Overview

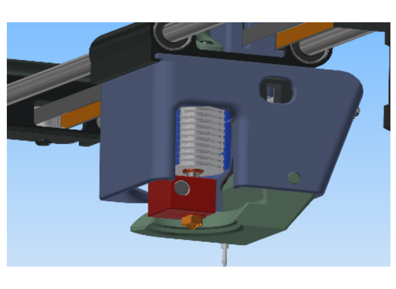
Estimate
TMC2208-2209
Speed calculation
Calibration instruction feeder

Sheet 1: *Estimate*

	Name	Description	quantity	price, USD	delivery	Total, USD	ссылка на товар	
	Cable channel 7 * 7mm	1 meter	1	5.9	0	**5.9**	http://ali.pub/53z26k	
	Fitting	PC4-01	1	0.5	0.67	**1.17**	http://ali.pub/53z2jl	
	Switch	KCD-2	1	0.5	0	**0.5**	http://ali.pub/53z2p1	
	Round hygrometer	the black	1	2.03	0.49	**2.52**	http://ali.pub/53z2tb	
	Magnet 20 * 10 * 3		2	1.7	1	**4.4**	http://ali.pub/53z33t	
	Fan 6010 24V	60x60x10	2	1.71	0	**3.42**	http://ali.pub/53z39g	
	Fan 4010 24V	40x40x10	1	1	0	**1**	http://ali.pub/5b3tq4	
	BIGTREETECH TMC2209 V1.2		1	10.38	0	**10.38**	http://ali.pub/53z3ot	
	Insulation for the table	310*310	1	2.51	1.31	**3.82**	http://ali.pub/53z40h	
	Wire braid		1	3	0	**3**	http://ali.pub/53z49f	
	Raldiator sticky		2	0.58	0.86	**2.02**	http://ali.pub/53z4xx	
	LED strip SMD 5050	IP65 Waterproof + 24V	1	7.6	0	**7.6**	http://ali.pub/53z57g	
	Bear Nozzles	0.4 mm	2	2	0	**4**	http://ali.pub/55aa2i	
	Screws m3 * 12	50 pcs				**0**		
	Screws m3 * 16	10 pieces				**0**		
	Screws m3 * 16	10 pieces				**0**		
	Heat chamber bearings	8x22x7 mm 608ZZ	10	1	3	**4**	http://ali.pub/5b3ykc	**optional, optional**

