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 ANGULAR $\pm 0.5^\circ$
 ONE PLACE DECIMAL $\pm 0.1\text{mm}$
 TWO PLACE DECIMAL $\pm 0.05\text{mm}$

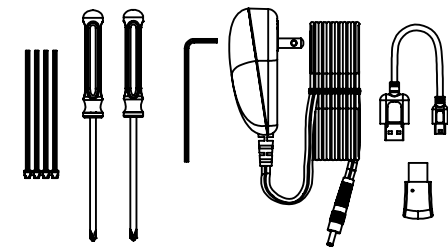
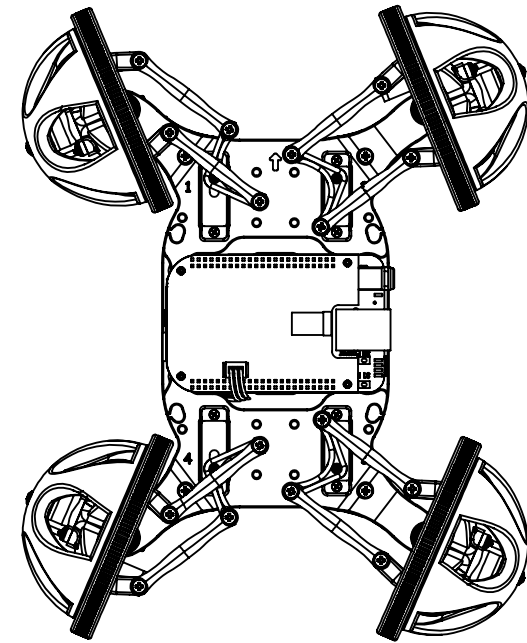
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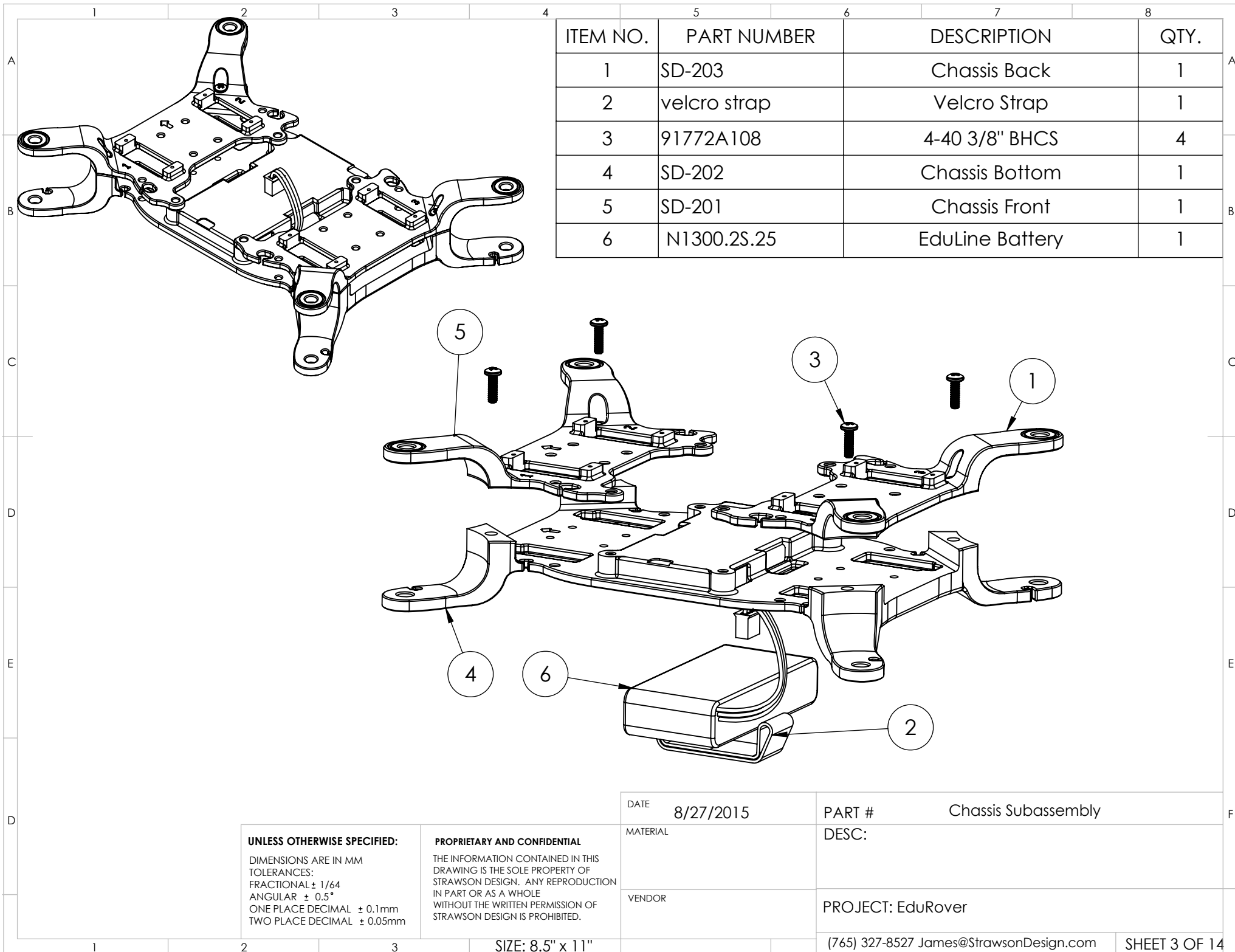
SIZE: 8.5" x 11"

