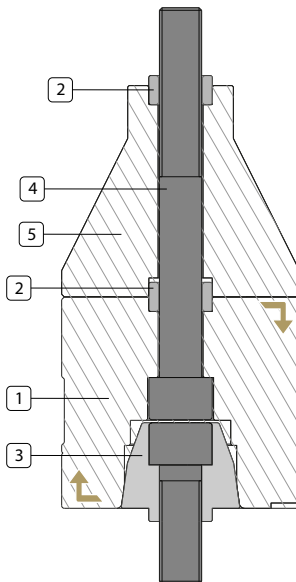
MODULES
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 MINI RANGE
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Single module h80 mm FMX46190130 SET UP example



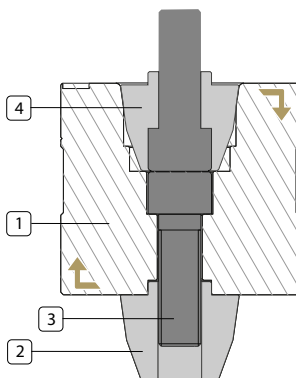
SINGLE MODULE h80 mm ON PLATE OR T-SLOT

- 1 Single module $\varnothing 90$ mm h80 mm - Code **FMX46190130**
- 2 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x60
- 3 Single centering bush M16 $\varnothing 24$ -24 mm - Code **FM46190924**
- 4 Male pin type A M16 $\varnothing 24$ mm with M16x45 screw - Code **FM46191142**



SINGLE MODULE h80 mm ON PLATE OR T-SLOT WITH SPACER

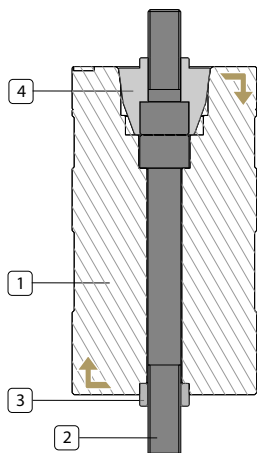
- 1 Single module $\varnothing 90$ mm h80 mm - Code **FMX46190130**
- 2 Single centering bush M16 $\varnothing 24$ -24 mm - Code **FM46190924**
- 3 Male pin type A M16 $\varnothing 24$ mm with M16x45 screw - Code **FM46191142**
- 4 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x140
- 5 Reduction spacer $\varnothing 90$ -40 mm h 80 mm - Code **FM46191800**



SINGLE MODULE h80 mm ON PLATE OR T-SLOT WITH FEMALE PIN FM46191242

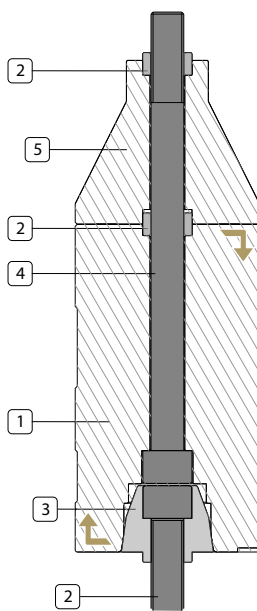
- 1 Single module $\varnothing 90$ mm h80 mm - Code **FMX46190130**
- 2 Female pin type A M16 $\varnothing 24$ mm - Code **FM46191242**
- 3 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x50
- 4 Male pin type A M16 $\varnothing 24$ mm with M16x45 screw - Code **FM46191142**

Single module h160 mm FMX46190140 SET UP example



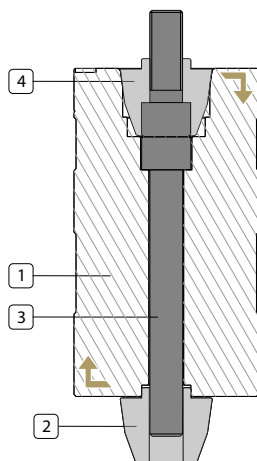
SINGLE MODULE h160 mm ON PLATE OR T-SLOT

- 1 Single module Ø90 mm h160 mm - Code **FMX46190140**
- 2 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x140
- 3 Single centering bush M16 Ø24-24 mm - Code **FM46190924**
- 4 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**



SINGLE MODULE h160 mm ON PLATE OR T-SLOT WITH SPACER

- 1 Single module Ø90 mm h160 mm - Code **FMX46190140**
- 2 Single centering bush M16 Ø24-24 mm - Code **FM46190924**
- 3 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**
- 4 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x220
- 5 Reduction spacer Ø90-40 mm h 80 mm - Code **FM46191800**



