

Solo Work

2/17/23

19

- Getting familiar with AutoCAD
- Starting general sketches for physical components

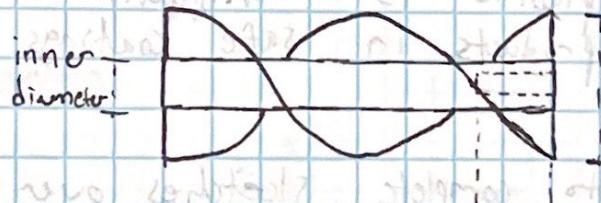
Spiral Mechanism

Outer Diameter



Front View

Length



Side View

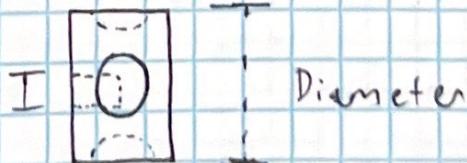
Motor
shaft
Attachment
Point

Spoon Mechanism (Idea)

Diameter



Front View



Side view

20

Team Meeting

2/17/23

1:55 PM - 2:21 PM in zoom

Catching up on work done.

Going over future goals/tasks and timeline

Budget/component list personal deadline: Wed 2/

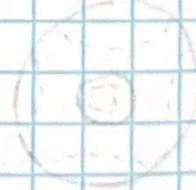
Need to bring 3D printer from Horne w/ materials

PLA plastic is technically food safe, but we'll coat products in safe coatings for safety

Goal to complete sketches over the ~~next~~ weekend

(prob) minimalist design

minimal



workable

workable

Lecture 5 2/20/23

21

8:00AM -

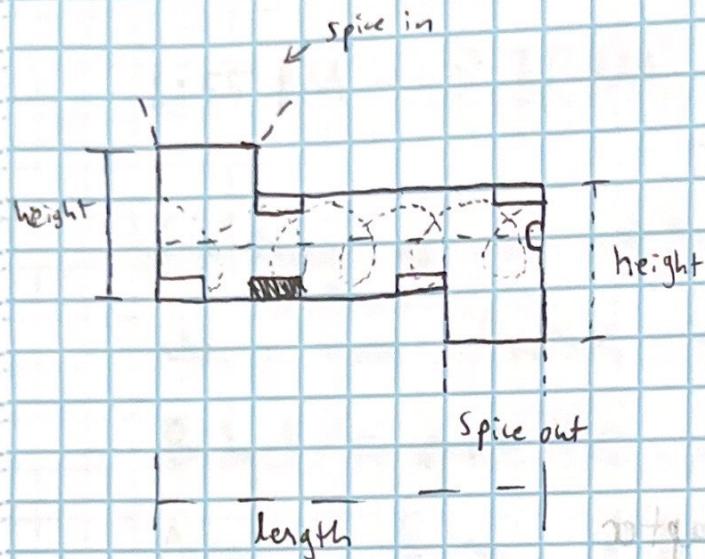
! Sketches needed:

- Base plate
- Distributor Housing
- Spice Housing
- Spice \rightarrow Distributor adapter
- Spiral Mechanism
- "Spool" Mechanism
- Gears 1:10
- Shift Mechanism