DATE	8/27/2015	PART #	
MATERIAL		DESC:	
VENDOR		PROJECT: EduRover	
		(765) 327-8527 James@StrawsonDesign.com	SHEET 1 OF 14

1	2	3	4	5
ITEM NO.	PART NUMBER	DESCRIPTION		QTY.
1	SD-201	Chassis Front		1
2	SD-202	Chassis Bottom		1
3	SD-203	Chassis Back		1
4	SD-204	Wheel Bearing Retainer		4
5	SD-205	Steering Linkage		8
6	SD-206	Servo Horn		4
7	SD-207	EduRover Wheel		4
8	SD-209	Knuckle		4
9	SD-105	Plastic DC Socket Plug		1
10	SD-101D	Robotics Cape		1
11	BBB	BeagleBone Black		1
12	velcro strap	Velcro Strap		1
13	91772A108	4-40 3/8" BHCS		24
14	ball linkage ball 4 40	4.8mm diameter, 4-40 hole		16
15	Pololu 90mm Tire	Rubber Tire		4
16	WW Motor	MiP Motor & Gearbox		4
17	B2	M4x20 Shoulder Screw		8
18	spline adapter	MiP wheel spline adapter		4
19	WW bearing	MiP Wheel Bearing		4
20	N1300.2S.25	EduLine Battery		1
21	HS-45HB	Hitec Micro Servo		4
22	Hitec servo screw	Hitec Servo Screw		4
23	99461A173	Hitec Mounting Screw		8
24	91772A106	4-40 1/4" BHCS		16
25	Philips Screwdriver P2	Screwdriver for kit screws		1
26	Philips Screwdriver P0	Screwdriver for Hitec Servos		1
27	12v 1A power supply	12v 1A 5.5mm barrel jack adapter		1
28	JST ZH 2-Pin Pigtail	325mm Pigtail for Motors		4
29	mini usb cable	Mini USB included with BBB		1
30	2.5mm allen key	2.5mm Allen Key		1
31	BT Dongle	BT Dongle		1
32	1692K51	3/8" conical spring		8



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				VENDOR		PROJECT: EduRover
1	2	3	SIZE: 8.5" x 11"	(765) 327-8527 James@StrawsonDesign.com		SHEET 2 OF 14

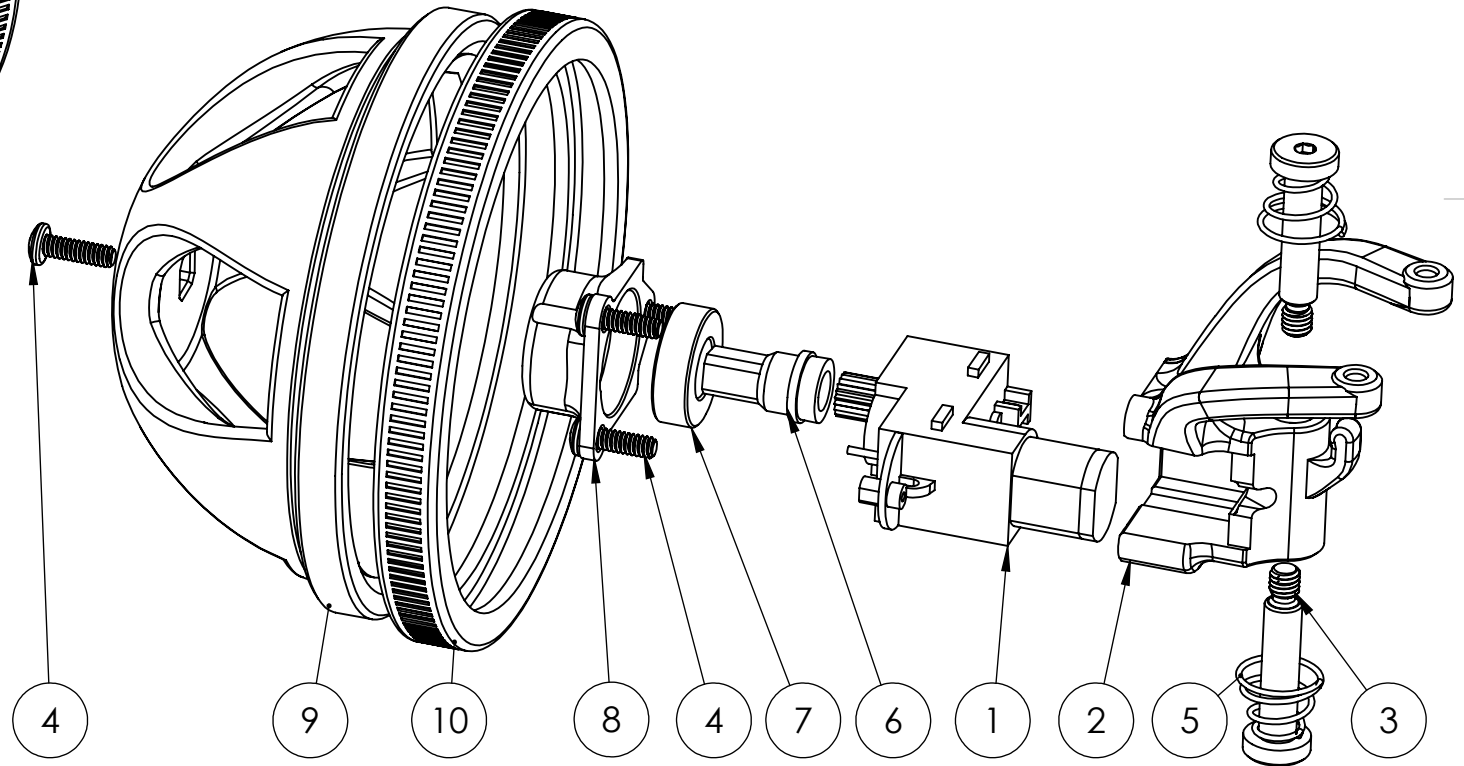


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DATE	8/27/2015	PART #	Chassis Subassembly
MATERIAL		DESC:	
VENDOR		PROJECT: EduRover	
		(765) 327-8527 James@StrawsonDesign.com	SHEET 3 OF 14

