



**RSK Inc.
PowerLute**

**Design and Engineering Program
March 13, 2023**



RSK INC.
POWERLUTE
DESIGN AND ENGINEERING PROGRAM

STUDIORED PROPOSAL No. E22036.PWR

March 13, 2023

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1. EXECUTIVE SUMMARY

Thank you very much for the opportunity to quote on the design of RSK Inc.'s new PowerLute.

The StudioRed team hopes to be able to have the opportunity to provide RSK Inc. with design and development services that will allow you to achieve the next level of product development, improve time-to-market, increase profit margins, and achieve a sustainable competitive advantage. Our experience in the development of over 4500 products, positions us as an ideal long-term partner in achieving both your immediate and long-term goals.

A. CLIENT PRODUCT REQUIREMENTS:

RSK Inc. is beginning the development of a PowerLute. RSK Inc. has several design goals for this program, including:

- Creating a strong design identity for the PowerLute system.
- Using available, off-the-shelf powertrain systems for incorporation into the product.
- Working closely with RSK, Inc. and end contract manufacturer to assure a smooth integration into manufacturing.

B. ABOUT STUDIO RED:

StudioRed was founded 38 years ago on one basic premise: that great design and great engineering must go hand in hand. Conceived by Philip Bourgeois, an award-winning designer with extensive plastics engineering experience, StudioRed has the reputation for getting more out of design. StudioRed optimizes great looking results with the appropriate manufacturing process, in one case dropping assembly time from 7 hours down to 4 minutes. With this "We do it better" attitude, StudioRed has become one of the top five design firms in Silicon Valley.

Capabilities - Twenty plus professionals provide in-house Market Research, state-of-the-art Industrial Design, expert Mechanical Engineering, Graphic Branding, and Prototyping as well as Production through our partners. Our multi-disciplinary team based system and strong Project Management have become the key to successful projects.

Business Partnering - We work to be responsive to your business needs, to synergize with them, and to improve both firms through the alliance. We have a 90% return rate from our clients because of this way of doing business. Some of the firms we have partnered with include Brocade, Ericsson, Facebook, Medtronics, Nutanix, Sanmina and others.

Design should be the expression of the corporate identity and a company must fulfill the promise set by their brand. StudioRed's Rational Emotional Design methodology is the process of maximizing the rational and emotional values in every part of the product experience from awareness to disposal. Our approach "Rational Emotional Design" views these not as separate disciplines, but a merging of all the different activities into a single brand focused event.

C. STUDIORED DESIGN PROGRAM:

StudioRed will provide strategic, integrated consulting for RSK Inc. to deliver a successful solution for the PowerLute. This will be accomplished through design conceptualization and comprehensive ergonomic analysis. We will emphasize simple part design, low-cost tooling and assembly that will optimize production volume and schedule. Each phase will be continually reviewed as the direction of the design evolves. The ranges of hours indicated in the later Phases of the project are based on the best information available to us at the time this proposal is prepared. It can be expected, as the program moves through its various phases that guidelines may alter. If this should arise, the program may be modified due to new information suggested by RSK Inc. and StudioRed.

All elements of the final design will be refined and a Design Control Drawing will be produced. This document will then be used to direct the Engineering Program. Our program has five phases that occur in two stages:

Design Phases	Engineering Phases
Phase 1. Concept Exploration	Phase 3. Mechanical Concept
Phase 2. Concept Refinement	Phase 4. Prototype Engineering
	Phase 5. Pre-Production Engineering

D. SCHEDULE:

Industrial Design; Phases 1 & 2, require approximately 7-9 weeks.

Engineering; Phases 3 & 4, require approximately 14 weeks.

Phase 5 will occur concurrently with the manufacturing commencement.

E. COST OF PROGRAM:

StudioRed's Design and Engineering Tasks outlined in this proposal represent a **budgetary estimate**. At the end of Phase 2 we will **reevaluate the Engineering phases to verify accuracy of the engineering estimate and schedule**. The program will be performed on a time and materials basis.

