

Aster Berkshire Kit Building Log A Compilation of Several Threads Part B

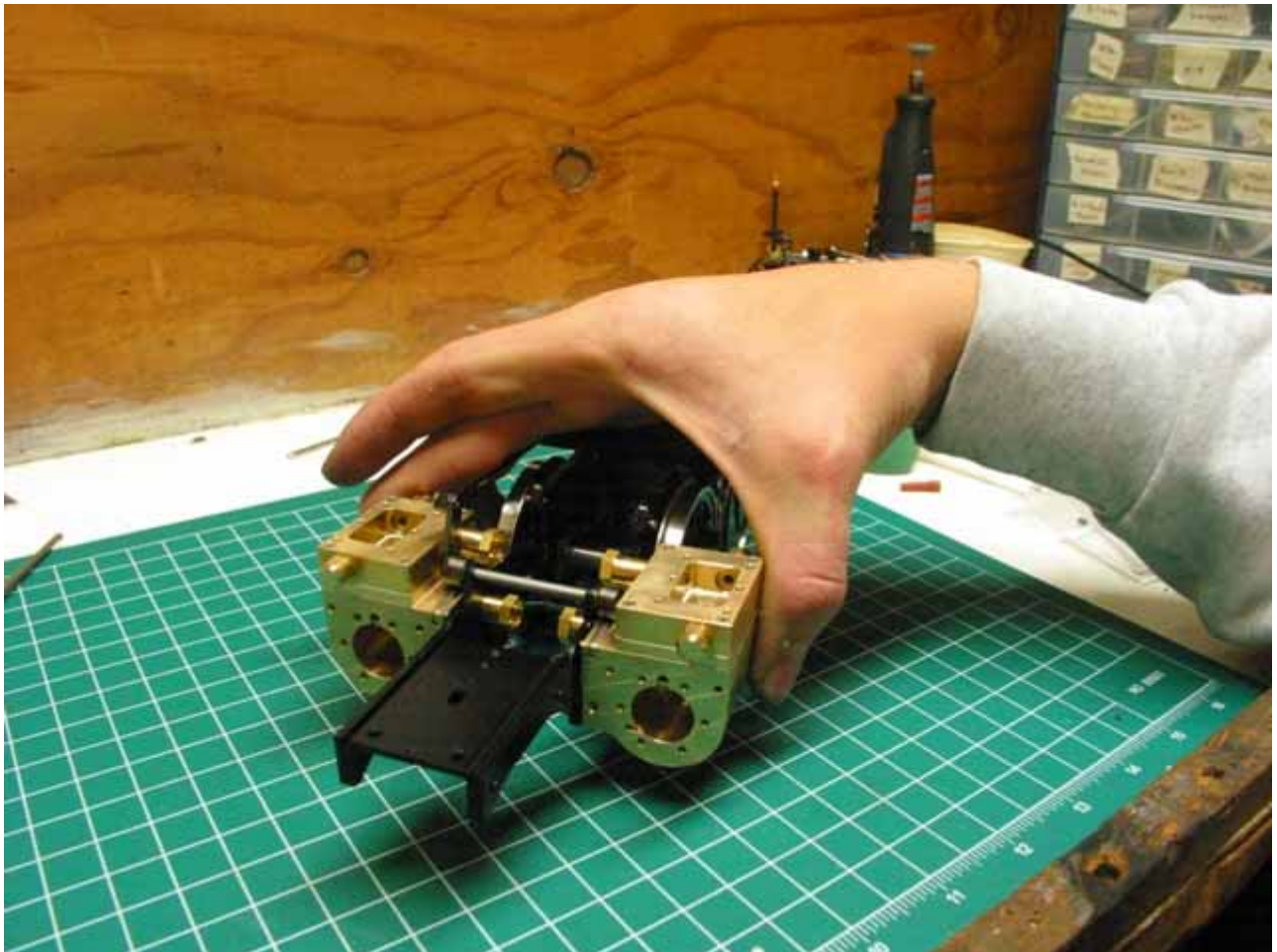
Part IV - Berkshire kit cylinders:

Original Topic URL: http://www.mylargescale.com/forum/topic.asp?TOPIC_ID=35018

Topic author: Charles

Posted on: 27 Nov 2005 19:33:41

The main portion of the cylinders has been completed. We need to do the "D" valve, pistons and connections but the body is intact as a single unit:



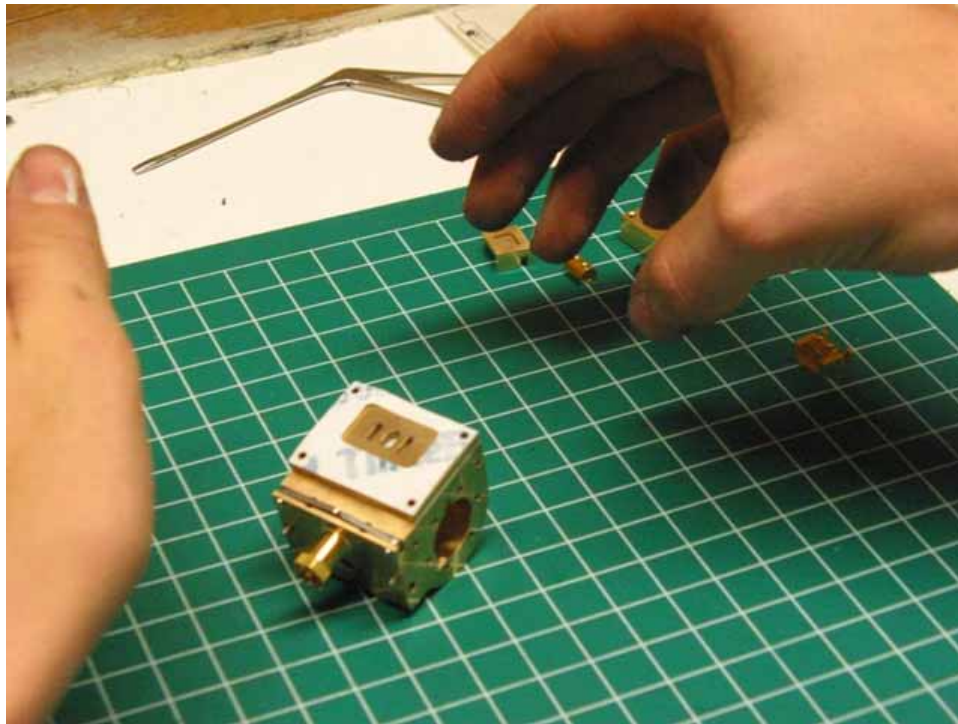
There are some basic but very important step to ensure proper seal, alignment along with understanding the unique aspects such as the drain cock mechanics:
All the basic parts for the cylinders-



Fundamental start is to lap the cylinder surfaces (about 500 strokes) to ensure no imperfections or slight variances are even out:



Then there is the technique of preparatin and application of the gaskets:



More detailed photos of in-between steps tomorrow.