SINGLE MODULE h160 mm ON PLATE OR T-SLOT WITH FEMALE PIN FM46191242

- 1 Single module Ø90 mm h160 mm - Code **FMX46190140**
- 2 Female pin type A M16 Ø24 mm - Code **FM46191242**
- 3 Cylindrical head hexagon socket screw 12.9 (DIN912) M16x130
- 4 Male pin type A M16 Ø24 mm with M16x45 screw - Code **FM46191142**

MODULES
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RISERS
SPACERS
THIRD POINT
VERTICAL CLAMPING
MINI RANGE
TILTING
FMZ
PLATES
CUBES
CLAMPS
ACCESSORIES



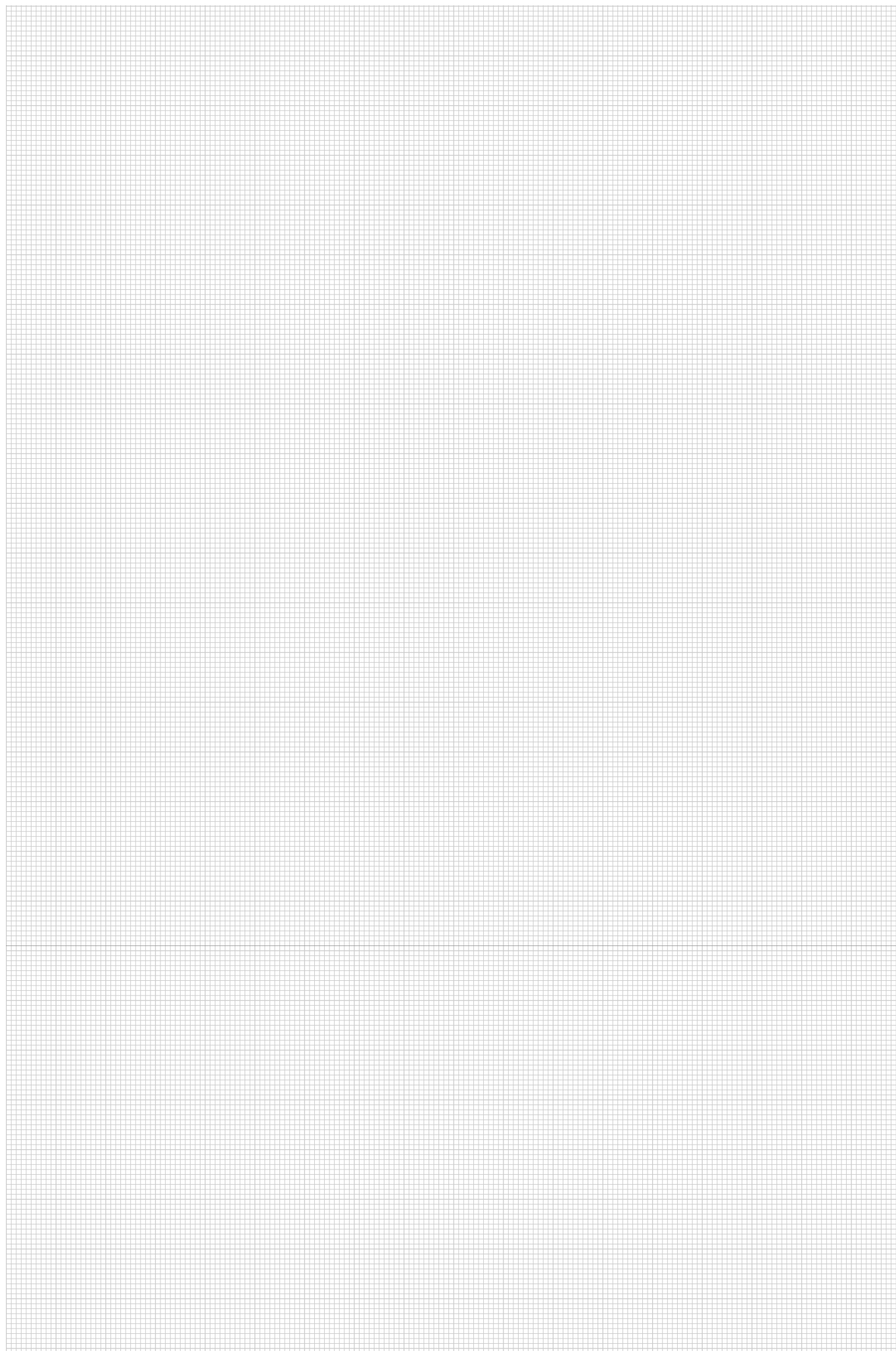
INDEX

MODULES	CODE	DESCRIPTION (DIMENSION mm)	N°	CODE	DESCRIPTION (DIMENSION mm)	N°
	MODULES PAGE 12			FMPMC49M10D00	Pin for Ø49 module M10 C	
	FMMSS0049060	Single module Ø49		FMPMA49M12D18	Pin for Ø49 module M12 Ø18 A	
PINS AND BUSHES	FMMSS0049TWK	Torque Wrench kit		FMPMC49M12D18	Pin for Ø49 module M12 Ø18 C	
	FMMSS0049TWI	Torque wrench insert		FMPMA49M12D20	Pin for Ø49 module M12 Ø20 A	
	FMLOCK030D49	Clock plate for Ø49 module		FMPMC49M12D20	Pin for Ø49 module M12 Ø20 C	
	FMSLIDE030D49	Slide plate for Ø49 module		FMPMC49M12D00	Pin for Ø49 module M12 C	
RISERS	FM46190110	Opt. T-slots Ø90 - h40		FMPMA49M16D22	Pin for Ø49 module M16 Ø22 A	
	FMX46190120	Single Ø90 - h60		FMPMC49M16D22	Pin for Ø49 module M16 Ø22 C	
	FMX46190130	Single Ø90 - h80		FMPMA49M16D24	Pin for Ø49 module M16 Ø24 A	
	FMX46190140	Single Ø90 - h160		FMPMC49M16D24	Pin for Ø49 module M16 Ø24 C	
SPACERS	FMMSADJ901606	Adjustable module Ø90		FMPMC49M16D00	Pin for Ø49 module M16 C	
	FMSLIDE030D90	Slide plate for Ø90 module		FM46191105	Male M6 Ø10 A	
	FM46190005	Anti-rotation plate		FM46193105	Male M6 Ø10 C	
	FM46190125	Index Ø90 - h60		FM46191106	Male M6 Ø11 A	
	FM46190135	Index Ø90 - h80		FM46193106	Male M6 Ø11 C	
	FM46190145	Index Ø90 - h160		FM46191107	Male M8 Ø12 A	