Phase 1 Concept Exploration	\$54,111.00	–	\$74,559.00
Phase 2 Concept Refinement	\$19,854.00	–	\$25,857.00
Phase 3 Mechanical Concept	\$58,728.00	–	\$71,964.00
Phase 4 Prototype Engineering	\$31,287.00	–	\$40,698.00
Phase 5 Pre-Production Engineering	\$ 8,838.00	–	\$12,048.00
1. *Total Program Fees	\$172,818.00	–	\$225,126.00
2. Materials NTE 5% of total labor noted above			\$11,256.00

*The range reflects the degree of complexity. Material costs are not included in this total.

3. Total Meeting Time Estimated **\$ 9,108.00 - \$11,682.00**

Meeting time is estimated only and will be invoiced as time spent based on the billing rate of the individual(s) attending. The costs noted above are estimated times show in tasks noted in each phase.

4. Electrical Engineering Support

Budget will only be applied if a battery powered solution is determined to be the preferred path. **\$40,000.00** **\$50,000.00**

TOTAL PO AMOUNT: **\$298,064.00**

Retainer Required : (1/3 of the low range of estimated labor) **\$57,606.00**

F. SUMMARY:

We believe StudioRed would be RSK Inc.'s preferred partner on this Program for several reasons:

- As a company, we are ideally positioned to respond to RSK Inc.'s project requirements. We bring solid, related experience in similar high-end design programs involving complex design and mechanical engineering issues. Please refer to the "Relevant Projects" section of this proposal for specific reference programs.
- A Design team with high creativity and proven experience in RSK Inc.'s market space ensures high value design.
- Experienced Mechanical Engineering with the ability to anticipate key issues and pitfalls, developing solutions during the Design Stage in concert with ID, to optimize the final manufacturing cost.
- A small-company feel with an integrated large company development service housing all functions—Design, ME, Prototyping, and Manufacturing support—in one facility operating within contiguous office space. We also encourage the active participation on site as required, of RSK Inc.'s program team to ensure effective communication and maximum team interaction throughout.

In short, we believe StudioRed is clearly the best choice for RSK Inc. on this important program. We would bring the above benefits plus our experience and a rich history of similar services with companies such as Brocade, Ericsson, Facebook, Medtronics, Nutanix, Sanmina, et al. on other major development efforts. *We would sincerely welcome this opportunity to partner with RSK Inc..*

2. PROJECT REQUIREMENTS

RSK Inc. plans to develop a new PowerLute to give the company a high profile both in technology and in sophisticated design. Product emphasis will be focused on:

- Creating a strong design identity for the PowerLute system.
- Using available, off-the-shelf powertrain systems for incorporation into the product.
- Working closely with RSK, Inc. and end contract manufacturer to assure a smooth integration into manufacturing.

MARKET:

The PowerLute will be launched into the existing Lute market, but will be the first of its kind offering a powered option. It will sit on the shelves alongside other athletic/grounds keeping equipment as a top-tier product.

AESTHETICS:

The Industrial Design goal will be to develop a strong design identity for the PowerLute line. The appearance should give the product a contemporary look that conveys RSK Inc.'s corporate philosophy and status within the industry.

MECHANICAL:

Mechanical Engineering for the program will involve developing RSK Incorporated's PowerLute concept for production with a critical first step reviewing and comparing the best available power train options with regard to application, power to weight, run time and cost. Additionally, the current prototype gear train will be reviewed for improvements, and a balanced powered design will be detailed out. Power drive components will be pre-existing units, readily available to help meet project requirements. The following components and assemblies will be defined by RSK Inc. and integrated into the package by StudioRed:

- Power lute blade and tine dimensions and activation needed
- Current working prototype
- Usable existing native 3D CAD files
- General architecture of product concept
- Market feedback supporting drive decisions, cost, weight and so on
- Confirmation of vendor and manufacturers recommended by StudioRed

The mechanical engineering will utilize a 3-D solid modeling software Solidworks, which can be used to produce tooling without complete parts drawings. Therefore, only Quality Control part drawings are estimated at this time. An engineering specification available through RSK Inc. will be required on all components and mechanisms to be used by the start of Phase 3 to meet the budget and deadline.