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	WW Motor	MiP Motor & Gearbox	1
2	SD-209	Knuckle	1
3	90323A328	M4x20 Shoulder Screw	2
4	91772A108	4-40 3/8" BHCS	4
5	1692K51	3/8" conical spring	2
6	spline adapter	MiP wheel spline adapter	1
7	WW bearing	MiP Wheel Bearing	1
8	SD-204	Wheel Bearing Retainer	1
9	SD-207	EduRover Wheel	1
10	Pololu 90mm Tire	Rubber Tire	1



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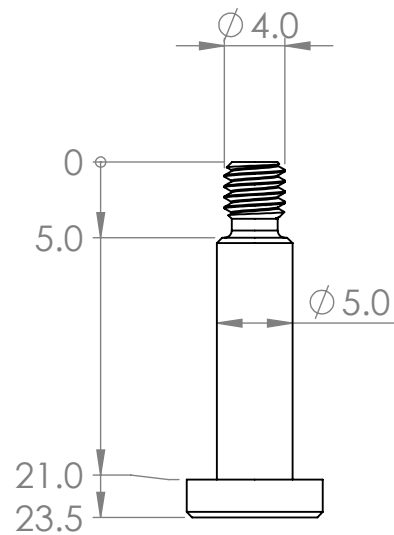
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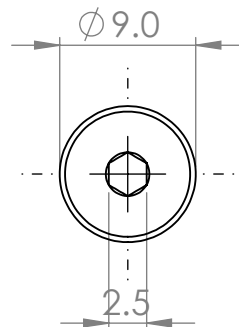
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DATE	8/27/2015	PART #	Corner Subassembly
MATERIAL		DESC:	
VENDOR		PROJECT:	EduRover
		(765) 327-8527 James@StrawsonDesign.com	SHEET 4 OF 14

SIZE: 8.5" x 11"



Stainless steel shoulder screw.
 Prototype part supplied from McMaster-Carr
 #90323A328



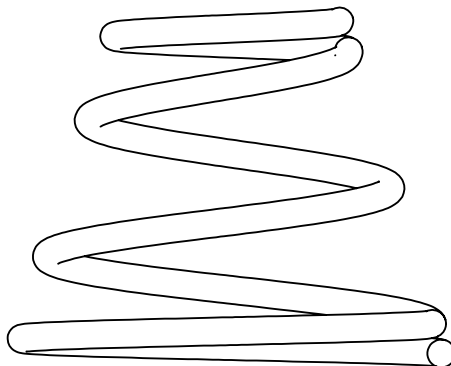
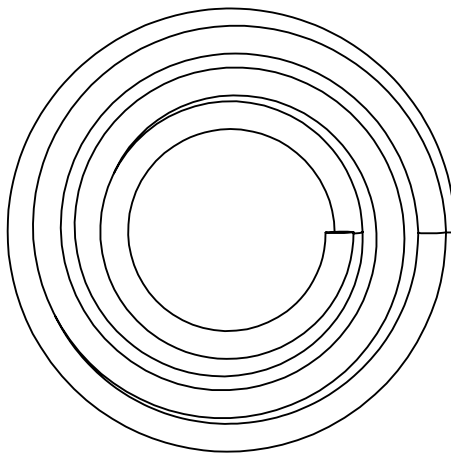
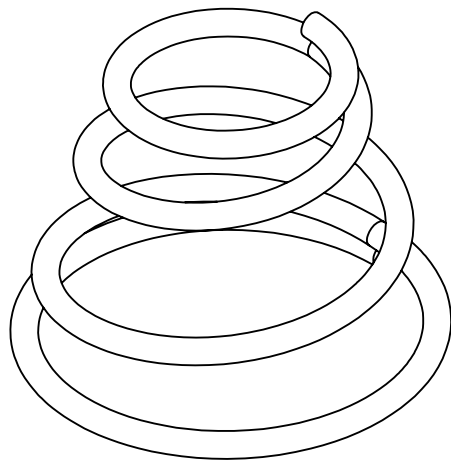
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DATE	8/27/2015	PART #	90323A328
MATERIAL	Stainless Steel	DESC:	M4 Shoulder Screw
VENDOR		PROJECT:	EduRover
		(765) 327-8527 James@StrawsonDesign.com	SHEET 5 OF 14



Large End OD 0.48"
 Small End OD 0.25"
 Wire Diameter 0.029"
 Compressed Length 0.06"
 Load 1.6 lbs.
 Rate 8.5 lbs./ inch
 0.375" Overall Length