	FM46191705	Index flange 45°		FM46193107	Male M8 Ø12 C	
	FMAMER3290100	ER 32 module		FM46191108	Male M8 Ø14 A	
	FM46190150	Double Ø90 - h80		FM46193108	Male M8 Ø14 C	
	FM46190160	Double Ø90 - h160		FM46191109	Male M10 Ø14 A	
	PINS AND BUSHES PAGE 42			FM46193109	Male M10 Ø14 C	
MINI RANGE	FM46190918	Bush Ø24-18 - h11		FM46191110	Male M10 Ø16 A	
	FM46190920	Bush Ø24-20 - h11		FM46193110	Male M10 Ø16 C	
	FM46190922	Bush Ø24-22 - h11		FM46191111	Male M12 Ø18 A	
	FM46190924	Bush Ø24-24 - h11		FM46193111	Male M12 Ø18 C	
	FM46190925	Bush Ø24-25 - h11		FM46191121	Male M12 Ø20 A	
	FM93000003	Bush Ø24-24 - h13		FM46193121	Male M12 Ø20 C	
	FM93000042	Bush Ø24-24 - h16		FM46191132	Male M16 Ø22 A	
	FM93000040	Bush Ø36-24 - h15		FM46193132	Male M16 Ø22 C	
	FM93000041	Bush Ø36-36 - h20		FM46191142	Male M16 Ø24 A	
	FMPMA49M06D10	Pin for Ø49 module M6 Ø10 A		FM46193142	Male M16 Ø24 C	
	FMPMC49M06D10	Pin for Ø49 module M6 Ø10 C		FM46191242	Female M16 Ø24 A	
	FMPMA49M06D11	Pin for Ø49 module M6 Ø11 A		FM46191421	H Pin M12 Ø20 A	
	FMPMC49M06D11	Pin for Ø49 module M6 Ø11 C		FM46193421	H Pin M12 Ø20 C	
	FMPMC49M06D00	Pin for Ø49 module M6 C		FM46191442	H Pin M16 Ø24 A	
	FMPMA49M08D12	Pin for Ø49 module M8 Ø12 A		FM46193442	H Pin M16 Ø24 C	
	FMPMC49M08D12	Pin for Ø49 module M8 Ø12 C		FM46191316	Duble Pin	
	FMPMA49M08D14	Pin for Ø49 module M8 Ø14 A		FM46191162	Integral M24 Ø34 A	
	FMPMC49M08D14	Pin for Ø49 module M8 Ø14 C		FM46191164	Integral M24 Ø34 C	
	FMPMC49M08D00	Pin for Ø49 module M8 C		FM46191163	Integral M24 Ø36 A	
	FMPMA49M10D14	Pin for Ø49 module M10 Ø14 A		FM46191165	Integral M24 Ø36 C	
	FMPMC49M10D14	Pin for Ø49 module M10 Ø14 C		FM93000028	Adapter M24x3	
	FMPMA49M10D16	Pin for Ø49 module M10 Ø16 A		FM93000010	Adapter M30X3.5	
	FMPMC49M10D16	Pin for Ø49 module M10 Ø16 C		FM93000023	Adapter M36x3	