OPERATION & SERVICE:

Units will be operated outdoors in environments like clay tennis courts. Servicing is expected, and will vary based on gas or electric approach. No servicing requirements have been defined yet.

PROTOTYPE & PRODUCTION REQUIREMENTS:

A prototype will be produced prior to production. Production volumes for process evaluation are expected to warrant high volume processes with a mix of injection molded, sheet metal and other processes.

3. STUDIORED DESIGN PROGRAM

StudioRed will assign a development team for the duration of the program. This multi-disciplinary team will be assigned based on the most appropriate experience applicable to your project. Using our **Rational Emotional Design Process** we involve all the appropriate disciplines necessary in the complete product lifecycle (based on client direction) to address and optimize for their issues and goals. Design exploration will occur in close cooperation with RSK Inc. staff, promoting a free exchange of concepts and critiques. In this manner, we can most effectively generate a substantial range of design directions and distill the best solutions.

PRODUCT DESIGN AND BRANDING:

We will use your operational specification, market and positioning objectives, and competitive products to critique all the design options. This will assure a solution that addresses all critical areas.

StudioRed's Industrial Design Program shall promote a distinct, high-quality appearance, comfortable user features, and a visual and tactile appeal. All concepts will account for the assembly objectives defined and the manufacturing methods available to provide innovative solutions.

MECHANICAL ENGINEERING:

StudioRed's strength is the integration of the industrial design intent with the mechanically engineered solution. In this way we maintain design integrity throughout the engineering process. Management of mechanical issues will be a key part of StudioRed's design effort. By providing recommendations on manufacturing and assembly techniques, we can assist in meeting your production goals and reducing the schedule. StudioRed will focus on mechanical simplicity in manufacturing and assembly, material selection, serviceability and heat transfer (if applicable).

StudioRed has estimated the Mechanical Engineering portion of the program based on the best technical information available at this time. **At the end of Phase 2 we will reevaluate the Engineering phases to verify accuracy of the engineering estimate and schedule. Engineering costs increase with the addition of parts and/or the complexity of the project. If the project budget requires adjustment due to scope changes or unforeseen complexity or complications, StudioRed will involve RSK Inc. immediately in deciding whether to streamline our project responsibilities or the projects scope if required.**

PROJECT MANAGEMENT:

Project management is paramount to a successful program. StudioRed will manage the scheduling of the multi-disciplinary team within StudioRed, the Client and various vendors. This will assure accurate processing throughout the program. We track project scheduling on Ajera and will output reports regularly if requested.

Additionally, tight controls on time are applied to the program using internal project management software that tracks project budgets and staff time on a real-time basis. StudioRed's project manager receives weekly analysis reports to assess progress and budget. Project updates are provided to RSK Inc. on a periodic basis, based on team review meetings and Client requirements.

SCHEDULE & REQUIRED RESOURCES

The schedule below is based on acceptance of this proposal on the date identified below; the lead-time shown is critical to maintain program scheduling. This proposal will be accepted when the following items are received:

1. A signed copy of this proposal.
2. Either three separate lines on a single PO or three purchase orders in the amounts shown at the bottom of page 15 as items 1. 2. & 3.
3. A check for the retainer specified.

	<i>Begin</i>	<i>Complete</i>
Proposal Presentation/Acceptance	3/13/2023	–
Ph 1 Concept Exploration		– ~5-6 Weeks
Ph 2 Concept Refinement		– ~2-3 Weeks
Ph 3 Mechanical Concept		– ~9 Weeks
Ph 4 Prototype Engineering		– ~5 Weeks
Ph 5 Pre-Production Engineering		concurrent w/tooling

Completion Dates are predicated upon starting the program as shown above. This also assumes receipt of technical specifications and pertinent information requested below in "Additional Resources Required from Client".