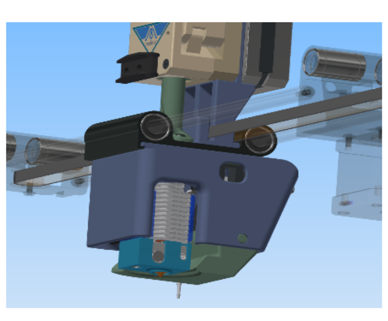
Estimate for a regular Factory head

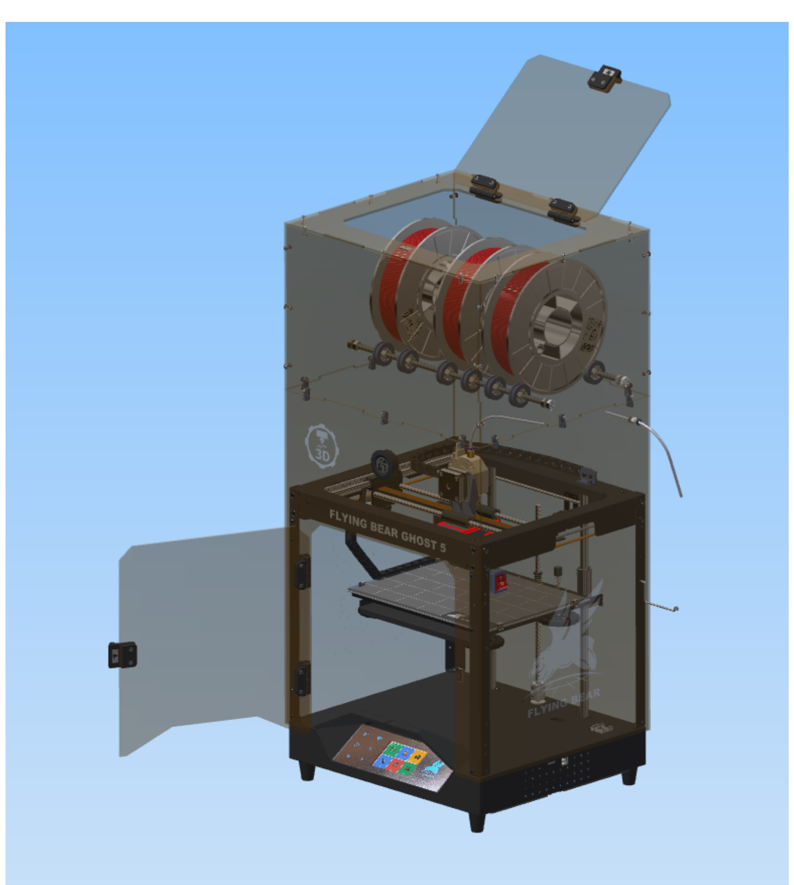
	Titanium SHORT motor		1	13	0	**13**	http://ali.pub/53z3vf	
	Fan snail 5015 24V		1	2	0	**2**	http://ali.pub/552skb	
	Bimetal thermal barrier	D Crazy Heat Break	1	9	0	**9**	http://ali.pub/5a1ool	**optional, optional**