Replies:

Reply author: Steve S.

Replied on: 27 Nov 2005 21:33:31

Message:

From the look of those cylinder's, pulling 60 or more cars should be no problem. 🍀😊🙏😊🙏

Reply author: Charles

Replied on: 28 Nov 2005 10:42:08

Steve

The cylinders are the same size as the Aster GS4, a bit smaller bore (15 mm vs. 17 mm) relative to Accucraft GS4.

Unfortunately, with the restriction of editing and our personal time I could not place the remain of the photo in sequence so all will have to go to and from prior photo to link the step.

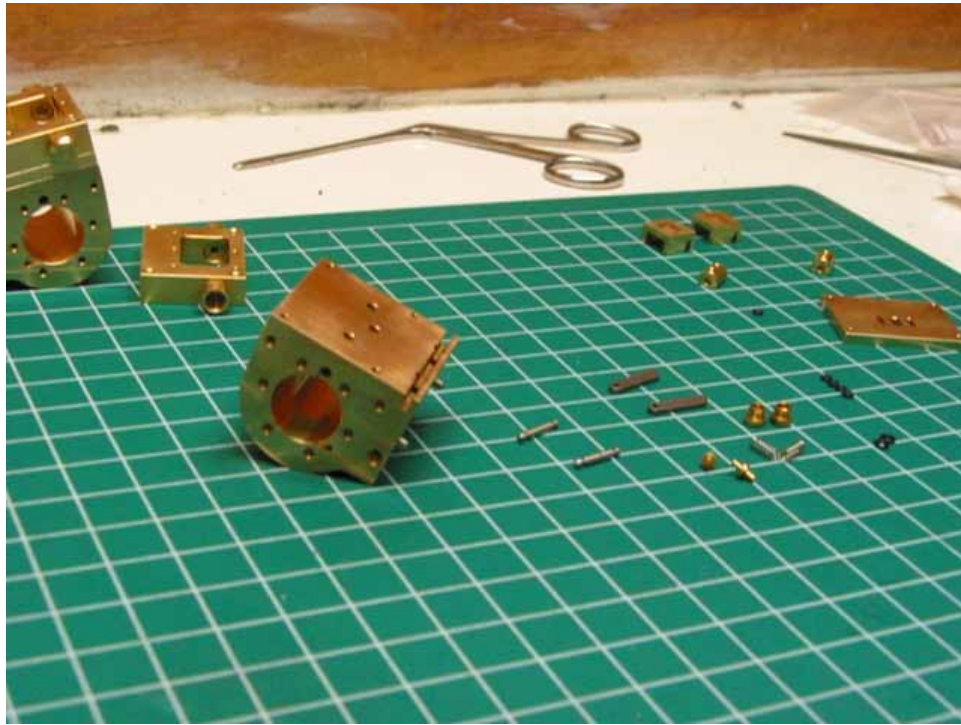
The process of building most major components involves the assembly and application of substance to prevent leaks (as with any steam vessels, leaks are not what you want having spent many hours assembly then have to disassembly):



Prior to the application of gasket material we had dry fitted the part, as we do with most to be sure we have the correct application. So times the part looks like it could fit either way or wrong size screw, etc:

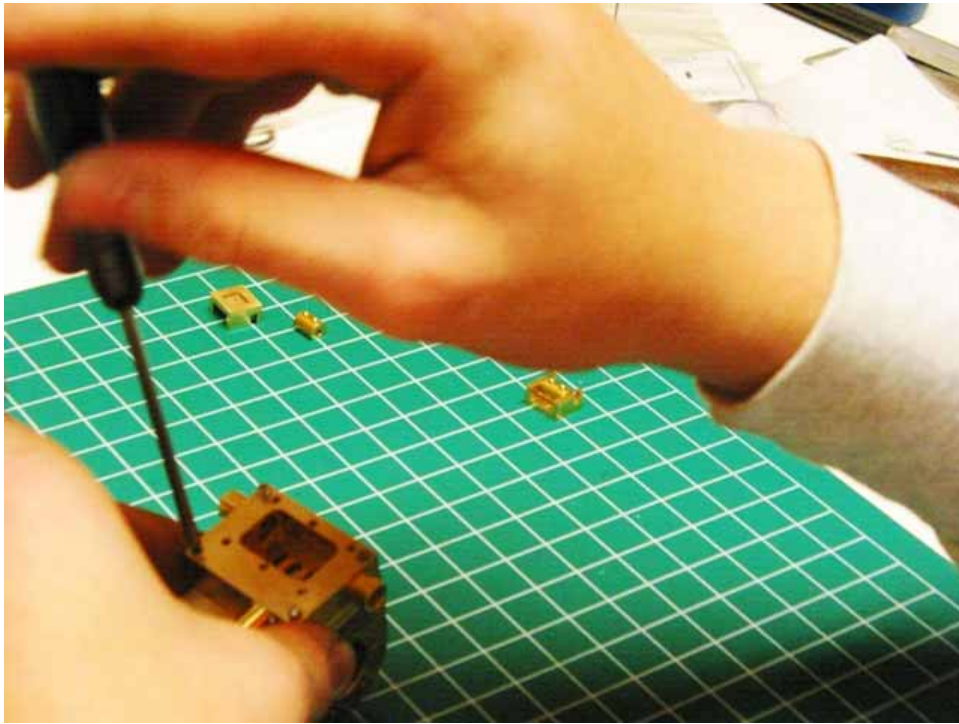


The preparation of the drain cock parts as the assembly begins:



The "patty" finger application of the gasket sealant onto the gasket seems to allow just the right amount of coverage:

