

QC Tool Rack for the PM-1340GT Metal Lathe

There are additional details about my QC tool rack [posted here](#).

But basically, it's a modular system built around inexpensive off-the-shelf aluminum extrusions, with individual tool mounting platforms for each tool that are attached to the extrusions with screws and flat t-nuts. This way, the individual tool holders can be moved around to accommodate the differing width of the various QC tool holders.

Here's an overview of the rack with the individual tool mounting platforms bolted to the extrusions. This was the prototype – I ultimately added a third rail to support more tooling (see below).



These are the individual tool mounts prior to pressing in the dowel pins. I decided to mill them with a registration notch on the back that hang over the mounting rail extrusions, but that was total overkill. The material is 1/4" thick 6061 aluminum flat stock.

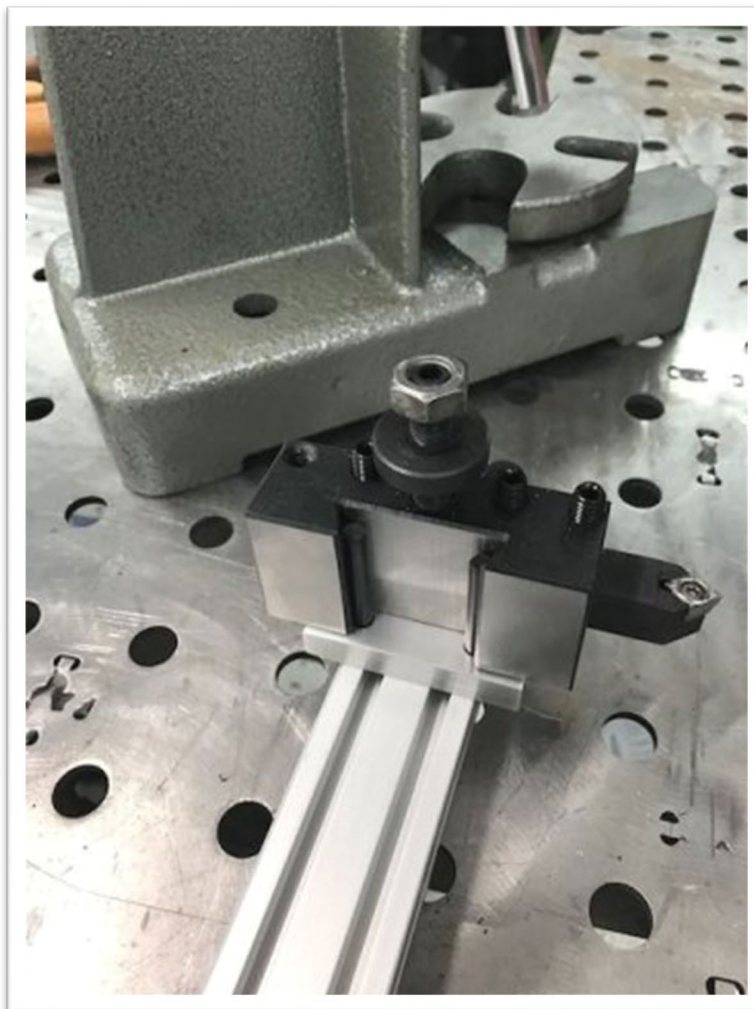


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These are the dowel pins I used. IMO, this company (Holo-Krome) makes the best pins and screws/bolts in the world.