ADDITIONAL RESOURCES REQUIRED FROM CLIENT:

Upon acceptance of the proposal, StudioRed will provide to the client a *Corporate/Product Positioning Form* which will help guide the brand development work. RSK Inc. should provide all files, specifications and operational documents for the product to StudioRed; and must be received to initiate the program and to maintain the schedule as shown.

An assigned Client Program Manager will be necessary to facilitate the information transfer between StudioRed, RSK Inc. and its vendors. If Client cannot assign a Program Manager, StudioRed will be pleased to support this responsibility but may need to re-address the project fees accordingly.

Requests for information and all client approvals must be handled in a timely manner to maintain the schedule. Failure to do so in any area may result in a corresponding delay in the schedule.

SAFETY AND STANDARDS COMPLIANCE:

U.L. or equivalent, FCC, CE, CSA, RoHS and any other certifications will be the responsibility of RSK Inc.. StudioRed will address standards defined by RSK Inc. in the design with review and approval by your Engineering Manager. Copies of Standards data must be furnished at the onset of this Program. Agency certification is not part of this contract.

PHASE 1 - CONCEPT EXPLORATION:

PROGRAM:

Exploration of alternative concepts will occur, ranging from creating general configuration layouts to identifying specific ramifications of different manufacturing methods. Visual brainstorming sessions will be held to generate a wide range of design ideas.

These results along with our recommendations will be presented in the form of rough sketches and 3D foam sketch models as appropriate. We will analyze the various design tradeoffs with regard to these areas: visual theme, ergonomics, product function, assembly sequence, maintenance and manufacturing techniques.

Various mechanical concepts and assembly objectives for the product shall be explored and presented in this phase.

DELIVERABLES:

- Broad range of concept options shown in a series of sketches and/or scale cardboard or foam sketch mock-ups.
- Orthographic or 3D diagrams illustrating mechanical concepts and component layouts to validate the mechanical feasibility of each concept.
- All relevant manufacturing processes will be identified.

RESULTS:

- Form factor and component locations are established.
- User benefits are identified and ranking of the concepts are assigned for further development.
- Concept options will consider inter-relationships between aesthetic theme and assembly and manufacturing methods.
- If task 1.8 is provided, manufacturing techniques will be analyzed with regards to your schedule and cost trade-offs. RSK Inc. will then make a decision on manufacturing method.

PHASE 1 - CONCEPT EXPLORATION	Hours		
1.1 PROJECT INITIATION: Discussion of the message RSK Inc. wishes to convey as well as review of all relevant competitive products, overview of specific engineering issues, manufacturing strategies (material, assembly and cost), schedule, milestones& hurdles (Dev team).	3	–	4*
1.2 ANALYSIS: Evaluate competition, gather data, and define user profile, environment, product positioning and branding issues.	4	–	5
1.3 PERFORMANCE SPECIFICATIONS: Component functional considerations, human interface constraints, environmental requirements, develop product specification and define options. Result: Matrix of product requirements on a computer database.	1	–	3
1.4 ENGINEERING INITIATION: Mechanical engineering conception, evaluation and input time to validate concepts and initiate engineering.	0	–	0
1.5 ERGONOMIC ANALYSIS: Human factors engineering regarding product function, control and user interface areas. Define user experience.	129	–	174
1.6 COMPONENT RESEARCH: Vendor research, purchased parts, materials, and peripheral components, including unique parts. Research and review of component data obtained by RSK Inc..	5	–	7
1.7 CONCEPT DEVELOPMENT: Exhaustive form generation through sketch and/or foam studies around various mechanical configurations considering manufacturing, assembly and maintenance. Results: a broad range of designs that promote the marketing and positioning objective through sketches (2&3D) with component layouts.	86	–	123
1.8 MATERIALS & METHODS ANALYSIS: Manufacturing feasibility as per production volume and schedule (options within cost & mechanical constraints).	1	–	1
1.9 PRESENTATION PREPARATION: Production of concept sketches, mock-ups, diagrams, etc.	13	–	16
1.10 MEETINGS AND COMMUNICATIONS: Concept presentation, internal and external team meetings, phone, and email communications.	7	–	8*
PHASE 1 - TOTAL HOURS	239	–	329