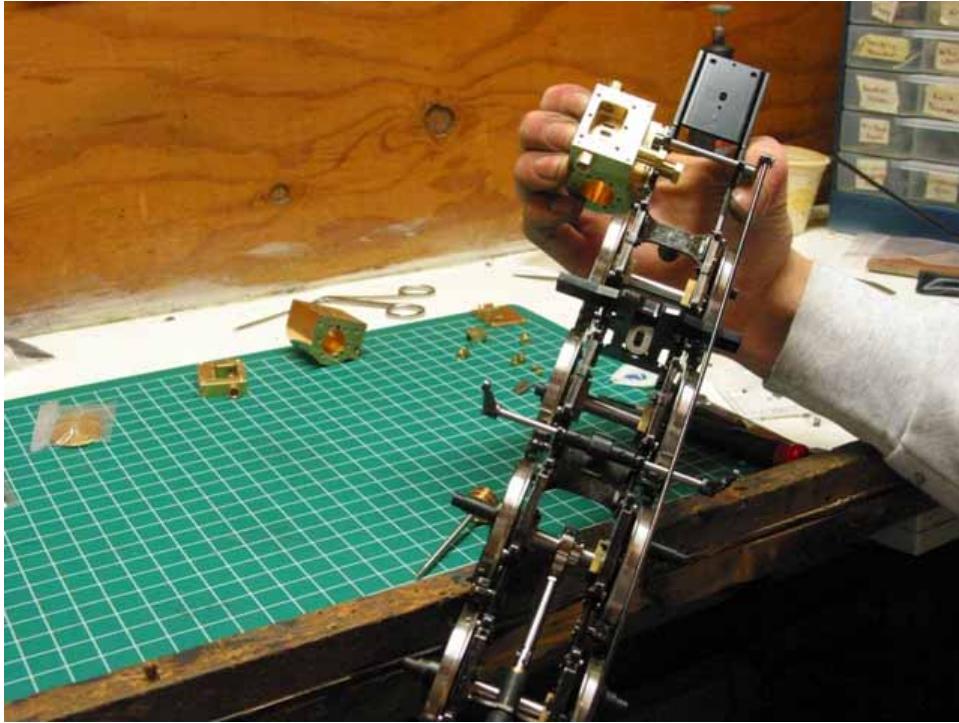
Then it is getting the three pieces of the cylinder aligned and screw it into place:



As with all the steps, once completed best to wipe down the assembled parts (removing excess gasket adhesive):



Having completed one cylinder it was a test run of the amazing drain cock mechanism from the stand point of the lever action from cab area and the cylinder action; worked great:



Reply author: sdimaggio

Replied on: 28 Nov 2005 15:09:59

Charles,

You are working this boy hard! Thanks for doing this...I finished pilot and trailing truck yesterday and started the frame...my son let me do that much yesterday.

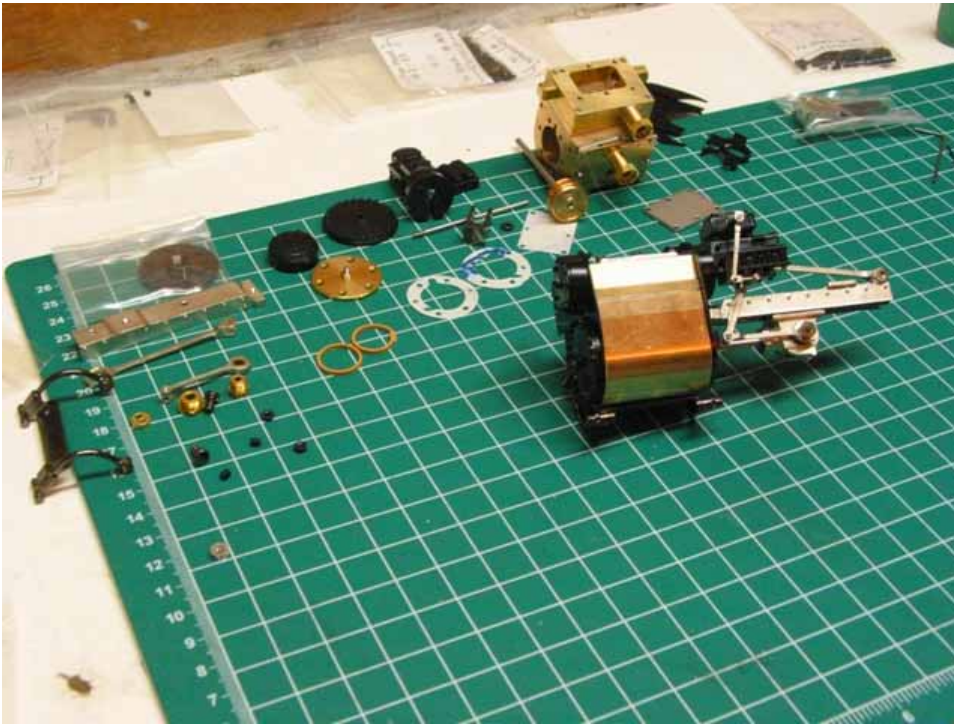
Sam

Reply author: Charles

Replied on: 28 Nov 2005 19:23:24

Sam

After school work, Ryan with my fatherly advise and supervision (strong on the supervision) had a building session of 3.25 hours (now about 23.5 hours total) in completing a cylinder:

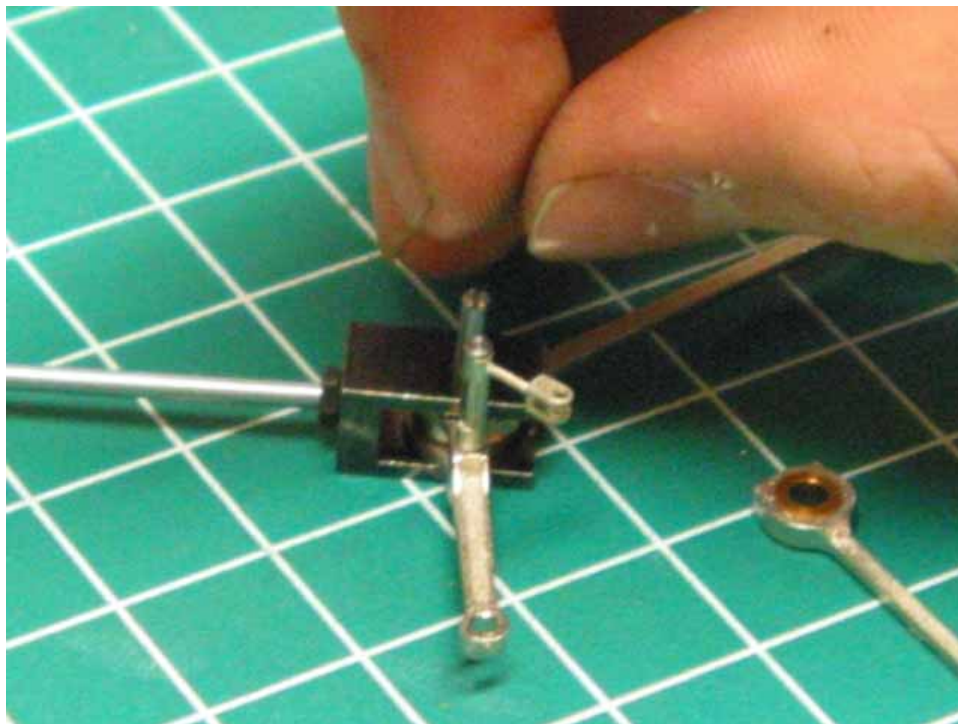


Really looks impressive but wait until we highlight the numerous parts, in particular the various very, very, very small parts.