McMaster part number
 1692K51

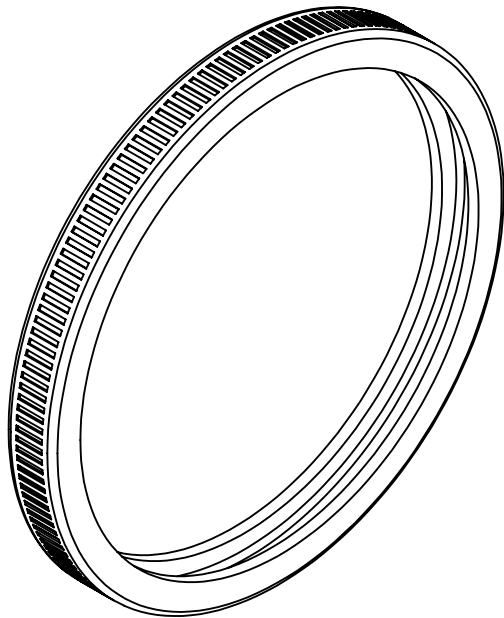
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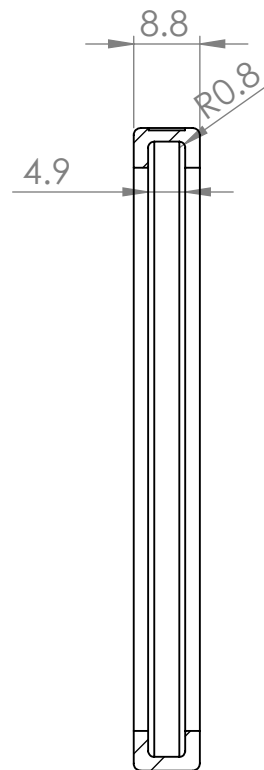
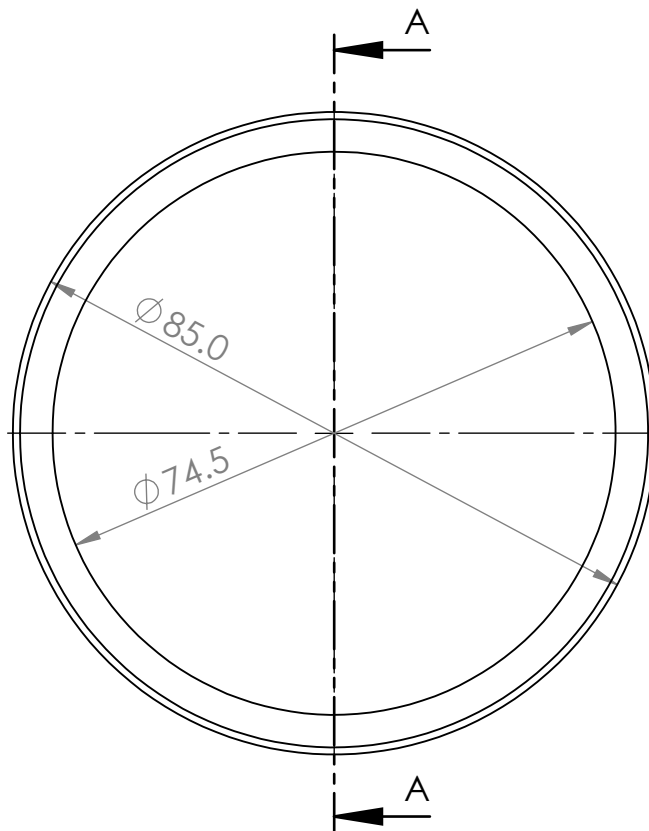
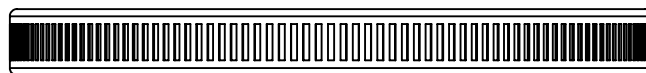
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DATE	8/27/2015	PART # 1692K51
MATERIAL		DESC: 3/8" conical spring
VENDOR		PROJECT: EduRover
	(765) 327-8527 James@StrawsonDesign.com	SHEET 6 OF 14



The two diameters provided are of the rubber tire in its stretched state when stretched around the wheels.
Depending on the softness of the rubber the resting diameter should be %25 to %40 smaller than this.



SECTION A-A
SCALE 1 : 1

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DATE 8/27/2015

PART #

MATERIAL

DESC:

Rubber Tire

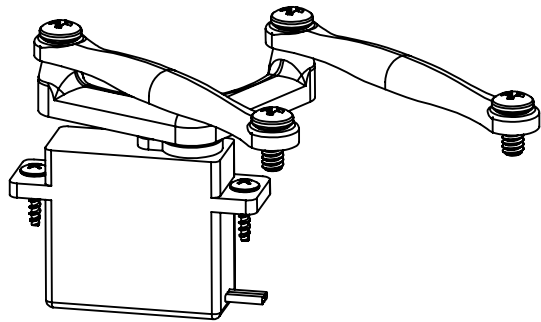
VENDOR

PROJECT: EduRover

SIZE: 8.5" x 11"