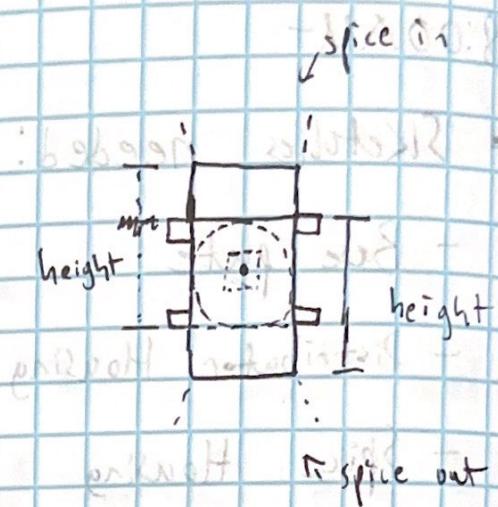
22

2/20/23

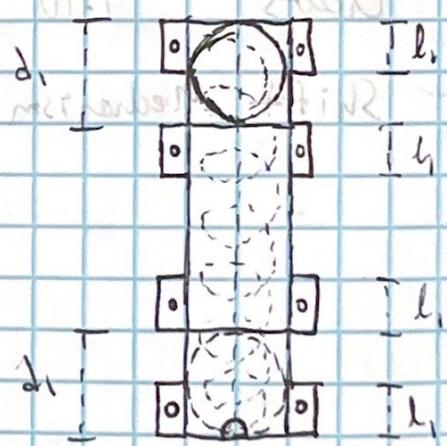
Distributor Housing



Side View



Front View



Top View

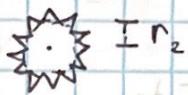
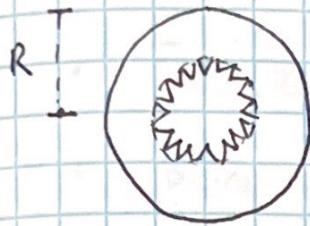
2/20/23

23

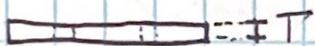
Gears A - D (I - IV)

Rotary I (for rotating Spices)

* Teeth # will vary



Top View
Rotary Table



Side view
Rotary Table

Top View
Rotary driver



Side View
Rotary Driver

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Lecture

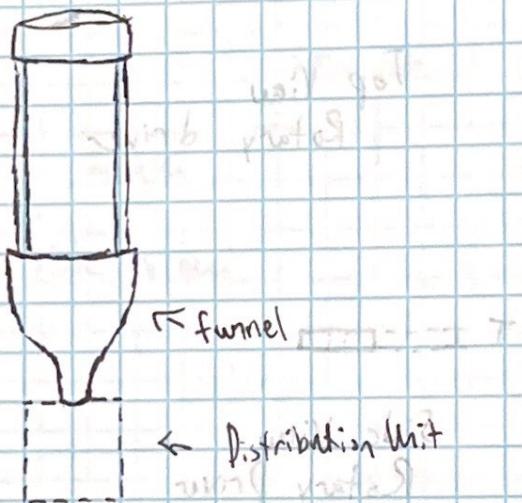
2/22/23

8:00AM - 10:05AM

Weekly

~~Wards~~ Meeting Today (not) installed
new HIV # not yet

Housing Idea



Meeting Notes:

- Aim for 8 splices
- Choose between fine / large corkscrew
- How fast does it turn?
- How much does each rotation dispense
- Unit tests: individual mission

Team Meeting 2/25/23

25

10:00AM - 10:31 AM

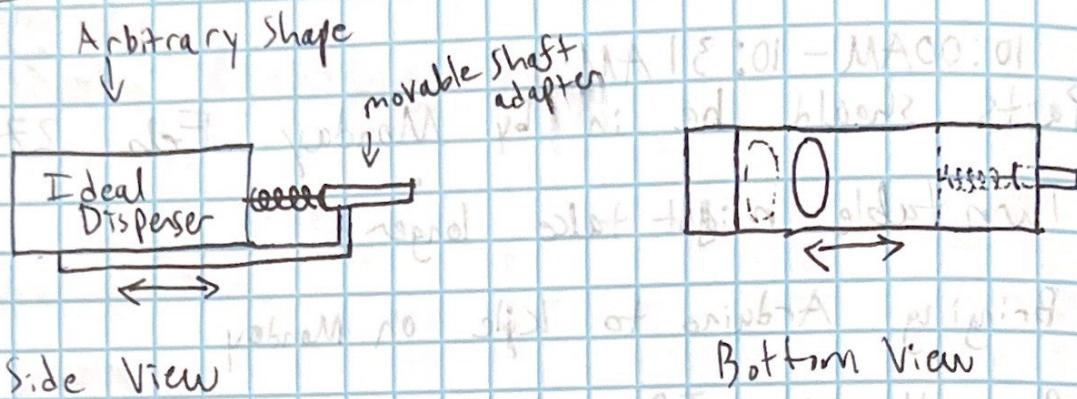
- Parts should be in by Monday Feb. 27
- Turntable might take longer
- Bringing Arduino to Kyle on Monday
- Run through JP's UI design
 - Might need to add back buttons
 - Might need to alter search bar to scrolling list for recipes

Starting Sprint 2 today

- Make Github for:

- UI
- Motor Controller
- 3D Models

2/27/23 9:00 AM



robot \rightarrow single initial

Solo Work

2/28/23

27

Working on 3D printer to test print prototype proof of concept for spiral

- Having issues with PLA adhesion to print bed
- Troubleshooting bed leveling and print speed
- 1st print that made real progress failed ~43% of the way through
- Testing print with raft underneath

