



GSPC Brinell Entry

Graphic Statistical Process Control
by MeltLab Systems
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Fast • Accurate • Comprehensive

GSPC Brinell Entry

- Brinell Data has several differences from normal foundry data entry
 - Sample sizes are generally more than one.
 - Brinell data needs to be translated from a diameter to a hardness number.
 - Brinells are part number specific and have ranges given by part number, and not the process specification.

Choosing a part

The screenshot shows a software interface for part identification. It features several input fields and buttons. The 'Corp Number' field contains '4TT0501' and is highlighted in green. The 'Part Number' field also contains '4TT0501'. The 'Cast Date' is set to '11/12/2013', the 'Shift' is '1st', and the 'Station' is 'BRINELL'. There are buttons for 'New Part' and 'New Record'. Below the main fields, there are sections for 'Hist Record' (19928), 'Part Record' (523), and 'Heat Code' (KJ3). There are also buttons for 'Part Recall' and 'Process Recall'. A dropdown menu at the bottom shows '11/12/13 01:51 1992'.


- To start, press the **New Part** button and enter in a part number and press enter.
- If you need to create a new record for the same part you currently have displayed, press the **New Record** button.
- If it is a recently processed part, you may be able to quickly find the part listed under Process Recall.
- Or if you need to recall a different record of the current part number, you will find the recent entries under **Part Recall**.

Choosing a part

Identification
Corp Number 4TT0501 Part Number 4TT0501 Cast Date Yesterday Today Shift 1st Station BRINELL
Hist Record 19928 Heat Code KJ3
Part Record 523
New Part New Record 11/12/13 01:51 1992 Part Recall Process Recall

- Set the cast date, or enter the Heat code to translate it back into the cast date.
- Clicking the Yesterday or the Today button will set the cast date accordingly. The shift box can be set to the shift the casting was made on.
- The time is set to the time the data is entered.
- Station is provided in case there are more than one Brinell stations.
- The drop down box in the center shows the last 20 samples of this part for easy recall.

Extended Sample Info

Sampling AQL Plan	Pieces Produced	Disposition	Tester
AQL 4.0		No Disposition	1. H1
Comment	Samples Required	Samples taken	Last Update
	0 1		11/ 8/2013
			

- The sampling plan is used by some foundries to determine the number of samples to be taken from a container or a production run.
 - Set the AQL sampling plan.
 - Enter the number of castings in that container or in that run.
 - Read the number of samples required by the AQL plan.
 - Compare with the actual number of samples taken.
- Disposition is recommended based on the test results.
- The Tester is the Brinell operator.
- The Checkmark button saves the data.
- The comment field is for the discretion of the operator.


Brinell Entry Area

Brinell	Brinell	Brinell	
212			

- The screen is setup to record up to 45 Brinells from one sampling.
- If you enter a Brinell diameter such as 4.15, the computer will convert it to the Brinell Hardness Number 212 as shown above. This has been setup to use the standard 10 mm Brinell at 1500 kg pressure.
- As you enter data and press the Enter key to move to the next cell, the statistical numbers will be calculated.

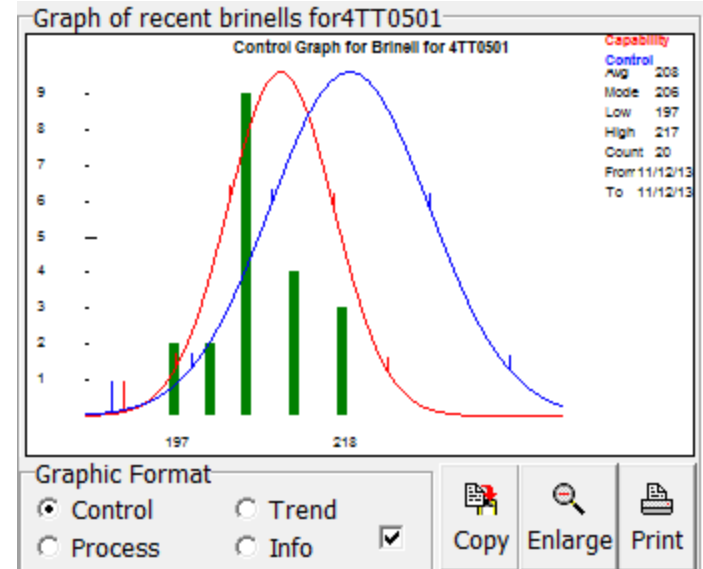
Sample Statistics

Actual Values		Engineering Values		Actual Statistics		Engineering Statistics		Summary Statistics	
Minimum	212	Minimum	187	Sigma	0.00	Engr Sigma	9.0	Count	1
Average	212	Average	214	Cp	0.00	Engr Cp	0.0	CpK High	0.00
Maximum	212	Maximum	241	CpK	0.00	Engr CpK	0.0	CpK Low	0.00