*This time is not included in total hours, for additional information see Section 5, Par. 8 "Financial Agreements". "0" Although this task may be necessary for development of the Program, it is not included in the quote. It is assumed the client will provide the support activity.

PHASE 2 - CONCEPT REFINEMENT

PROGRAM:

The concepts selected at the end of Phase 1 will now be detailed and refined into a single solution. Optional solutions will be studied and presented based on the following criteria:

- New product design language and appropriate product identity statement.
- Product function and mechanical operation.
- User perception - visceral and emotional content.
- Ergonomics are maximized for comfort, performance, safety and ease of use.
- User interface is studied for ease of use.
- Visual continuity throughout every detail of the design.
- Manufacturing/Cost trade-offs are evaluated.
- Ease of assembly and maintenance is monitored for tradeoffs.

The final design will meet these objectives and start the transition into engineering through the multi-disciplined team. Engineering will evaluate all design details for mechanical integrity and technical sign-off.

DELIVERABLES:

- Aesthetic look and theme refined and established.
- Mechanical concept defined and documented in a computer database.
- Control drawing database shall provide dimensional information on all elements such as form, color, texture and graphics.

RESULTS:

- You will have a specific design and know how all elements are intended to be resolved.
- The control drawings will provide dimensional guidelines for the engineering layout and may be used to determine preliminary cost estimates and evaluate production methods.

PHASE 2 - CONCEPT REFINEMENT

Hours

2.1 CONCEPT REFINEMENT: Revise and detail selected concepts for variations in aesthetic details. Result: refined design language and product identity that integrates approved Phase 1 concepts into a final design solution.	67	–	87
2.2 PRELIMINARY ENGINEERING VALIDATION: Minimal involvement to maintain industrial design consistency to the mechanical engineering manufacturability and operational objectives.	5	–	7
2.3 CONCEPT PRESENTATION PREPARATION: Final rendering(s) or mockup(s) of approved concepts regarding configuration, form, color, texture and details of all user interface, etc.	11	–	13
2.4 FINAL CONCEPT PRESENTATION: Refined drawing(s) and or sketch mockups submitted for client acceptance, 2 persons attending.	1	–	3*
2.5 DESIGN CONTROL LAYOUT: Aesthetic concept and details are defined to direct engineering. Includes form, color, texture, logo placement, etc. This is not an engineering part drawing.	3	–	4
2.6 PRODUCT COLOR STUDY: Company, market & competitive analysis of housing & graphic legend colors. Multiple options presented.	1	–	3
2.7 MEETINGS AND COMMUNICATIONS: Design and assembly presentation, control drawing hand-off, internal and external team meetings, telephone, and email communications.	4	–	5*
PHASE 2 - TOTAL HOURS	87	–	114

*This time is not included in total hours, for additional information see Section 5, Par. 8 "Financial Agreements". "0" Although this task may be necessary for development of the Program, it is not included in the quote. It is assumed the client will provide the support activity.

PHASE 3 - MECHANICAL ENGINEERING CONCEPT

PROGRAM:

StudioRed will produce a 3D layout to tolerance in 3-D solid modeling software (SolidWorks or Pro-Engineer), which includes every item and mechanical concept in the product. Specific mechanical concepts will be evaluated, resolved and presented for client review. Electro Magnetic compatibility and safety regulatory compliance will be identified and addressed in the design. Structural concerns will be analyzed and the best design will be presented for your review. Client input is preferred and expected during this process.