CODE	DESCRIPTION (DIMENSION MM)	N°	CODE	DESCRIPTION (DIMENSION MM)	N°
FM93000011	Adapter M36x4		FM46191740	Ø90-55 - h10	
FM93000024	Adapter M42x3		FM46191745	Ø90-55 - h25	
FM93000012	Adapter M42x4.5		FM46191750	Ø90-55 - h30	
FM93000025	Adapter M48x3		FM46191770	Ø90-80 - h20	
FM93000013	Adapter M48x5		FM46191780	Ø90-80 - h40	
FM93000014	Adapter M56x5.5		FM46191782	Ø90-80 - h60	
FM93000015	Adapter M64x6		FM46191889	Ø90 - h05	
FM93000043	Adapter M20x2,5		FM46191890	Ø90 - h10	
RISERS		PAGE 52	FM46191891	Ø90 - h11	
FM46192060	Riser Ø135 - h160		FM46191892	Ø90 - h12	
FM46192050	Riser Ø175 - h200		FM46191895	Ø90 - h30	
SPACERS		PAGE 58	FM46191710	Ø90 - h60	
FMSPHP0004010	Ø40 - h10 HP		FM46191715	Ø90 - h80	
FMSPHP0004015	Ø40 - h15 HP		THIRD CLAMPING POINT PAGE 68		
FMSPHP0004020	Ø40 - h20 HP		FM46191600	Third clamping point set	
FMSPHP0004025	Ø40 - h25 HP		FM46191650	Extension	
FMSPHP0004030	Ø40 - h30 HP		VERTICAL CLAMPING PAGE 74		
FMSPHP0004040	Ø40 - h40 HP		FMVCHP0024036	Vertical clamp. for heavy parts set	
FMSPHP0004050	Ø40 - h50 HP		FMVCHPLATERAL	90° Lateral clamping	
FM46191801	Ø90-40 - h10 HP		FMVCAP0016024	Vertical clamp. and positioning set	
FM46191802	Ø90-40 - h20 HP		MINI RANGE PAGE 80		
FM46191803	Ø90-40 - h30 HP		FM46190019	Pallet for index module Ø115	
FM46191804	Ø90-40 - h40 HP		FM46190018	Special drilled screw	
FM46191805	Ø90-40 - h50 HP		FM46195020	M6 pallet 196x196 h36	
FM46191806	Ø90-40 - h60 HP		FM46195021	M6 pallet 246x246 h36	
FM46191910	Ø40 - h10		FM46195022	M6 pallet 296x296 h36	
FM46191915	Ø40 - h15		FM46195025	M8 pallet 246x246 h36	
FM46191920	Ø40 - h20		FM46195026	M8 pallet 296x296 h36	
FM46191925	Ø40 - h25		FM46195029	M10 pallet 246x246 h46	
FM46191940	Ø40 - h40		FM46195030	M10 pallet 296x296 h46	
FM46191950	Ø40 - h50		FM46190015	Pallet for index module	
FM46191785	Ø90-40 - h20		FM46194015	M6 pin Ø10	
FM46191790	Ø90-40 - h40		FM46194010	M6 pin Ø11	
FM46191795	Ø90-40 - h60		FM46194025	M8 pin Ø12	
FM46191800	Ø90-40 - h80		FM46194020	M8 pin Ø14	
FM46191843	Ø55 - h03		FM46194035	M10 pin Ø14	
FM46191844	Ø55 - h04		FM46194030	M10 pin Ø16	
FM46191845	Ø55 - h05		FM46194011	M6 spacer Ø22 h8	
FM46191810	Ø55 - h10		FM46194012	M6 spacer Ø22 h12	
FM46191815	Ø55 - h15		FM46194013	M6 spacer Ø22 h16	
FM46191820	Ø55 - h20		FM46194021	M8 spacer Ø25 h10	
FM46191825	Ø55 - h25		FM46194022	M8 spacer Ø25 h15	
FM46191840	Ø55 - h40		FM46194023	M8 spacer Ø25 h20	
FM46191850	Ø55 - h50		FM46194031	M10 spacer Ø28 h15	