File

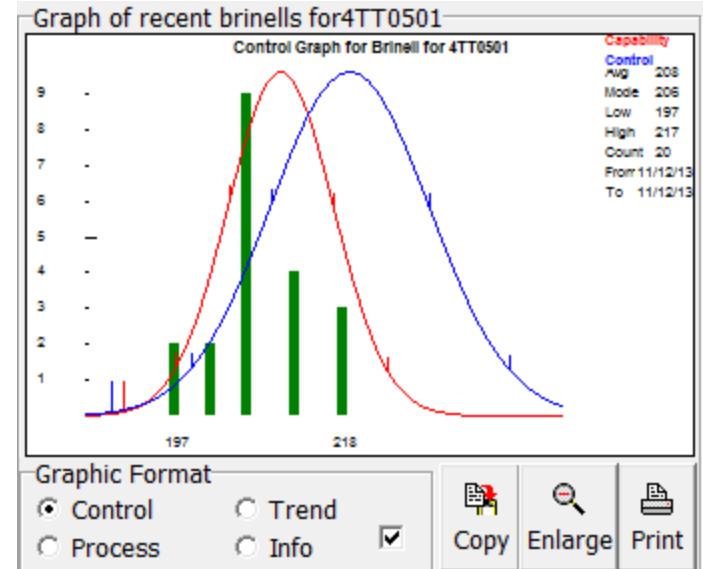
- Actual values are taken from the sample
- Engineering Values are taken from the Requirements of the part.
- Engineering and Summary Statistics are calculated from the samples on this record. For most statistical calculations to work, three or more samples need to be taken.
- To save the results, you must press one of the several green checkmarks on the screen to file the data.

Graphic Results



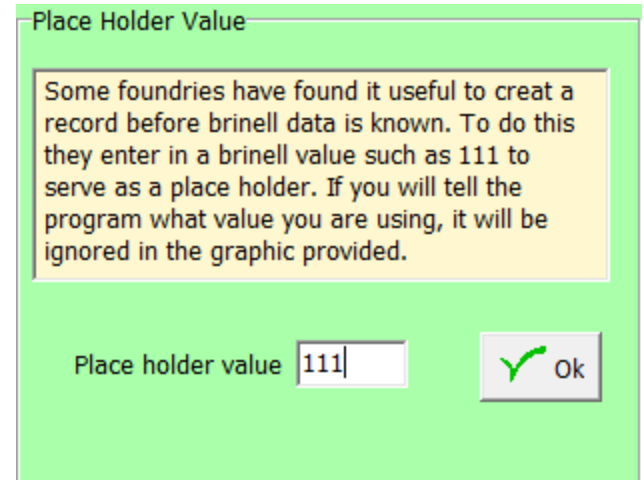
- The graphic has many uses and formats.
- Click the graphic and it expands to the full program window. Click the full graphic and it retreats again to the corner.
- Click Copy and you can paste it into Microsoft Word or Excel.

Graphic Controls



- The blue curve shows where the distribution should be.
- The red curve shows what the distribution actually is.
- Control format shows both blue and red curves.
- Process shows only the red curve.
- Trend shows no colored curves.
- Info shows no colored curves and no statistics on the right of the curve.
- The check mark tells the program to use the last twenty samples. Missing the check will show only the tests from this sample.

Place Holders



- If you have information on a part run today and want to prepare a space for that data for tomorrow or later, you can use a place holder value in the Brinell position.
- This command tells the computer to ignore this special value as a ***no test*** without rejecting the production run.

Part Recall

Rec 523	Time	Record	Part	# Sample	Min Value	Avg Value
11/12/13	01:34:53	19926	4TT0501			206.5
11/12/13	01:50:03	19927	4TT0501			217.2
11/12/13	01:51:04	19928	4TT0501			206.5
11/12/13	02:54:52	19930	4TT0501			196.5
11/12/13	04:06:32	19932	4TT0501			217.2
11/12/13	04:09:49	19933	4TT0501			206.5
11/12/13	04:23:36	19935	4TT0501			206.5
11/12/13	04:26:45	19936	4TT0501			206.5
11/12/13	04:58:05	19937	4TT0501			196.5
11/12/13	05:00:56	19938	4TT0501			206.5

- This button in the main screen shows the last twenty records for the current part number.
- Use this to recall a previous run and add more data to it.

Process Recall

Rec 8	Time	Record	Part	# Sample	Min Value	Avg Value
11/12/13	07:22:57	19949	05KA501-C			211.8
11/12/13	07:22:31	19948	4TT0501			211.8
11/12/13	07:22:09	19947	4TT0501			217.2
11/12/13	07:21:47	19946	4TT0501			211.8
11/12/13	07:21:28	19945	4TT0501			201.4

- Click on the Process Recall and the last 20 records from this Brinell station are displayed.
- This is great when you are processing several different parts during the day.
- If you need to add data to a record, double click the record and the part number will be set.
- If you need a new record, double click the part you need then press new record.

Other commands



- Arrow keys on the left let you move through the Brinell records one at a time.
- Arrow keys on the right let you move through the parts one at a time.
- The girl with a blanket is using a well known method of hiding (ask any young child) and will hide the last 20 records screen.
- The Red X box will close the program.