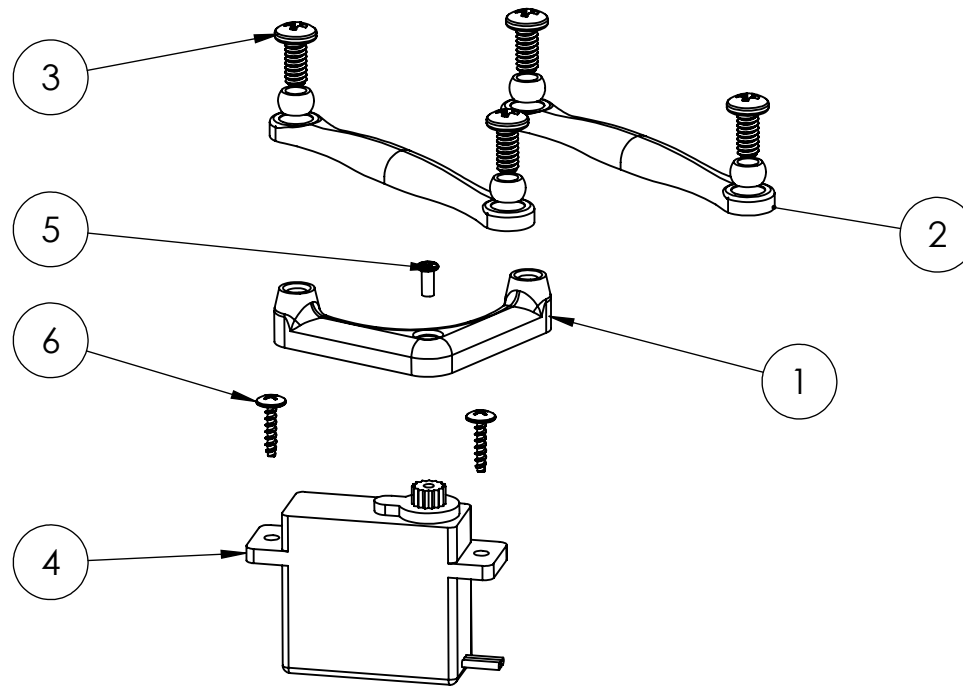
(765) 327-8527 James@StrawsonDesign.com

SHEET 7 OF 14



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SD-206	Servo Horn	1
2	ball linkage 4 40		2
3	91772A106	4-40 1/4" BHCS	4
4	HS-45HB	Hitec Micro Servo	1
5	Hitec servo screw	Hitec Servo Screw	1
6	hitec mount screw	Hitec Mounting Screw	2

Items 5 and 6 are included with the Hitec Servo



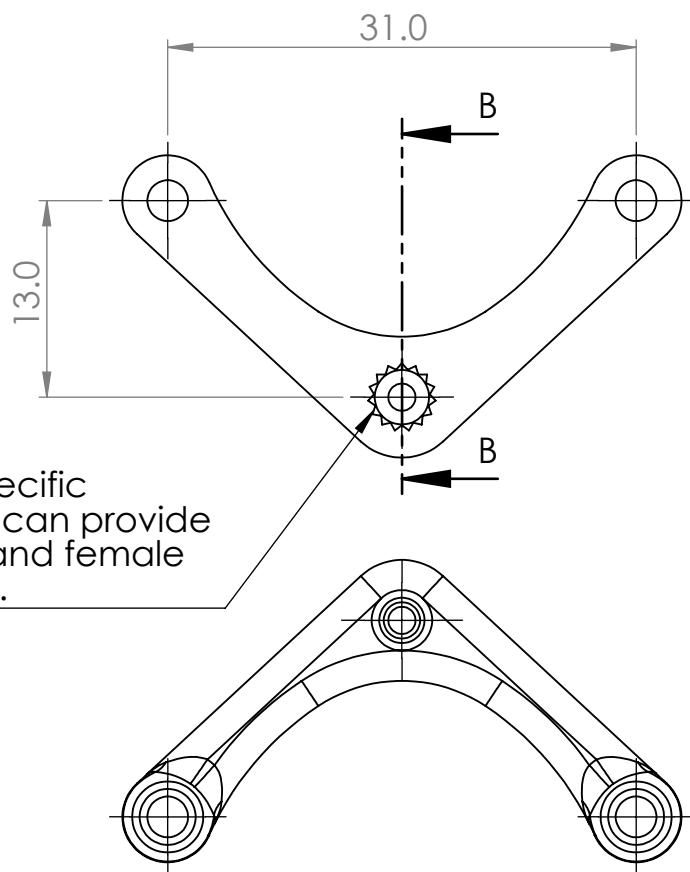
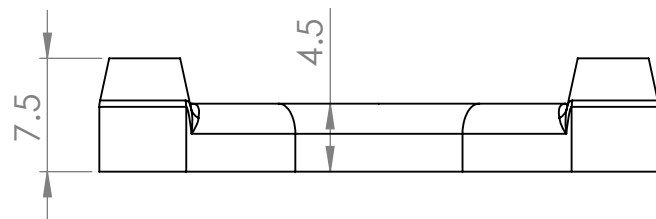
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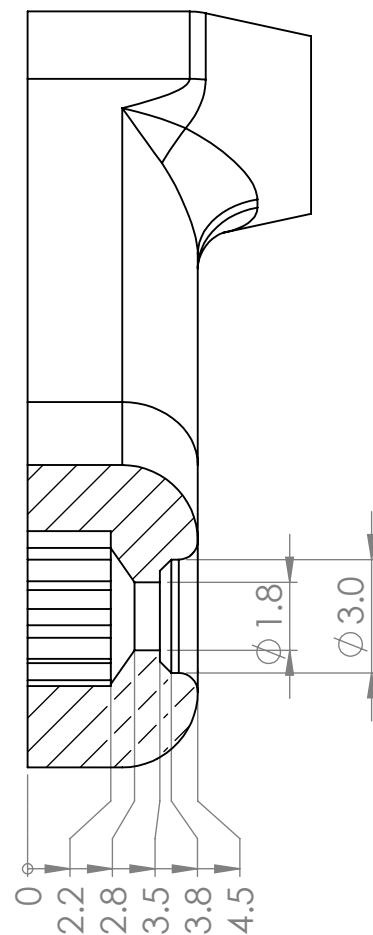
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DATE	8/27/2015	PART #	
MATERIAL		DESC:	
VENDOR		PROJECT: BealgeMiP	
		(765) 327-8527 James@StrawsonDesign.com	SHEET 8 OF 14



15-point spline is specific to hitec servos. We can provide an example male and female spline for test-fitting.