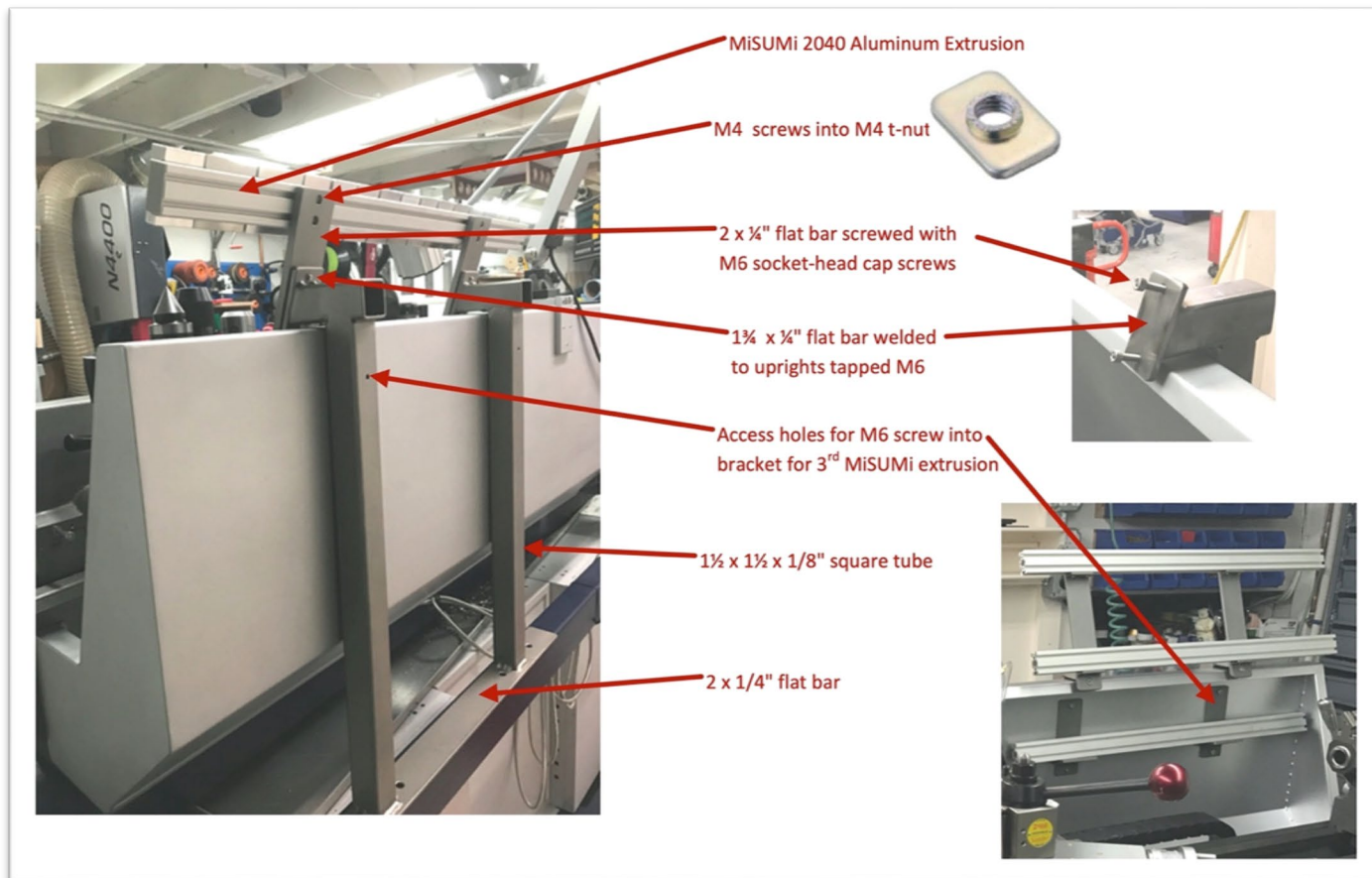
I pressed those pins into the holes of each tool mount using a small arbor press you can see on the bench in the photo below, but they could just as easily been pressed in using the machinist vise on the mill to compress them into the holes. The pins are 0.250" diameter, and I drilled the holes for them using a Letter D sized drill bit which is 0.246" diameter. They are not coming out!



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The tool rack is a welded stand that bolts to the back side of the lathe stand. The uprights are 1.5 x 1.5 x 1/8" square tube. The uprights are welded to a baseplate that is 2 x 1/4" flat bar which is in turn bolted to the machine stand. The individual QC tool holders mount to 20x40 aluminum extrusions.

I started with two rows, then reconfigured it to have three rows with one of the rows attached to the stand through the splash guard. I placed a second order for the 3rd rail about a month later (invoices shown below). The extrusions are 2040 from Misumi. I used plastic endcaps on each of the three extrusions to finish them off. The individual aluminum tool holder blocks are drilled and counter-bored in two positions and attached to the extrusions with M4 screws into square nuts in the t-slots of the extrusions. The nuts I ordered from Misumi that fit the t-slots (you can see all this on the two attached invoices).