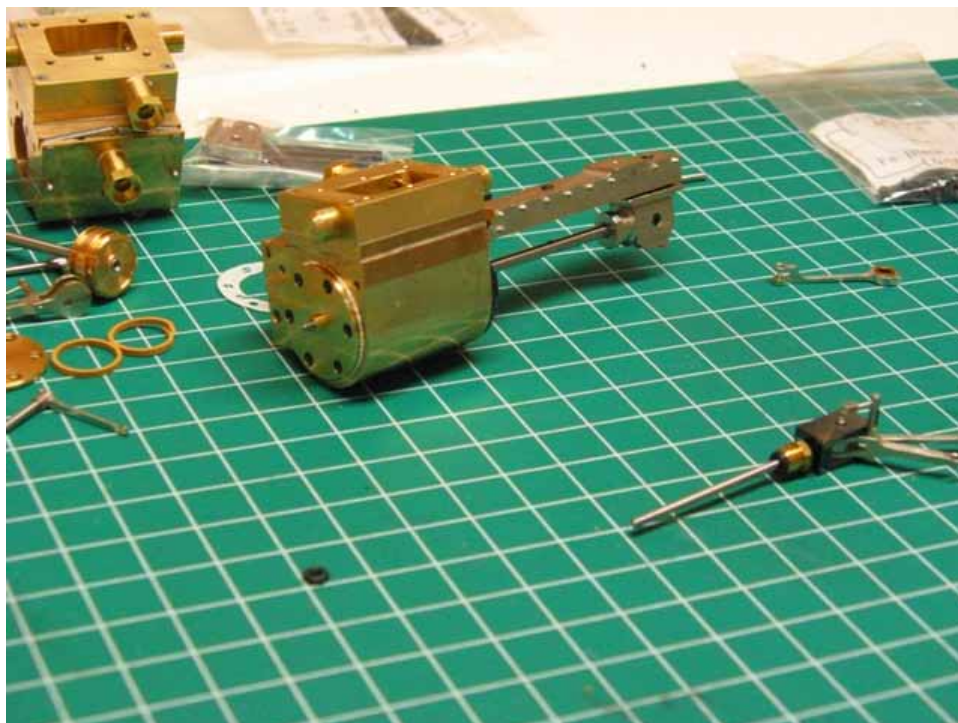
So, the cylinder has to have it's "top hat" and over coat to be prepared for an evening out escorting the ladies down the line:



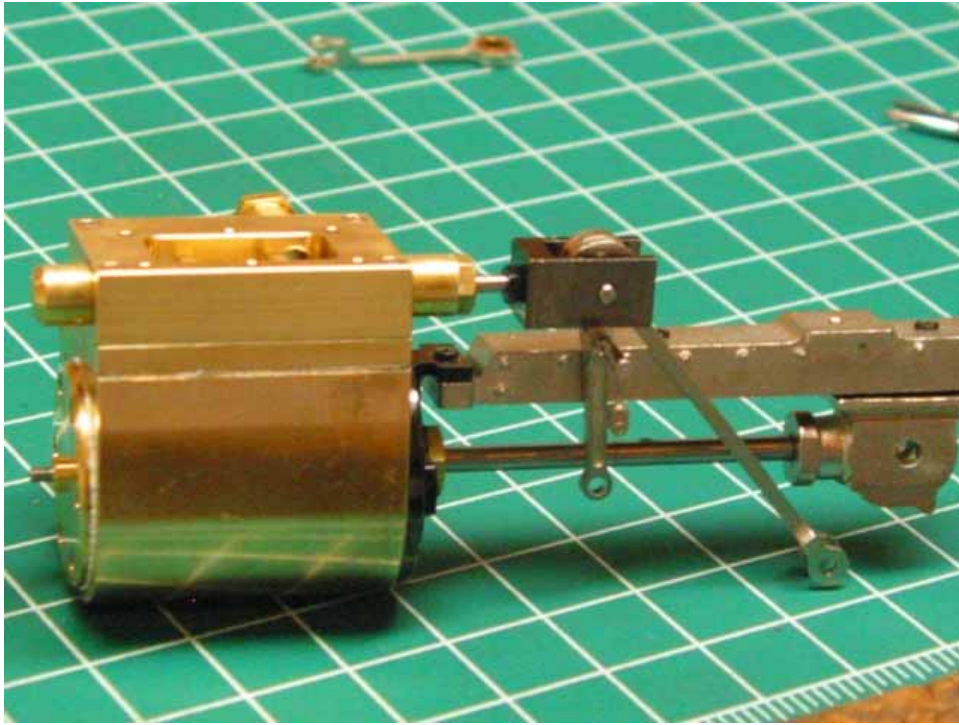
The development of the completed cylinder required many many small steps:



The valve gear connecting rods were joined together in preparation to join with the cylinder block:



Next cylinder we will detail the "D" valve along with connections with the Baker valve movement.



Reply author: JEFF RUNGE

Replied on: 01 Dec 2005 20:02:52

IT'S ALIVE !!!!!!!!!!! ran it on air tonight. smooth as silk, pressure on regulator: not enough to register 1 psi.

Jeff

Reply author: Charles

Replied on: 01 Dec 2005 20:04:40

Message:

Jeff

Not alive yet.....only on life support!

You are a step ahead, but will get it on air then steam this weekend!!!