SECTION B-B SCALE 5 : 1



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DATE 8/27/2015

MATERIAL

VENDOR

PART # SD-206

DESC:

Servo Horn

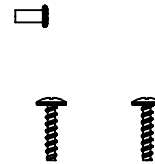
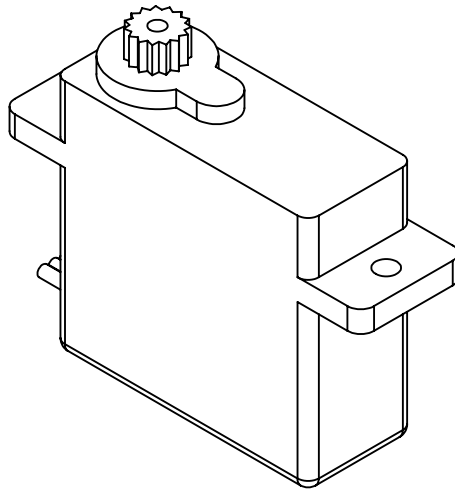
PROJECT: BealgeMiP

(765) 327-8527 James@StrawsonDesign.com

SHEET 9 OF 14

SIZE: 8.5" x 11"

The Hitec HS-45HB Servo comes included with one servo horn mounting screw and two self-tapping mounting screws.



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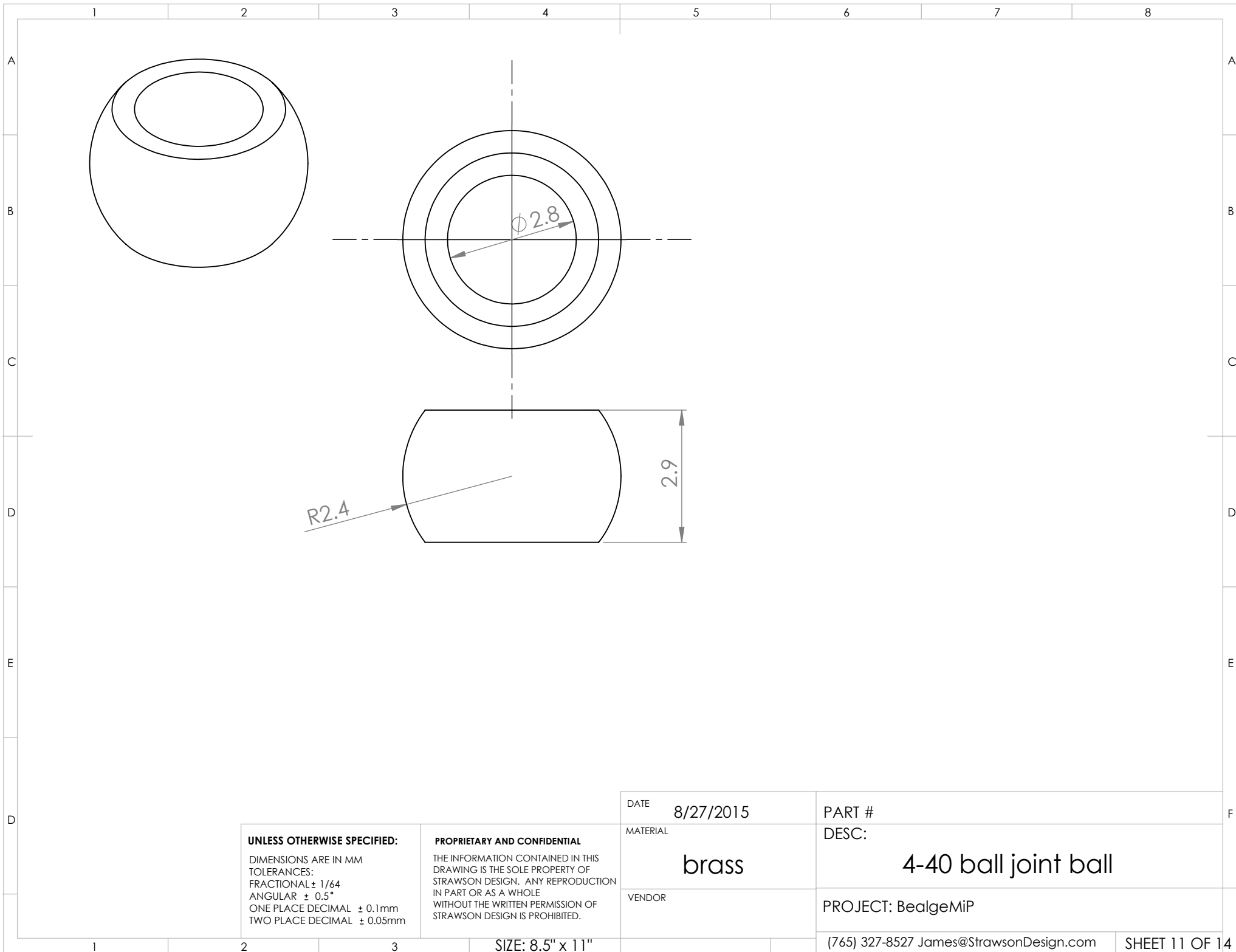
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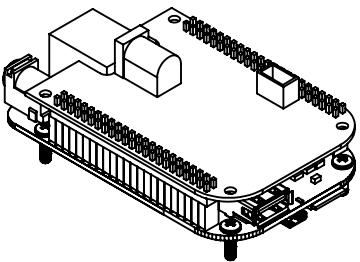
DATE	8/27/2015	PART # HS-45HB
MATERIAL		DESC: Hitec Micro Servo
VENDOR		PROJECT: EduRover
		(765) 327-8527 James@StrawsonDesign.com
		SHEET 10 OF 14