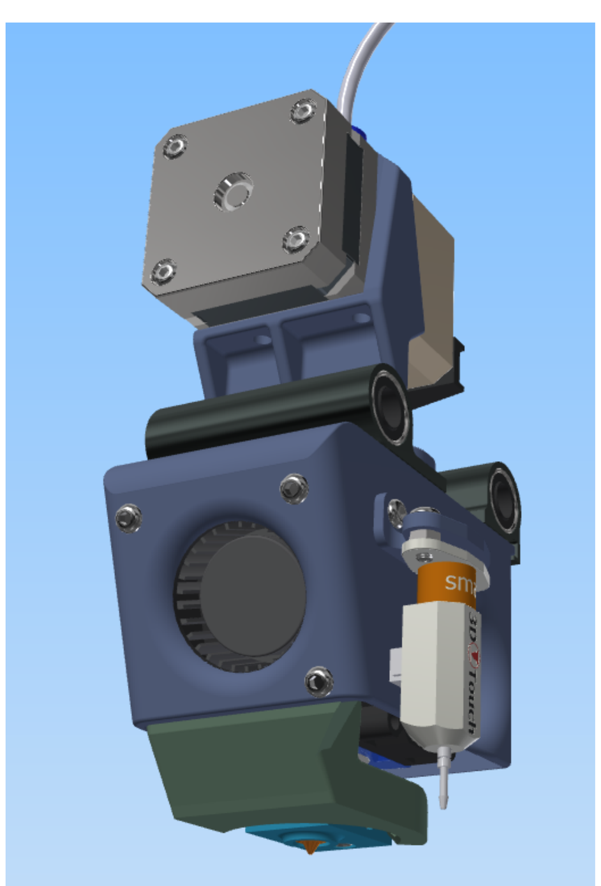


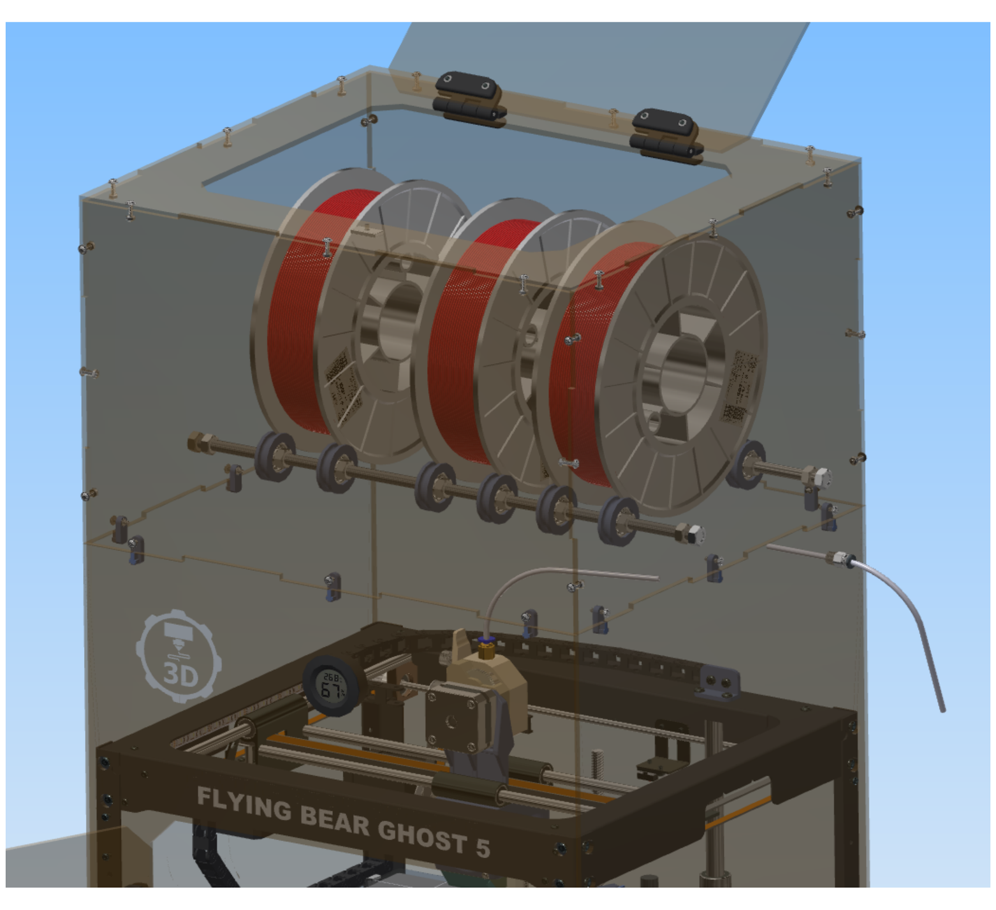
Estimate for ChuchaTV heads

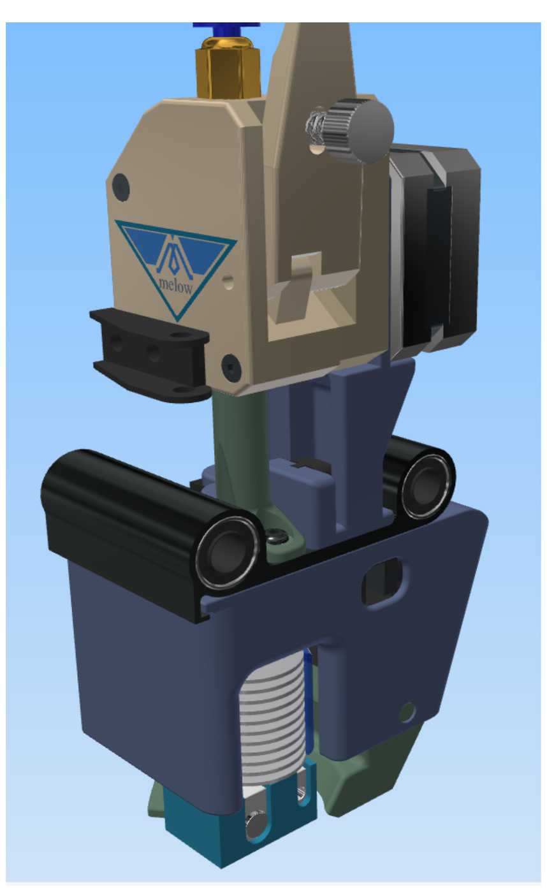
	E3d V6 BMG Hotend SET	set №3 for 24v Right	1	44	0	**44**	http://ali.pub/57c7c7
	Turbine SNAIL 4020	24V	1	1.2	0	**1.2**	http://ali.pub/57624q
	Bimetal NF V6 THERMOBARRIER		1	8	0	**8**	http://ali.pub/59x0mg