Manufacturing processes will be evaluated as follows:

- Sheet metal - part and detail design review for simplicity and process concerns.
- Plastic, cast, stamped or molded metal - molding and part analysis for tooling complexity, and material choice.

Component part drawings will be done in metric or inches to industry standards, and will include notes and specifications required to industry standards. Design of the graphic information will result in options presented for your review.

DELIVERABLES:

- Agency compliance meetings will identify the complexity of the mechanical engineering requirements.
- Toleranced prototype layout created on Pro-Engineer or SolidWorks 3-D solid modeling software, per RSK Inc.'s specification of the mechanical solution.
- All components will be verified and finalized.
- Options for product graphics will be presented and a direction will be chosen.

RESULTS:

- Mechanical layout(s) will provide an efficient, effective, and low cost way to evaluate and check design configuration and function.
- Engineering is performed on Pro-Engineer or SolidWorks 3-D solid modeling software, which will provide a high level of accuracy and will facilitate quick changes and updates. Additionally, CAD transfer to client or vendor will be uncomplicated and more cost effective. **If we use an unknown molder we may incur additional time to develop compatible file transfer for tooling to be done from the Pro-Engineer or SolidWorks 3-D data file.** This cost is not included in this proposal.
- Vendor input will identify the most cost effective solutions and facilitate manufacturing and vendor selection

PHASE 3 - MECHANICAL ENGINEERING CONCEPT

Hours

3.1 MECHANICAL LAYOUT: The mechanical concept will be documented in a toleranced layout. Component configuration, structure and mechanisms will be defined and analyzed.	194	–	221
3.2 INDUSTRIAL DESIGN REFINEMENT: Industrial design participation to maintain industrial design integrity, addressing mechanical design requirements.	2	–	3
3.3 ELECTRO MAGNETIC & SAFETY REGULATORY COMPLIANCE: Standards compliance input and meeting time. This will define all mechanical design requirements. Includes one meeting for initiation and direction to the mechanical responsibilities.	2	–	3
3.4 ENGINEERING COMPONENT RESEARCH: Research and obtain data from client and manufacturers of all purchased parts required to complete the design, e.g. components, fasteners, latches, feet, gaskets, etc.	37	–	48
3.5 COMPONENT SPECIFICATIONS: Mechanical specification drawings of custom parts & processes for client's fabrication (PCB spec., etc.).	6	–	10
3.6 STRUCTURAL ANALYSIS: Calculations or FEA of strength for bosses, ribs, snaps, drop test, shock, component loading, mechanical function, etc.	10	–	16
3.7 THERMAL ANALYSIS: Theoretical calculations of component temperature and location to determine or verify fan specification & airflow design or meeting time with client or thermal consultant related to same.	0	–	3
3.8 MANUFACTURING AND MATERIAL ANALYSIS: Review & determine preferred manufacturing approaches from production vendors of appropriate manufacturing processes (i.e. sheet metal, castings, plastics etc.).	6	–	10
3.9 PRODUCT GRAPHICS: Conceptual design and refinement including legends and logo application. Does not include regulatory labeling.	2	–	3
3.10 MEETINGS AND COMMUNICATIONS: Mechanical design reviews, internal and external team meetings, telephone, and email communications, final layout approval.	13	–	16*
PHASE 3 - TOTAL HOURS	259	–	317

*This time not included in total hours, for additional information see Section 5, Par. 8 "Financial Agreements". "0" Although this task may be necessary for development of the Program, it is not included in the quote. It is assumed the client will provide the support activity.

PHASE 4 - PROTOTYPE ENGINEERING PROGRAM:

PROGRAM:

StudioRed will update the toleranced layout based on input from the Phase 3 review. Specific mechanical details will be resolved and documentation will be completed. Client review and input are preferred during this process.