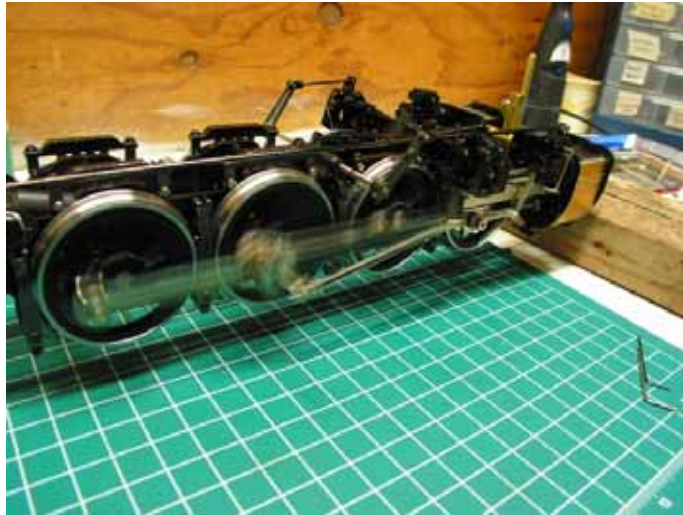
Part V - Aster Berkshire Kit- Air and STEAM test:

Original Topic URL: http://www.mylargescale.com/forum/topic.asp?TOPIC_ID=35145

Topic author: Charles

Posted on: 02 Dec 2005 17:37:22

Another building session of 2.75 hours for a total building time of 26.25 hours. The building of the Baker valve gear, side rods, timing and connection of cylinders will be in this section. We are doing a short video clip of the air test run, until finished here is a photo of the running gear in action:



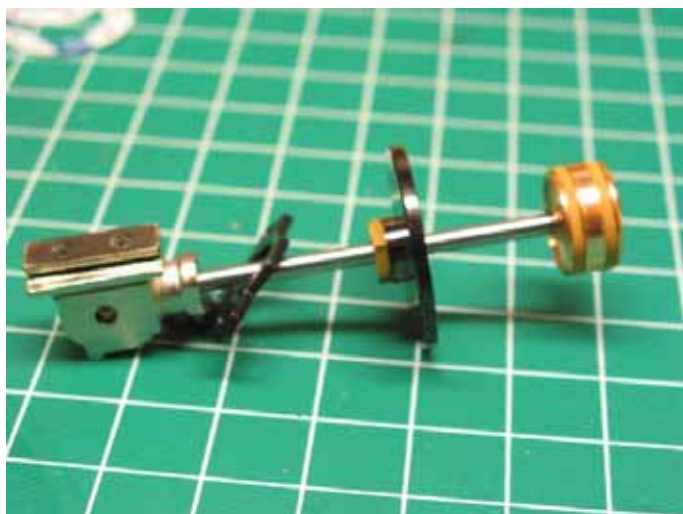
Replies:

Reply author: Charles

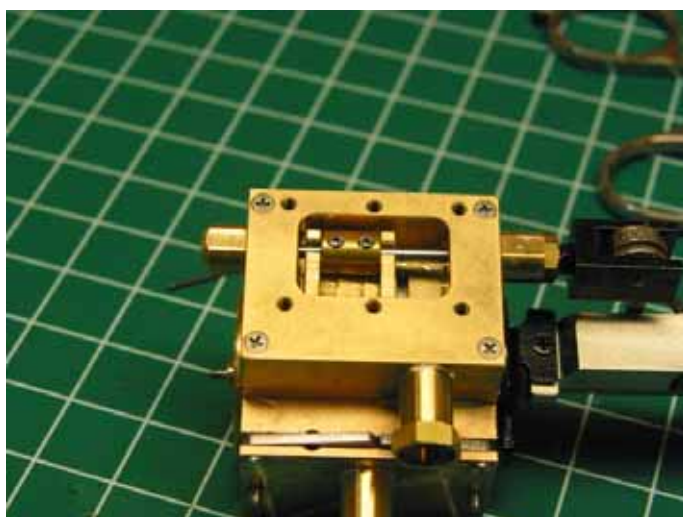
Replied on: 02 Dec 2005 18:16:47

The two main components of getting to the point of running would be connecting all the main parts and timing. To complete the cylinders requires the setting of the piston and "D" valves:

Piston-



"D" valve (will did does kinda look like "D"):



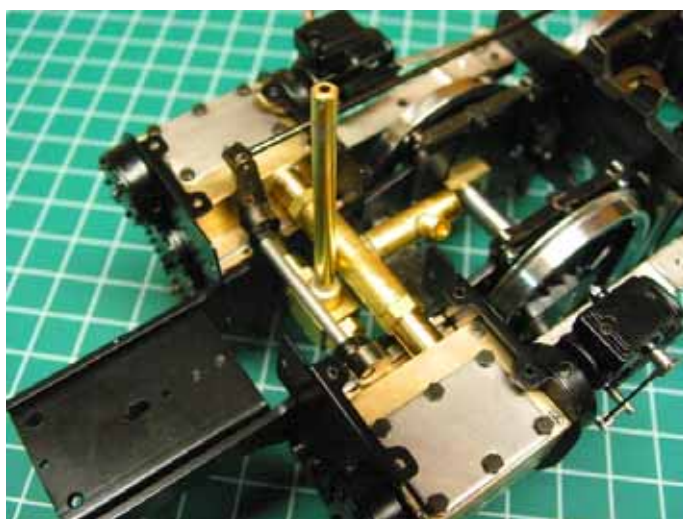
The coordination of all the movement comes about with the Baker valve gear:



Here are all the different major pieces that will be put onto the frame setting up the actual timing and running:



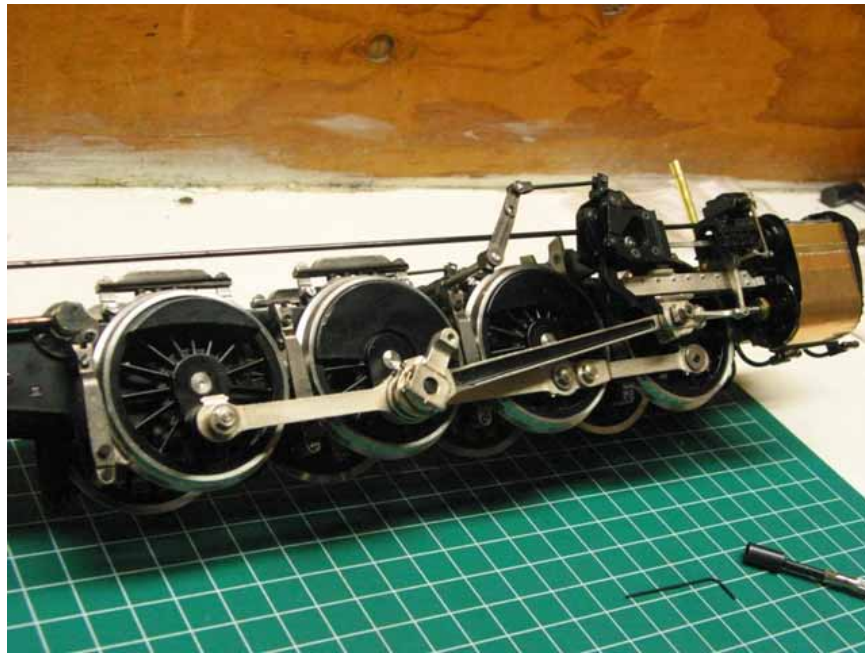
Once all parts are installed the frame will contain cylinders, exhaust line (tall piece in middle) steam inlet "T", baker gear:



