

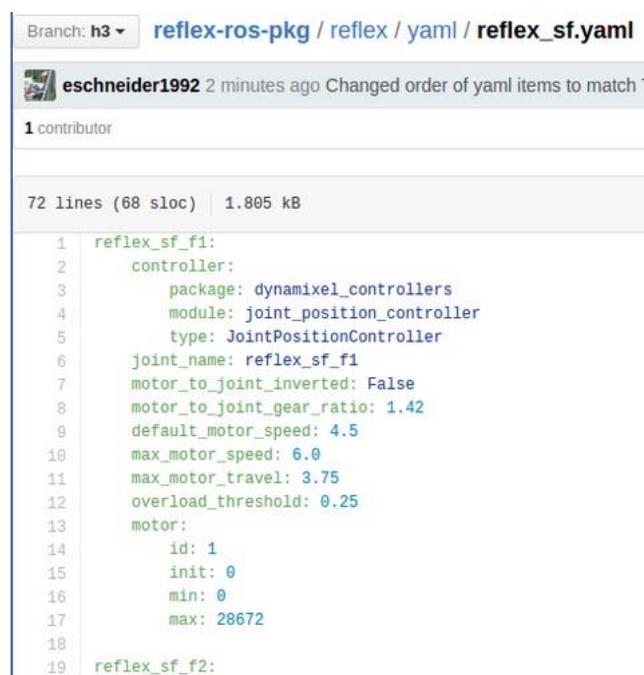
## 6) Getting under the hood (SF)

[Introducing the ReFlex Hand](#) » [Reflex Documentation](#) » 6) Getting under the hood (SF)

There are a couple parameters that you can change to affect the behavior of the hand. This tutorial will tell you where to find them and what they are.

### *reflex\_sf.yaml*

Inside the [yaml](#) folder in the [reflex](#) package you'll find the `reflex_sf.yaml` file. Inside of it there are a number of things that can be changed to affect the hand behavior.



```
Branch: h3 ▾ reflex-ros-pkg / reflex / yaml / reflex_sf.yaml
eschneider1992 2 minutes ago Changed order of yaml items to match T
1 contributor

72 lines (68 sloc) | 1.805 kB

1 reflex_sf_f1:
2   controller:
3     package: dynamixel_controllers
4     module: joint_position_controller
5     type: JointPositionController
6   joint_name: reflex_sf_f1
7   motor_to_joint_inverted: False
8   motor_to_joint_gear_ratio: 1.42
9   default_motor_speed: 4.5
10  max_motor_speed: 6.0
11  max_motor_travel: 3.75
12  overload_threshold: 0.25
13  motor:
14    id: 1
15    init: 0
16    min: 0
17    max: 28672
18
19 reflex_sf_f2:
```


- `default_motor_speed`: This is the default speed the motors travel at when given a position command.
- `max_motor_speed`: When commanded to a higher speed than this, the code will clamp the command down to this max speed. The motors can't physically travel much faster than this.
- `max_motor_travel`: Maximum position in radians that the motors can be commanded to.
- `overload_threshold`: This is the motor load at which the hand interrupts a command and loosens. If you need the hand to grip harder this can be adjusted, but be careful not to overheat the motor or physically damage the fingers when the motors grip with more force.

It is recommended that you don't change the other items in `reflex_sf.yaml`. For the most part they are fixed values that reflect real-world constructs. The motor to joint gear ratio is a physical value won't actually change, for example, whether or not you change the value.

### *reflex\_sf.launch*

Inside of the [launch](#) folder in the [reflex](#) package you'll find the `reflex_sf.launch` file. Inside are the settings for the USB connection to the motors. These values could be changed at need. The simplest change that could be necessary might be changing `/dev/ttyUSB0` into whatever your hand boots to naturally.

Branch: h3 ▾ **reflex-ros-pkg / reflex / launch / reflex\_sf.launch**

 **eschneider1992** 11 days ago Refactor tested on an actual SF hand, working

1 contributor

26 lines (25 sloc) 1.389 kB

```
1 <!-- launch -->
2 <!-- The latest reflex_sf rosbag gets stored in the bagfiles folder -->
3 <!-- Play this file bag, rename it to save it, or use it for debugging as des -->
4 <node pkg="roscpp" type="record" name="recorder" args="--all -O $(find reflex
5 <node name="dynamixel_manager" pkg="dynamixel_controllers" type="controller_m
6 <roscpp>
7   namespace: dxl_manager
8   serial_ports:
9     reflex_sf_port:
10       port_name: "/dev/ttyUSB0"
11       baud_rate: 57142
12       min_motor_id: 1
13       max_motor_id: 4
14       update_rate: 20
15 </roscpp>
16 </node>
17 <roscpp file="$(find reflex)/yaml/reflex_sf.yaml" command="load"/>
18 <roscpp file="$(find reflex)/yaml/reflex_sf_zero_points.yaml" command="load
19 <node name="reflex_sf_controller_spawner" pkg="dynamixel_controllers" type="c
```

Bagfiles

Finally, it might be of interest that each time the hand code is run it saves the hand data in a rosbag file. Inside of the reflex package the latest run is stored in the bagfiles folder. The data is overwritten each time the hand is run, so if you want to save certain runs you should rename or otherwise move them.

To read more about ROS bagfiles, check out the [ROS documentation](#). They can be used to save data and play it back later.

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