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MODULES	CODE	DESCRIPTION (DIMENSION mm)	N°	CODE	DESCRIPTION (DIMENSION mm)	N°
	FM46194032	M10 spacer Ø28 h25		FM71290184	Loc. pins exp. Ø20 - 24-28-32	
	FM46194033	M10 spacer Ø28 h35		CUBES		PAGE 110
PINS AND BUSHES	FM46194000	M6 Adapter Ø90 h20		FM90IR0016024	90° Index riser set	
	FM46194003	M8 Adapter Ø90 h20		FMCB000141410	Smart Cube set	
	FM46194006	M10 Adapter Ø90 h20		FM57700700	500x500 h800	
	TILTING		PAGE 88	CLAMPS		PAGE 118
RISERS	FMTMSS1090120	Tilting module Ø90 with 10° hirth		FM51991700	Modular clamp	
	FMTMSS1090C06	Base plate for tilting module		FM51991800	Fixed clamp	
	FAST MILL ZERO		PAGE 92	ACCESSORIES		PAGE 122
SPACERS	FM46151010	Module Ø129 h40		FM46190008	Reduc. washer M12 - M6	
	FM46151020	Module Ø129 h40 - INDEX		FM46190010	Reduc. washer M12 - M8	
	FM46153010	Pin M12 Ø18 A		FM46190011	Reduc. washer M16 - M12/10	
	FM46153020	Pin M12 Ø18 B		FM36008012	T-Nut M8 T12	
THIRD POINT	FM46153030	Pin M12 C		FM36008014	T-Nut M8 T14	
	FM46153070	Pin M12 Ø20 A		FM36012014	T-Nut M12 T14	
	FM46153060	Pin M16 C		FM36012018	T-Nut M12 T18	
VERTICAL CLAMPING	FM46154020	Cover Ø30		FM36016018	T-Nut M16 T18	
	FM46152010	Calibration ring		FM36016022	T-Nut M16 T22	
	FM46155010	Plate with 2 FMZ		FM36016024	T-Nut M16 T24	
MINI RANGE	FM46155020	Plate with 4 FMZ		FM36016028	T-Nut M16 T28	
	FM46155030	Plate with 6 FMZ		FM36316028	T-Nut M16 T28 -Rhomboidal	
	FM46155040	Plate with 8 FMZ		FM46191520	Extractor Adapter M6	
	FM46156010	Single module kit		FM46191521	Extractor Adapter M8	
	FM46156020	Single module kit - INDEX		FM46191522	Extractor Adapter M10	
	FINISHED MODULAR PLATES		PAGE 102	FM46191523	Extractor Adapter M14	
TILTING	FM46195201	600x400 mm		FM46191525	Extractor Adapter M26	
	FM46195202	500x500 mm		FM46191510	Pin and bush extractor	
FMZ	FM46195203	600x500 mm				
	FM46195204	800x600 mm				
	FM46195205	1000x500 mm				
	FM46195206	1000x600 mm				
PLATES	FM46195207	1000x800 mm				
	FM46195208	1000x1000 mm				
	FM46195210	800x800 mm				
	FM46195223	800X400 mm				
	PLATES ACCESSORIES		PAGE 105			
CUBES	FM71290172	Set for modular plate alignment				
	FM71290174	Set for mod. plate alignment L500				
CLAMPS	FM46191011	Plate cap M12 Ø18				
	FM46191012	Plate cap M12 Ø20				
	FM46191016	Plate cap M16 Ø24				
ACCESSORIES	FM71290181	Loc. pins exp. Ø16 - 12-22				
	FM71290182	Loc. pins exp. Ø16 - 14-16-18				
	FM71290183	Loc. pins exp. Ø16 - 10-20				



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