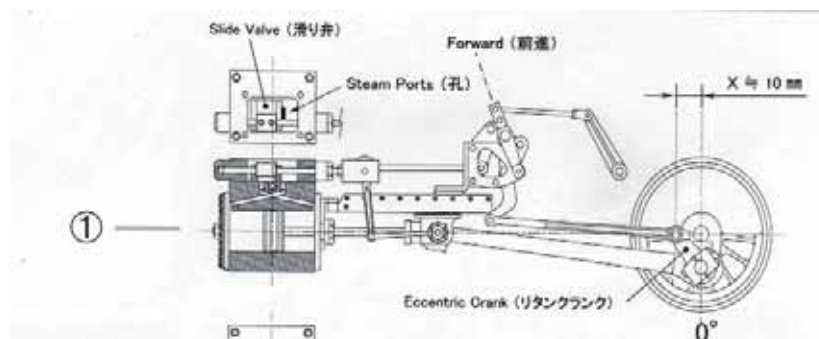
Then comes the connecting rods:



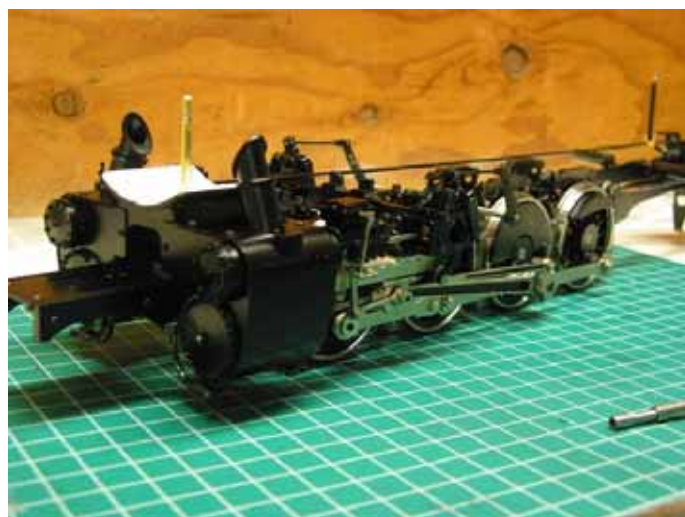
So the complete setup, note to the trained observer; there is a mistake in this photo can you tell it?



Timing- look at the second photo in this reply combined with the prior photo (where is the mistake?) then reference this drawing to understand somewhat the basics for timing the engine:



Well, it's all dress and awaiting that "hot" long vessel to get things steaming:



Reply author: Charles

Replied on: 03 Dec 2005 07:45:21



The above photo is running in full forward about 60 PSI

Here is a run using the drain cocks:



So, where is the boiler? How did they do that?

A joint venture between Aster and Saito:



The video-

<http://1stclass.mylargescale.com/ryechaz//Berk%20test.MPG>

Reply author: JEFF RUNGE

Replied on: 03 Dec 2005 15:43:58

Boiler assembly pressure test complete. On to the "details" section of the boiler shell.

That look like too mich fun Charles. Get back to work!

Jeff

Reply author: Charles

Replied on: 03 Dec 2005 16:22:56

Jeff, still got the tender to go....while for tomorrow could have another video with steam pressure without Saito assistance!

Reply author: cliffordddward

Replied on: 03 Dec 2005 19:13:27

Charles:

I'm sure I speak for many when I say thank you for posting your progress as you "build the Berk". I did not realize just how much Aster steam locomotive models are true to prototype....Viewing the model detailing through your postings really gives me an idea of why Aster models are so popular.

Reply author: Steve S.

Replied on: 04 Dec 2005 04:45:31

I did not realize just how much Aster steam locomotive models are true to prototype.....

Makes you realize that the price for the Berkshire kit or RTR is very resonable when you consider the detail and quality of parts.

Part VI - Aster Berk Kit: Boiler: Air tested

Original Topic URL: http://www.mylargescale.com/forum/topic.asp?TOPIC_ID=35169

Topic author: Charles

Posted on: 03 Dec 2005 16:05:01

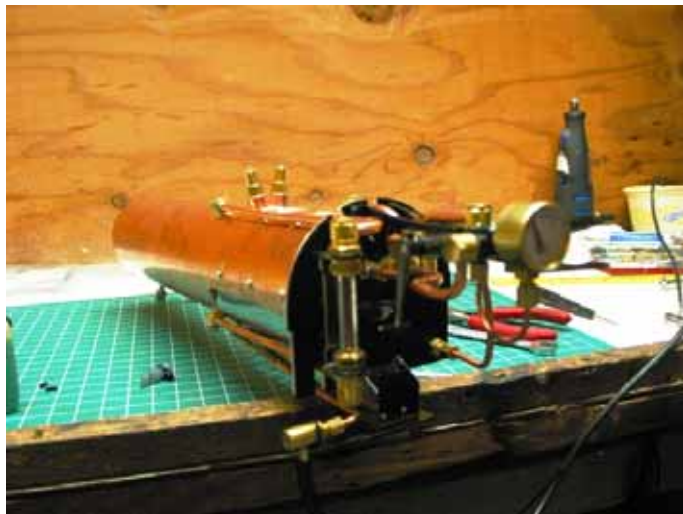
Building log time today is 3.25 hours for a total project building time of 29.50 hours.

A look at the heart of the beast:



The flames off the wicks are 6" in the air. Great heat generated.

Air testing of the boiler at 20PSI on the gauge and able to blow the whistle. The boiler and all fitting held the pressure:



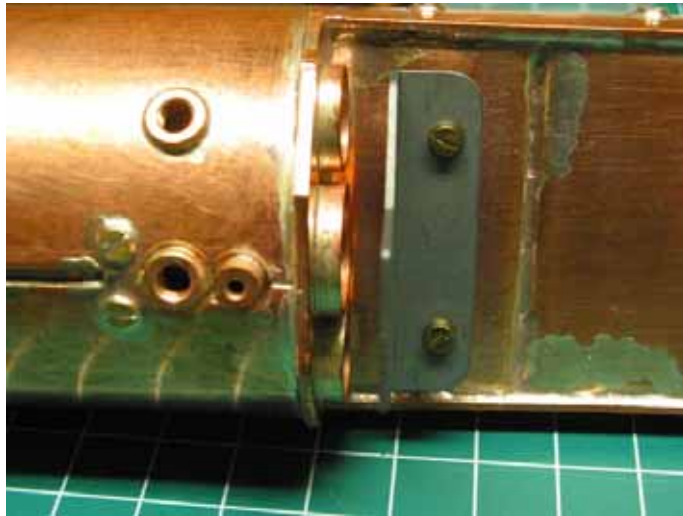
Here are all the components necessary to connect to the boiler either on the input side or output capacity:



So, what is this?