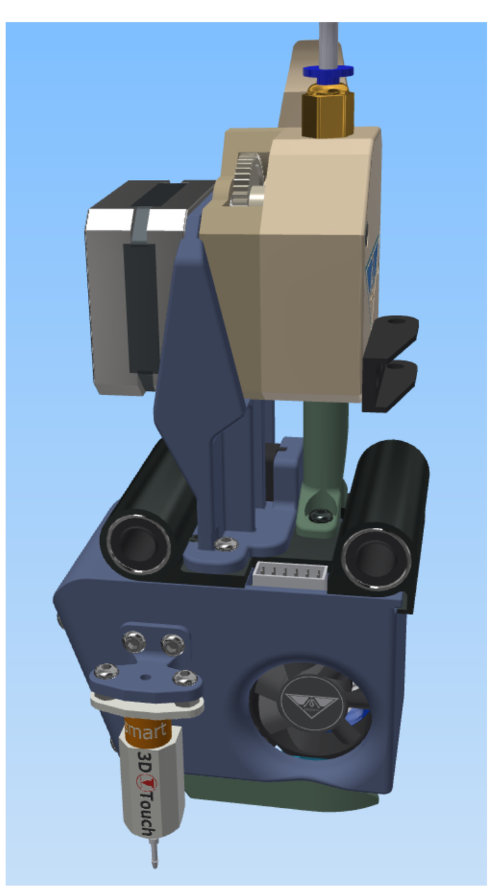


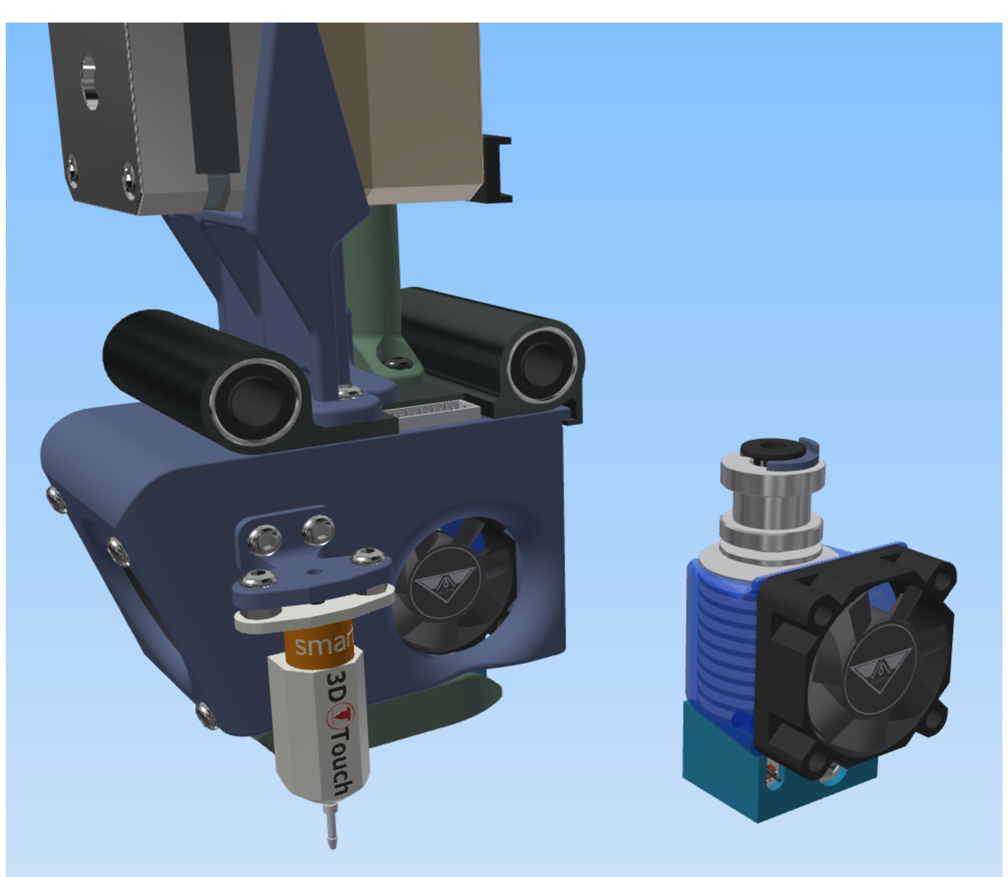












Sheet 2: *TMC2208-2209*

Vref - Driver voltage	**Vref**		enter values
Irms - Constant current on motors.	**Irms**		enter values
Imax - Peak current on motors	**Imax**		enter values

Vref = (Irms * 2.5) / 1.77	**Vref**	0
Irms = (Vref * 1.77) / 2.5	**Irms**	0
Imax = Irms * 1.41	**Imax**	0
Irms = Imax / 1.41	**Irms**	0

Sheet 3: *Speed calculation*

in English

Parameters	known	necessary to find out	formula	what values to set		
Initial speed (Jerk) V0, mm / s		0.00	**V0=V-at**	V	a	t
Final speed (printing speed) V, mm / s		0.00	**V=V0+at**	V0	a	t
Acceleration (ACCELERATION) a, mm / s²		#DIV/0!	**a=(V²-V0²)/2S**	V	S	V0
Time t, s		#DIV/0!	**t=(V-V0)/a**	V	a	V0
Travel S, mm		#DIV/0!	**S=(V²-V0²)/2a**	V	a	V0

Jerk enter values	
ACCELERATION enter values	
d- JUNCTION_DEVIATION RESULT	#DIV/0!

$$d = 0.4\frac{Jerk^2}{Accel_{printing}}$$

Sheet 4: *Calibration instruction feeder*

M302 P1; Disabling the temperature protection of the extruder
G92 E0; Resetting the extruder position
G1 E280 F800; Extrude 280mm plastic

To start setting up the steps, we need to free the filament from the printer. To do this, it is necessary to heat the nozzle to the operating temperature (the easiest way to do this is by starting the preheating of the extruder on the printer), then squeeze the filament a little (3-5 mm) towards the table, and then roll it back 7-8 cm. After this operation, you can safely pull out the filament with your hands without fear of damaging anything.