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Below are photos of the completed rack with all the QC tools mounted.



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Shown below are the invoices for the aluminum extrusions, screws, and flat t-nuts I used as the mounting rails so you can easily source them if you want.



MISUMI USA, INC.
www.misumiusa.com

USA: Misumi USA, Inc. 26797 Network Place Chicago, IL 60673-1267
CANADA: PO Box 15001 Station A Toronto, ON M5W 1C1
Phone: 800-681-7475 Fax: 978-367-2729

To receive invoices via E-mail
contact us at
gogreen@misumiusa.com

Credit Card Invoice

Invoice Number: LN60035654U3
Term: Credit Card
Invoice Date: Nov 23 2016

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Bill To: WL2338
BEST SERVICES
1000 W. 10th St.
Tulsa, OK 74103
Attn: DAVID P BEST

PO Number: Lathe Rebuild 067
Order Number: WP0161654600
Order Date: Nov 17 2016
Trade Term: FOB Torrance, CA

Ship To: WL2338
BEST SERVICES
1000 W. 10th St.
Tulsa, OK 74103
Attn: DAVID P BEST

Shipping Number: LN60035654U3
Tracking Number: 1Z100R400242582360
Shipping Date: Nov 23 2016
Customer Ship Mode: UPS D9 PRE


No	Product_Code	Product_Name	PO Sub Reference	Qty	Unit Price	Amount
1	HRLC55-710	SHEET INSERT		4	4.04	16.16
2	HFS5-2040-710	Aluminum Extrusion		2	7.66	15.32
3	HNTC5-5	Nuts for Aluminum Extrusions		10	0.66	6.60
4	HNKK5-4	Square Nut		1	19.32	19.32
5	HFC5-2040-S	ALUMINUM FRAME		4	2.13	8.52

Remarks:

Invoices can be downloaded at
www.misumiusa.com/AR
Any questions - Call: 1-847-843-9105 #5 or
Email: ar@misumiusa.com

Sub Total: 65.92
Shipping & Handling: 10.70
Misc Amount: 0.00
Tax: 0.00
Grand Total: (USD) 76.62

Please allow up to 1 week to process the credit card. To avoid duplicate payment, do not issue a check.



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www.misumiusa.com

USA: Misumi USA, Inc. 26797 Network Place Chicago, IL 60673-1267
CANADA: PO Box 15001 Station A Toronto, ON M5W 1C1
Phone: 800-681-7475 Fax: 978-367-2729

To receive invoices via E-mail
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Credit Card Invoice

Invoice Number: LN70001587U3
Term: Credit Card
Invoice Date: Jan 17 2017

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Bill To: WL2338
BEST SERVICES
1000 W. 10th St.
Tulsa, OK 74103
Attn: DAVID P BEST

PO Number: Lathe Upgrade 2
Order Number: WP0179207500
Order Date: Jan 16 2017
Trade Term: FOB Torrance, CA

Ship To: WL2338
BEST SERVICES
1000 W. 10th St.
Tulsa, OK 74103
Attn: DAVID P BEST

Shipping Number: LN70001587U3
Tracking Number: 703049073185
Shipping Date: Jan 17 2017
Customer Ship Mode: UPS D2 PRE

No	Product_Code	Product_Name	PO Sub Reference	Qty	Unit Price	Amount
1	HFC5-2040-S	ALUMINUM FRAME		2	2.13	4.26
2	HFS5-2040-710	Aluminum Extrusion		1	7.66	7.66

Remarks:

Invoices can be downloaded at
www.misumiusa.com/AR
Any questions - Call: 1-847-843-9105 #5 or
Email: ar@misumiusa.com

Sub Total: 11.92
Shipping & Handling: 21.84
Misc Amount: 0.00
Tax: 0.00
Grand Total: (USD) 33.76

Please allow up to 1 week to process the credit card. To avoid duplicate payment, do not issue a check.