Well, it's a piece to keep the firebox warm and cozy and not allow the flame to have a direct pathway into the flues:



Baffle...

Speaking of flames, got to have a firebox to contain the fire, there is the layout for it:



Prepared firebox and ash pan unit basic structure.



An important component to the firebox is the firebox door:



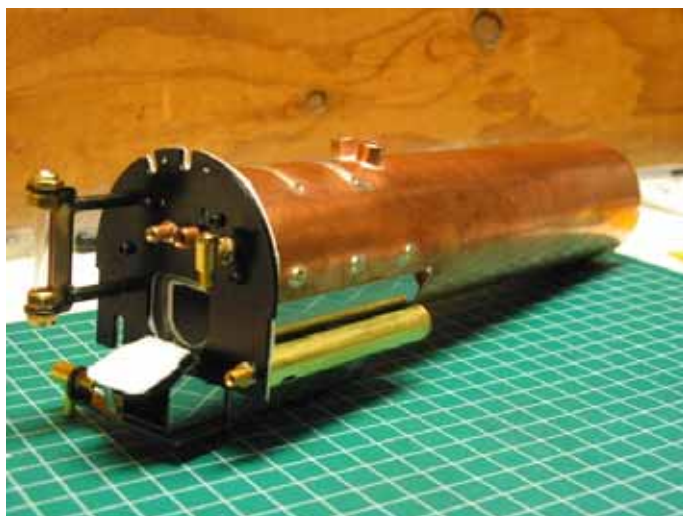
The ability to know water level is key to keep a steam engine in prime running pressure, sight glass parts:



Dressing up the over all back head:



What engine is complete without a good whistle?



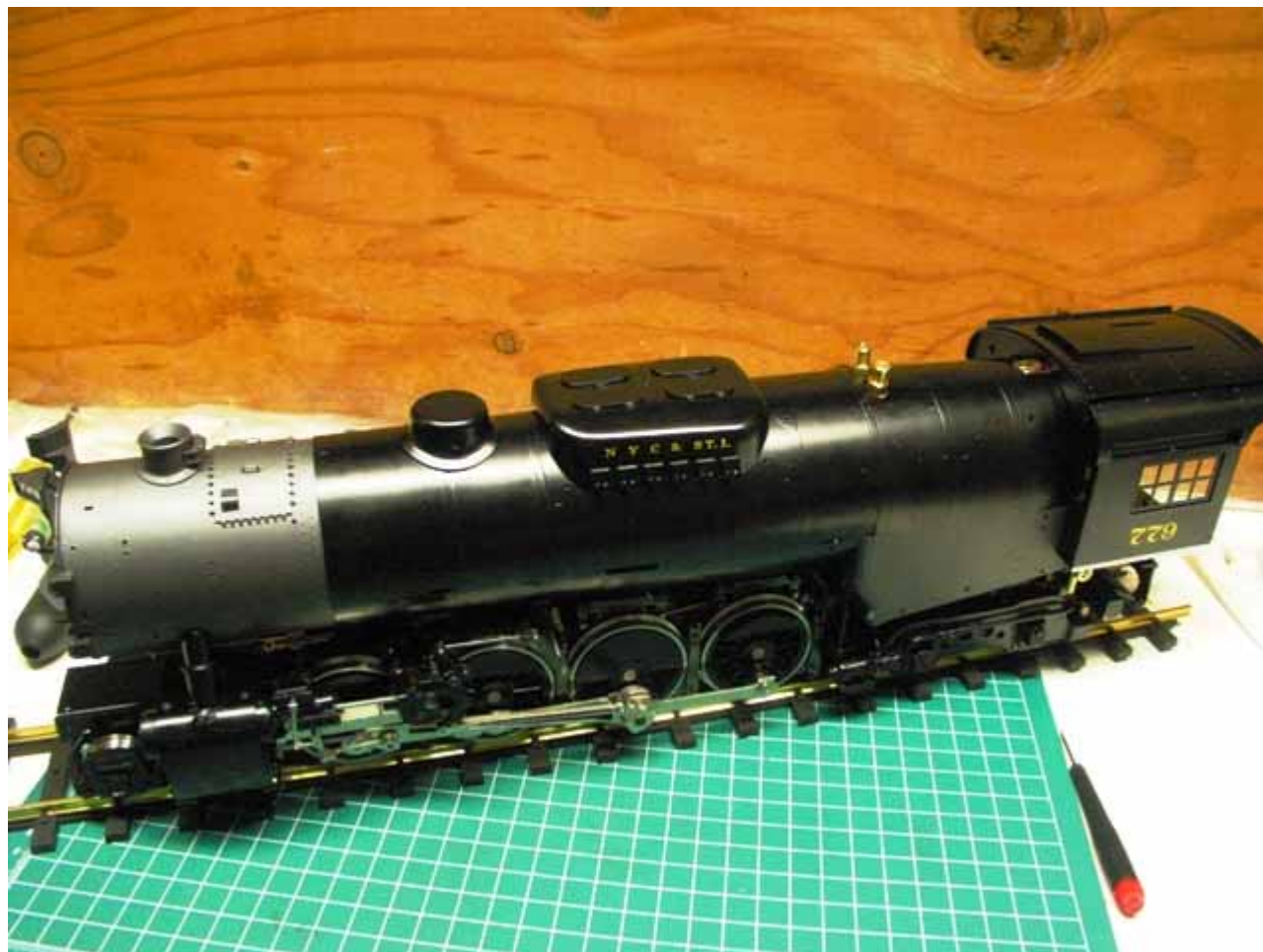
Completed today, throttle, blower, whistle valve and burners.

Now the sneak preview of things to come....

Backhead preview with boiler jacket on for fitting and clearance-



So, at the end of the day (hmm...Ryan is still in the workshop and dinner is not served yet..) here is where the engine stands (by the way Jeff how's the tender coming along!!!!)



Could be a test firing of all systems tomorrow!

Part VII - Berkshire #001: Details, Finishing & VIDEO!:

Original **Topic URL:** http://www.mylargescale.com/forum/topic.asp?TOPIC_ID=35193

Topic author: Charles

Posted on: 04 Dec 2005 19:24:59

After working 9 hours today to get the details onto the boiler shell (more time than the tender)and connect all the pipes it's done. So, congratulations to Ryan for his efforts to keep it going long after I faded away (especially those tiny tiny screws).