Meetings regarding all potential manufacturing processes will continue to verify the produce ability of the design. Sheet metal parts will be reviewed for final detailing and assembly concerns. Plastic part design will further analyze shutoff design and tooling/ mold base sizing.

Engineering will be performed on a 3-D Solid Modeling System. Files must be released from only one single, complete layout. Because of this, only one release of the 3D database will be available to the client at the end of the contract, the completion of Phase 5, or after the final tooling approval. We will release copies of the files to all vendors of your choice at your request throughout the phase for quotation and manufacturing process evaluation. QC Drawings are produced to address all critical tolerances, color, texture, material specification etc. Two drawing releases will be available to you as follows:

1. Drawing checks release - a first pass document release. Quotations will be made from these documents.
2. Prototype Release - These will include all revisions after the drawings have been checked and will be released to RSK Inc. for prototype fabrication.
3. Component drawings in this phase - We will try to accommodate without cost impact. However, if substantial modification to the layout occurs a change in scope may be required.

Development labor to support one prototype evaluation has been included herein. If additional prototype iterations are necessary, we will incur more labor that estimated herein in both ME and PM support.

DELIVERABLES:

- Finalized prototype layout includes all details of each part created on Pro-Engineer or SolidWorks 3-D solid modeling software per RSK Inc.'s specification.
- Quality Control Drawings of prototype parts are drawn & checked to commercial standards.
- Prototype quotations compiled (if contracted). Tooling may be ordered at this time if the schedule requires.
- Functional prototype is analyzed and a list of upgrades will be presented to RSK Inc.. Client will receive the prototype and generate a list as well which will be integrated into the layout during Phase 5.

RESULTS:

- Engineering will be performed on Pro-Engineer or SolidWorks 3D solid modeling software. This will provide a high level of accuracy, simple information transfer, and easy client review and facilitate quick changes and updates.
- Prototype will be tested and changes will be determined from client, EMI Safety, and any other required Agency Compliance.

PHASE 4 - PROTOTYPE ENGINEERING	Hours		
4.1 PROTOTYPE LAYOUT: Detail design will now be adjusted to update the layout based on the Phase 3 review. Final details will be resolved with manufacturers' input and approval.	38	–	45
4.2 ENGINEERING COMPONENT RESEARCH: Additional research necessary to complete the prototype layout, obtain and review data from client and manufacturers.	8	–	10
4.3 VENDOR RESEARCH AND MANUFACTURING SUPPORT: Further review to verify part design for manufacturing simplicity, material choice, process concerns, detail design, simplicity, and vendor choice.	0	–	0
4.4 PROTOTYPE COMPONENT SPECIFICATIONS: Finalize and release mechanical spec. Drawings of custom parts & processes (e.g. PCB spec. drawing, switch layout etc.).	0	–	2
4.5 DIMENSIONED QUALITY CONTROL DRAWINGS: Preliminary fabricated parts drawings to commercial standards will include all material, textures, finishes and high tolerance areas as required. Does not include PCB layouts.	45	–	58
4.6 DRAWING CHECKS: Regarding dimensioning tolerances, accuracy and clarity of views etc.	5	–	6
4.7 GRAPHICS PRODUCTION: Label or nameplate; specification drawings with color specs; for vendor quotes and liaison. Possible production of preliminary art.	3	–	5
4.8 PROTOTYPE FABRICATION LIAISON: Support metal & plastic fabrication vendors for quotation, drawing clarification etc. Does not include fabrication labor.	6	–	8
4.9 PROTOTYPE ANALYSIS: Labor provided to receive, check, and measure (not QC). Included will be a design review & evaluation, a list of issues will be generated for review with client.	32	–	45
4.10 MEETINGS AND COMMUNICATIONS: Mechanical evaluation, client input, internal and external team meetings, telephone, fax and email communications, documentation hand off, prototype evaluation hand-off.	10	–	13*
PHASE 4 - TOTAL HOURS	137	-	179

*This time is not included in total hours, for additional information see Section 5, Par. 8 "Financial Agreements". "0" Although this task may be necessary for development of the Program, it is not included in the quote. It is assumed the client will provide the support activity.