Took 1hr 9min to print

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Lecture

3/1/23

8:00AM - 10:00AM

Team Meeting #2 today

- Parts received
 - Stepper Motor
 - Servo Motor
 - Small DC Motors
 - Black/white filament
 - Bearing Table
 - Motor Drivers
 - 7 inch monitor
 -

Team Meeting Notes:

- Emphasize air tight aspect
- Interface buffer
- Material wear and tear worn extrusion
- Big Feed axle all the way through "spiral"
- Gusset(?) for air tight seal
- Fall back on using multiple motors vs
- Pin-pad style interface alternative
- ... ↪ ...
... ..
- Software:
 - Handle multiple ~~accidental~~ inputs

30

Team Meeting

3/3/23

1:35 PM - 1:55 PM

Points covered:

- 6 permanently mounted motors vs 1 removable motor
- Look into power supplies
- 3D model folder created

Solo Work 3/4/23

31

Worked on modelling bearing table
and motor

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Lecture

3/6/23

To - do

- Design & print big gear
- Design & print small gear(s)
- Design Base frame
- Model attachments around fiesta seasoning

Solo Work 3/7/23

33

Working on 3D Modeling:

- Bearing table

30x90 mm

50x105 mm

20x90 mm

30x100 mm

20x90 mm

30x100 mm

- Motor

30x90 mm

20x105 mm

20x90 mm

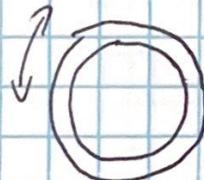
30x100 mm

20x90 mm

30x100 mm

- Bearing gear

- Motor gear



Bearing Table



Bearing gear



Motor



Motor Gear

↑↑ Very Rough sketches ↑↑



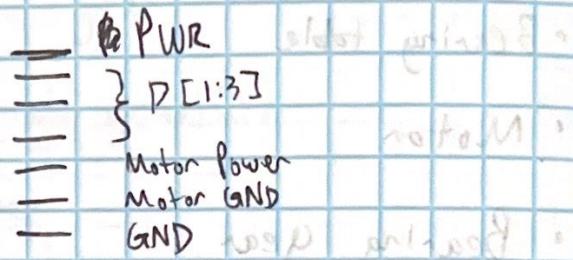
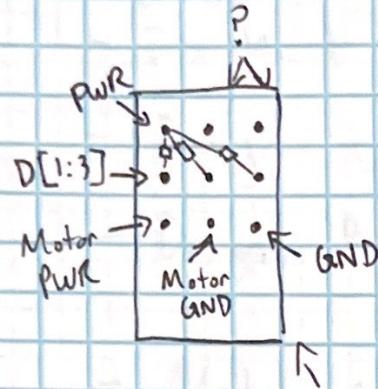
Successfully created models and pushed them to team git

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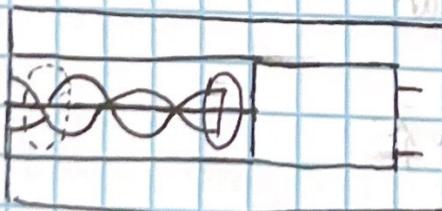
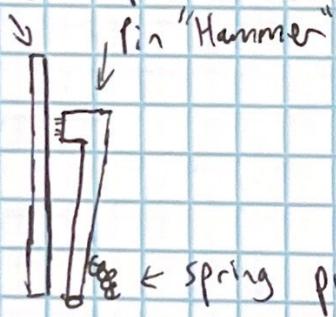
Lecture:

3/18/23

Pin Pad Idea



Wall of Spice container



Rough Top View w/ motor/gear assembly
enclosed

Team Meeting

3/8/23

35

Weekly

- Use software to track amount of spice left
- Prepare individual aspects for (DR)

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Solo Work

3/18/23

3D Printing Prototype parts for
up coming CDR

Printed motor gear after 6
attempted prints

Print time ~ 1 hr 10 minutes

Note: May need to scale up ^{tooth} gear size
for better quality print

Team Meeting 3/20/23 37

9:30 AM - 11:00 AM

Worked on CDR Report and presentation

Also worked on assembling 3D models
for presentation materials

38 Team Meeting

3/21/23

Discussed 3D printing concerns

Explored (alternate) solutions

Timing to send .stl file to 3D printer

the FEDC print shop by Friday 3/24/23

Lecture

3/22/23

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CDR Presentation

Notes:

Question asked about implementing timings in
recipes