High Gravity Beers

Research material
The brewing network – Brew strong
How to brew
Mr Malty
Beer smith
Brewers Friend

What is High gravity?
1080 plus = High Gravity

1080 – 1016 = 8.6%
1100 – 1030 = 9.5%
1120 – 1030 = 12.3%
1120 – 1060 = 8.2%

Why are high gravity beers so good?
Because they just are
Just because its bigger doesn't make it easy
Harder to make, similar to pilsner
Increased Flavours
Bolder flavours
Harder to balance

Making a High Gravity beer what do we think about

In order

1. Yeast pitching rate
2. Fermentation temp
3. Mash temp and fermentability of the wort
4. Starting and finishing gravity
5. Recipe

Yeast pitching rate

Over pitching Vs pitching high

Dry yeast Billions of cells per Litre 1075 OG 20L Batch

Ale	**0.75**	**1.25**
Cells	14	23
Packs	1.2	2

Lager

Cells	27	32
Packs	2.4	4

This doesn't account for old yeast.

Mr Malty
Set for 60% Viability = High pitch, I generally pitch 50%
Beersmith roughly same
Brewers Friend about the same calculations with slightly numbers
MR Malty was by far the easiest to use.

Yeast Starter 1075 of 20L
Watch asking the yeast to grow too much
Ale 100% Viability

Growth factor 6	1 vial/pack	1.45L starter
Growth factor 2	2 vial/pack	1L starter

Ale 50%

Growth factor 6	1 vial/pack	3.59L Starter
Growth factor 2	3 Vial/pack	1L starter

Having enough yeast in solution is the most important thing.
Don't be a tight ass throw in some more yeast

Fermentation Temp

Start low
Pitch below ferment temp
Ferment low for the First 60-70% of fermentation
Ramp temp to keep the yeast momentum going

Example
1.100 US-05 = Chill to 10-12deg then ferment 14deg for 5 days then 21-22deg for remainder of ferment.

The first 60% of fermentation will determine the yeast profile

When pitching high the recommended temp is not necessarily the lowest a yeast will go

EG
White labs WLP099 Super High grav yeast
Recommended18-20deg
I used 13deg

Fermentis US-05 American Ale
Recommended 18-28deg
I've used 12deg

A strong fermentation will make or break your big beer.
Just because there are big flavours hiding flaws doesn't make it great.
People say a pilsner there is nowhere to hide, just look closer at your big beer.

Mash/ Mash Temp

Mash Low and long, step rest, get as much fermentability as possible.
Mash long

55deg, 5 mins
62deg 40- 60mins
68deg 40- 60mins
75deg 10- 20mins

Don't worry about drying the beer out, made right it will have enough body.
Set efficiency low and use more grain I work on 60% efficiency or lower and water down the beer before fermentation if needed.
As if that ever happened…
Mash ratio: Low mash ratio can cause fermentation issues. 3-1 preferably
You might get a higher gravity but risk cutting fermentation points off your FG
Add DME, don't be scared to add up to 30% dry malt.

Get the right Ph, Ph will play a big part, aim for 5.1

Starting and finishing gravity

Big beer = High finishing gravity. You don't want the beer too thin
If the beer stops early 1 You haven't followed the above steps
2 Does it taste ok?
3 1040-1060FG doesn't mean it's bad
4 If its sweet it will mellow
5 Blend?
6 Oak or add spirit

Recipe
If you haven't brewed it before going to a pro's recipe. They are tried and tested.
Resist changing things too much.
Brew once and then change 1 thing.
Resist adding stupid additions, adjuncts, fruits at first.
Remember the beer will mellow, Big beers can be aged 2-5 years no problems when done right.
Recap

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5. Recipe
6. No Kumquat

Good luck and happy brewing.