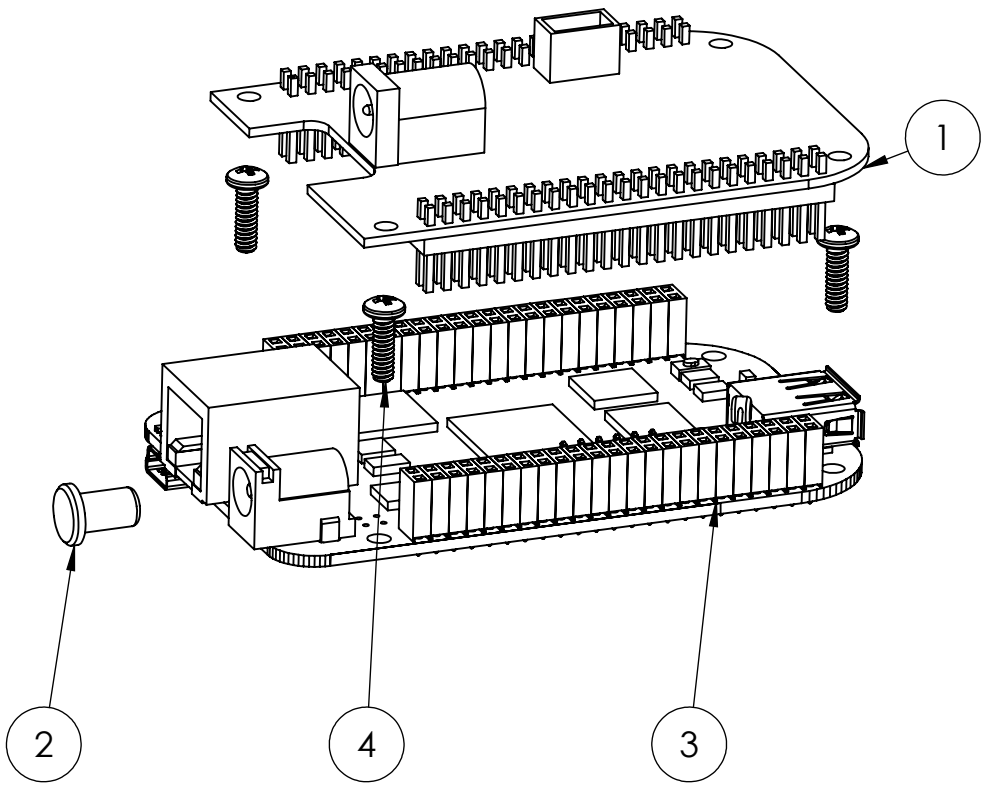
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DATE	8/27/2015	PART #	
MATERIAL	brass	DESC:	4-40 ball joint ball
VENDOR		PROJECT: BealgeMiP	
		(765) 327-8527 James@StrawsonDesign.com	SHEET 11 OF 14



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SD-101D	Robotics Cape	1
2	SD-105	Plastic DC Socket Plug	1
3	BBB	BeagleBone Black	1
4	91772A108	4-40 3/8" BHCS	4

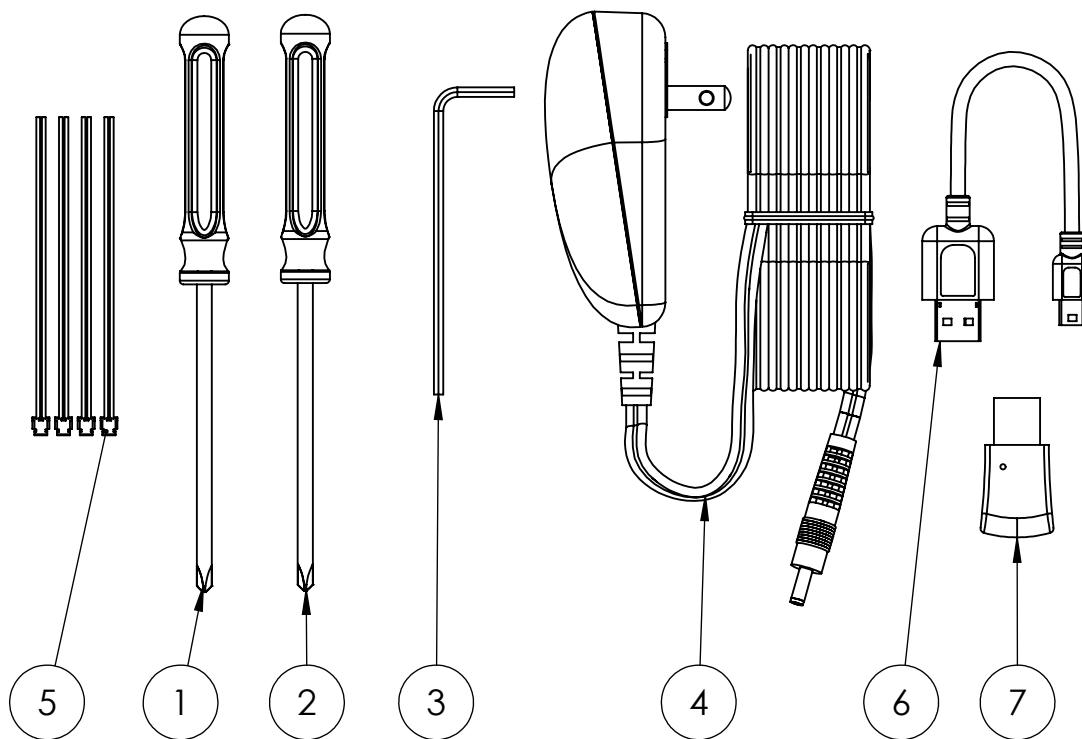


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DATE	8/27/2015	PART #	
MATERIAL		DESC:	
VENDOR		PROJECT: EduRover	
		(765) 327-8527 James@StrawsonDesign.com	SHEET 12 OF 14

