

Right Angle Screwdriver

Week 9 – October 30 to November 5, 2009

Team Members: Scott Carpenter - Team Leader
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Problem Statement:

The aim of this project is to design a right angle screwdriver for use in surgery for facial fractures. The current procedure attaches titanium plates to the mandible by making a small incision on the exterior of the face, which makes it difficult to position the screwdriver effectively and leaves a scar. The right angle screwdriver must be able to fit through a standard incision and provide enough torque to tighten the screws down on the plate.

Restatement of Last Week's Goals:

The team's goals this past week was to try to get a screwdriver bit that is used in surgery to go ahead and order the parts necessary to begin constructing the prototype. There has been trouble contacting the client in reference to the bit and the only commercial bits available were too expensive for the budget. An effective back up plan was established and will be discussed with the advisor. The team also procured the necessary tools to test the torque in seating a screw.

Summary of Accomplishments:

- Research on common hardware parts for prototype
- Alternate prototype design established

Team Goals:

- Obtain screwdriver bit
- Order parts for prototype
- Test required torque for seating screw into bone

Activities:

Scott	10/30/2009	Advisor Meeting – Report review and project status review	.75 hr	2.5 hr
	11/4/2009	Group Meeting – Alternate design	.75 hr	
	11/3/2009	Research – bit fittings	.5 hr	
	11/5/2009	Research – miniature screwdrivers	.5 hr	
Charles	10/30/2009	Advisor Meeting – Report review and project status review	.75 hr	1.5 hr
	11/4/2009	Group Meeting – Alternate design	.75 hr	
John	10/30/2009	Advisor Meeting – Report review and project status review	.75 hr	2 hr
	11/4/2009	Group Meeting – Alternate design	.75 hr	
	11/4/2009	Independent research bits and sockets	.5 hr	
Nathan	10/30/2009	Advisor Meeting – Report review and project status review	.75 hr	2.25 hr
	11/4/2009	Group Meeting – Alternate design	.75 hr	
	11/4/2009	Independent research bits and sockets	.75 hr	

Difficulties:

Difficult to determine fabrication method as well as exact specifications. Team is also having difficulties procuring a compatible screwdriver bit to use in prototype.

Project Timeline:

	September				October					November				December		
Tasks	4	11	18	25	2	9	16	23	30	6	13	20	27	4		
Project Research	█	█	█	█	█	█	█									
Brainstorming	█	█	█	█	█	█	█									
PDS		█	█	█	█	█	█	█								
Prototype design				█	█	█	█	█	█							
Prototype building						█	█	█	█	█						
Actual device design						█	█	█	█	█	█					
Ordering								█	█	█	█					
Expected Shipping								█	█	█	█					
Device manufacturing										█	█	█	█	█		
Testing											█	█	█	█		
Re-designing											█	█	█	█		
Re-testing													█	█		
Presentation								█							█	
Progress report	█	█	█	█	█	█	█	█	█	█	█	█	█	█		
Website	█	█	█	█	█	█	█	█	█	█	█	█	█	█		

Expenses:

\$31.43 – Materials for rough model