Aster Berkshire kit #001 engine is on display (but not for long)after 38.50 total hours:



Front view of 779:



I am sure that Jeff was sitting back with a relaxing day having finished prior to lunch...

More photos of the step process of detailing the engine and boiler tomorrow. Hoping to test fire this week.

Replies:

Reply author: Charles

Replied on: 05 Dec 2005 05:07:03

The beauty of this kit is not so much the kit it's self but a true father/son project. Nothing in the instructions or the cost of the kit could be as much value as the moments shared working together. Appreciate the kind words, our purpose was to give some insight to an Aster Kit and to encourage others to build any kit as an opportunity to understand the fundamentals of the process (maybe a little about steam engines).

For all those who expressed best wishes towards Ryan's academics, rest easy; top priority!(honor roll).

Reply author: Dougald

Replied on: 05 Dec 2005 05:13:55

Congrats Charles to both you and Ryan. An excellent set of pics to describe the process ... and I am certain that many builders will take far longer than the time you recorded.

Regards ... Doug

Reply author: Charles

Replied on: 05 Dec 2005 08:17:35

Doug

The only purpose of time was to mark the building process. We were not making it a "got to get it done first" situation, just had the opportunity to work on it as we had time(I know you are not suggesting that). Ryan and I encourage any builders to work at a comfortable pace. We will make a summary page of step(s) we found that a sequence caused double work or how to determine orientation of a piece, etc.

Bottom line, great experience of which any average person not only can achieve but do it if there is the opportunity.

Reply author: Charles

Replied on: 05 Dec 2005 13:42:19

So what took so long to in getting some details on the boiler jacket, smokebox pilot and a cab? Here is an overview of all the parts for each major area connected to the boiler jacket:

Jacket parts-



To complete boiler jacket-



Smokebox parts-



Smokebox completed-



Front pilot parts-



Running boards-



Running board running the length of the boiler-



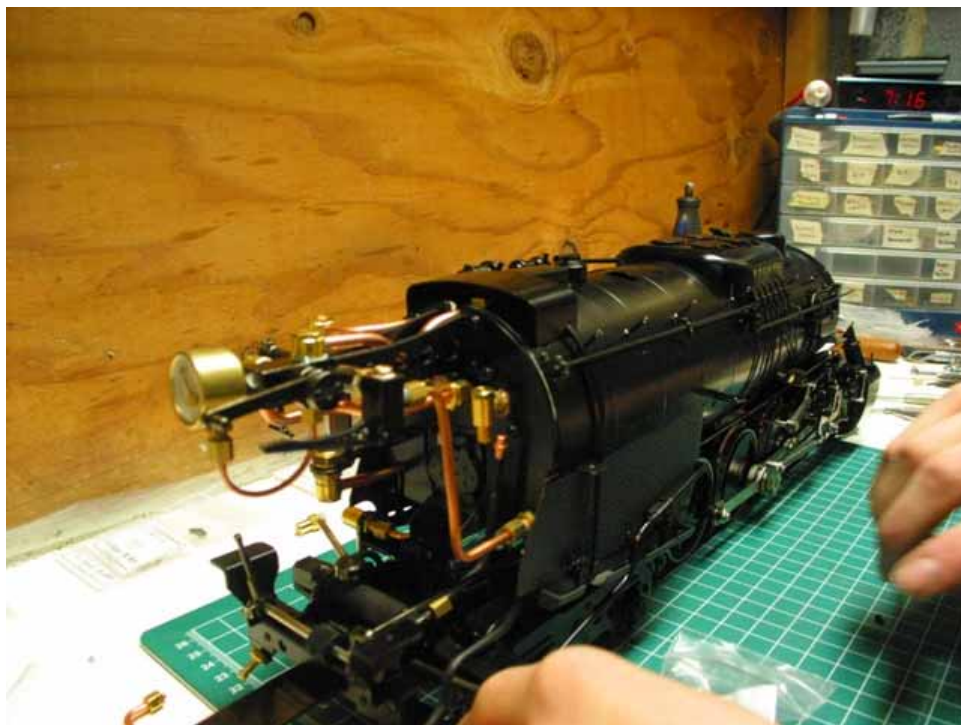
Cab parts-



Cab- almost complete needs handrails:



At the opposite end is the backhead getting ready to connect the water check valve pipe (upper corner engineer side-right nearest Ryan):



Then there are the connections with the boiler to the exhaust, the oiler to the cylinders, the reverser, check valve, lagging, bending of all the piping and of course all those tiny, tiny screws!

Reply author: Charles
Replied on: 05 Dec 2005 16:23:12



Berkshire is set on rollers for final check. Connections made fuel flowing, water holding in tender, hand pump works, oops maybe not- seems to be a blockage. Had to take apart the lines, axle pump and check valve and found the instructions to be wrong- corrected it.

So back to staging the engine for test fire. Water,oil,fuel, (disconnect smoke detector) and success as Ryan is at the controls:



IT'S FULL STEAM AHEAD (Video after dinner):



Some minor adjustments such a throttle linkage, a bit more lube and learning sweet spot on the bypass but it was a grand to see and hear it run.

Reply author: Charles

Replied on: 05 Dec 2005 18:11:12

For your viewing pleasure, the video clip is about 10 seconds but you can watch over and over....while we are down in the shop running over and over!

ENJOY:

<http://1stclass.mylargescale.com/ryechaz//berk%20roll.MPG>

For those new to live steam sounds, as you listen you will hear the engine working harder, then see a stream of smoke/steam/water mist out the stack: the engine has primed, filled the boiler full through the work of the axle pump. We then know to cut back the bypass allowing water to flow (somewhat) back into the tender thus "bypassing" the boiler.

By the way the engine was only running a 1/8 throttle, we opened to 1/4 throttle and tried the bypass/axle pump... within seconds prime!

Also, note the drain cock(s) at work, let me tell you that they will shoot steam at least 2 feet away from the cylinders!

Reply author: JEFF RUNGE
Replied on: 05 Dec 2005 18:39:35

It's another fine Aster product, thanks Hans.

Charles, I had no problems with my water pump, assembly as per the assembly manual. What did you think Aster had wrong?
Jeff

Reply author: Charles
Replied on: 09 Dec 2005 15:53:53

Berkshire on the "Polar Express" run:
http://www.mylargescale.com/forum/topic.asp?TOPIC_ID=35318

Reply author: CCSII
Replied on: 06 Apr 2007 17:31:32
Message:

Charles, you left out a "/Video/" from your link.

It should be :

<http://1stclass.mylargescale.com/ryechaz/Videos/berk%20roll.MPG>

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