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Philips Screwdriver P2	Screwdriver for kit screws	1
2	Philips Screwdriver P0	Screwdriver for Hitec Servos	1
3	2.5mm allen key	2.5mm Allen Key	1
4	12v 1A power supply	12v 1A 5.5mm barrel jack adapter	1
5	JST ZH 2-Pin Pigtail	325mm Pigtail for Motors	4
6	mini usb cable	Mini USB included with BBB	1
7	BT Dongle	BT Dongle	1



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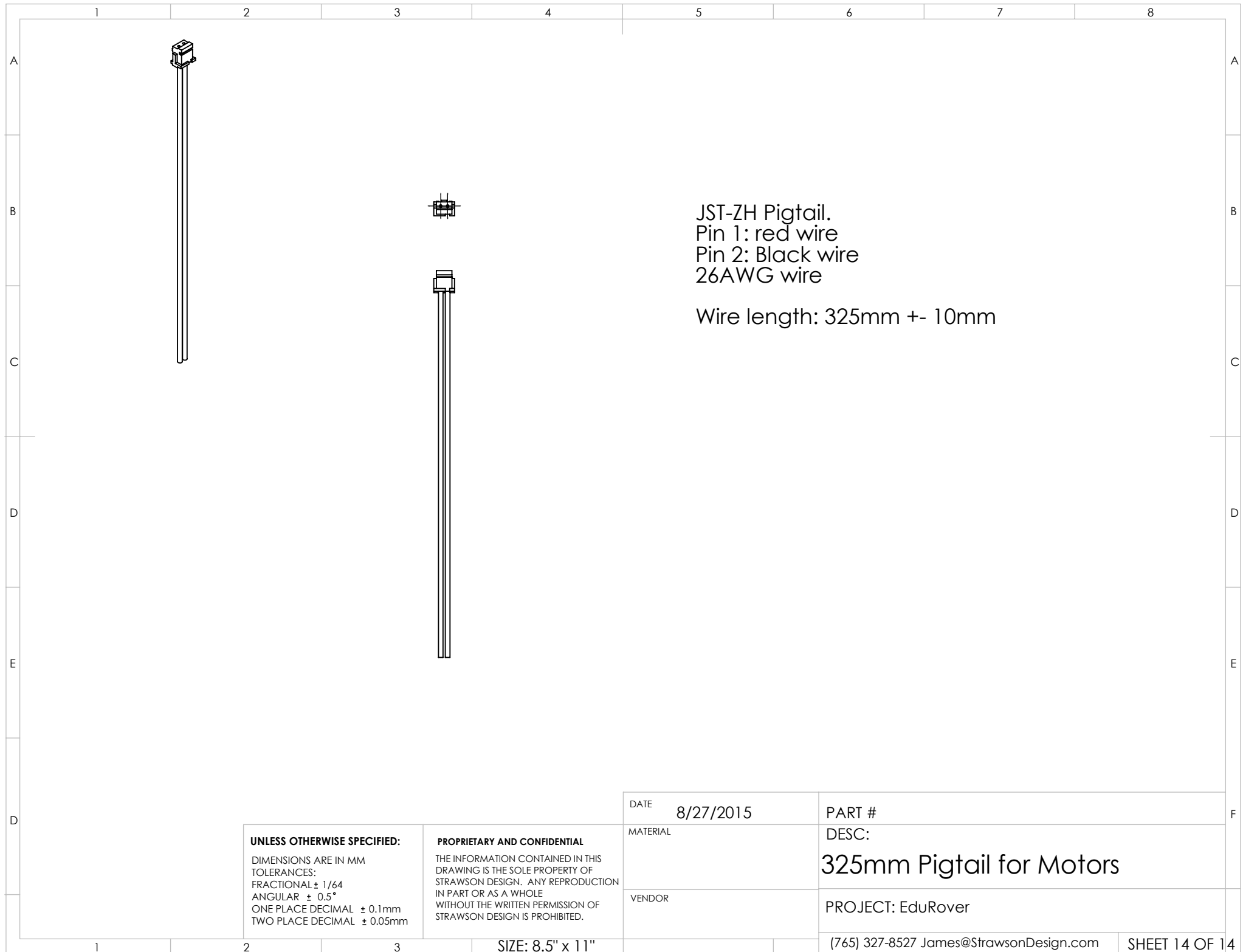
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DATE	8/27/2015	PART #	
MATERIAL		DESC:	Accessories
VENDOR		PROJECT:	EduRover
		(765) 327-8527 James@StrawsonDesign.com	SHEET 13 OF 14

SIZE: 8.5" x 11"



JST-ZH Pigtail.
Pin 1: red wire
Pin 2: Black wire
26AWG wire

Wire length: 325mm +/- 10mm

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		MATERIAL		DESC:	325mm Pigtail for Motors
		VENDOR		PROJECT:	EduRover
				(765) 327-8527 James@StrawsonDesign.com	SHEET 14 OF 14