1. Take the ptfe tube out of the feeder fitting. To do this, press on the black ring on the fitting evenly and as far as possible until it stops, in this position the fitting releases the tube and it is pulled out without applying force.

2. Slightly rewind the plastic back onto the reel, an even (not melted) filament should come out of the feeder. Cut it off exactly along the edge of the fitting.

3. We go to the kuru, connect to the printer via WiFi, go to the monitor tab and send the following lines in turn to the Send g-code window

M302 P1; Disabling the temperature protection of the extruder
G92 E0; Resetting the extruder position
G1 E280 F800; Extrude 280mm plastic

It is better to choose the length of the extruded plastic based on the size of the ruler you have, extrude 10% less.

4. Cut off the extended plastic in the same way along the edge of the fitting. We measure the length of the cut piece - for example 265 mm.

5. Calculate the correct number of motor steps per mm. To do this, we take the current value of the steps (IN THE FIRMWARE by default 400), multiply by the length that was requested to extrude (in example 280) and divide by the result obtained (in example 265):

400 * 280/265 = 422.64

6. Take the robin_nano35_cfg.txt file from the firmware, find the parameter> DEFAULT_E0_STEPS_PER_UNIT in it and replace its value with the value obtained in the previous step. Save, put the file in the root of the sd card and restart the printer.

7. It is recommended to repeat the procedure from step 3.

8. Putting back the printer.

- Find out the current number of steps per mm, (command M503)

We multiply by the received coefficient.

- Introduces into the firmware, or quickly into memory: M92 E ***

Don't forget to save the M500.