

Right Angle Screwdriver

Week 1, 2 - September 4 to September 18, 2009

Team Members: Scott Carpenter - Team Leader
Charles Donaldson – Communicator
John McGuire – BSAC
Nathan Retzlaff – BWIG

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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 these past two weeks has been to establish positions within the team and meet with the client. The team hopes to be able to establish what scale is needed by the client to acquire at least one plate with screws. After meeting with the client, the team will begin researching and will have a preliminary brainstorming session.

Summary of Accomplishments:

- Team positions established
- Initial meeting with client – The team learned about the current procedure used in surgery and what the client hopes to see
- Set up weekly group meeting time
- Brainstormed and came up with five ideas of designs to research and pursue

Team Goals:

- Contact Client for further details of current procedure
- Write PDS
- Further research materials and develop design ideas

Activities:

Scott	9/9/2009	Met With Client	1 hr	7.5 hr
		Researched materials for gears and flexible shafts	3 hr	
		Group meeting/Group brainstorming session	3.5 hr	
Charles	9/9/2009	Met With Client	1 hr	6.5 hr
		Researched clock and robotic gears	1 hr	
		Group meeting/Group brainstorming session	3.5 hr	
John	9/9/2009	Met With Client	1 hr	7 hr
		Researched ratchet screwdrivers and casing materials	2.5 hr	
		Group meeting/Group brainstorming session	3.5 hr	
Nathan	9/9/2009	Met With Client	1 hr	6.5 hr
		Researched belt materials and gears	2 hr	
		Group meeting/Group brainstorming session	3.5 hr	

Difficulties:

Difficult to find gears small enough to make design ideas feasible.

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:

Currently none