PHASE 5 - PRE-PRODUCTION ENGINEERING

PROGRAM:

In order to convey the information we are developing, it is necessary to provide a data file and documentation release. Revisions to prototype design will be implemented in the layout and part documents, which will be re-checked and released to manufacturing for pre-production. Part and revision control lists will be compiled as part of Phase 5, i.e. 5.7.

Production assistance may be provided, ranging from support of vendor evaluation and selection, to actual supervision of quality and schedule. We prefer to work closely with vendors during pre-production to be sure that any developments that occur during this time are included in document revisions.

DELIVERABLES:

- Pre-production documentation is checked and released.
- Vendor questions will be supported and resolved.
- All manufacturing processes will be supported and details will be resolved to address cost and production simplicity.
- Review of first article inspection reports and for fit, color, texture, etc. (we have not included time to produce Quality Control inspection reports).
- Manufacturing design developments incorporated into documentation.
- Part and Drawing revision lists will be completed.
- Assembly Drawings will be completed (if contracted).

RESULTS:

- Manufacturing of the new design begins, enabling scheduling of final testing and delivery to customer.
- Ability to start Beta Test run of hundreds of units.

Note: *Design changes occurring during this phase shall constitute a change in scope, in which case the Engineering Program shall be modified accordingly.*

PHASE 5 - PRE-PRODUCTION ENGINEERING

Hours

5.1 PRE-PRODUCTION LAYOUT: Review and update layout to address specific manufacturing requirements and update data file per drawing changes.	11	–	13
5.2 PRE-PRODUCTION PARTS DRAWINGS: Revise prototype drawings to improve, simplify and cost reduce design details to specific manufacturing requirements.	10	–	11
5.3 DRAWING CHECKS: Updating of pre-production drawings and changes of prototype drawings. May include updating the layout to confirm form/fit/function.	2	–	3
5.4 TOOLING SUPERVISION: Meetings to assist in vendor review and drawing support, molding part analysis for tooling, and mold base sizing, etc. Quoted time may increase if non-local sources are chosen (production part mold debugging is not included but may be provided on a time and materials basis).	3	–	5
5.5 VENDOR LIAISON: Buyout component production support. Sheet metal, purchased or fabricated parts and processes. This item may increase if non-local sources are chosen.	3	–	5
5.6 ELECTRICAL ENGINEERING SUPPORT: Includes interaction with PCB manufacturer and electrical engineer.	0	–	2
5.7 ASSEMBLY DRAWINGS: Exploded views of fabricated parts, these drawings are not intended as bills of materials.	6	–	8
5.8 PARTS LIST: Drawing revision control, components, buyouts, it is not intended as a bill of materials.	3	–	5
5.9 MEETINGS AND COMMUNICATIONS: * Layout reviews, documentation hand-off, 1st article inspection, final program review, internal and external team meetings, telephone, fax and email communications.	8	–	10*

PHASE 5 - TOTAL HOURS

38 – 52

*This time is not included in total hours, for additional information see Section 5, Par. 8 "Financial Agreements". "0" Although this task may be necessary for development of the Program, it is not included in the quote. It is assumed the client will provide the support activity.

SUMMARY OF CALCULATIONS

Project: E22036.PWR

Phase	Task	Start	End	Unit	Rate	Low	High	Range
Phase 1	Concept Exploration							
	Design	239	329	hrs @	\$ 198.00	\$47,322.00	\$65,142.00	
	Project coord.	31	43	hrs @	\$ 219.00	\$6,789.00	\$9,417.00	
	Total	270	372			= \$54,111.00	\$74,559.00	
Phase 2	Concept Refinement							
	Design	87	114	hrs @	\$ 198.00	\$17,226.00	\$22,572.00	
	Project coord.	12	15	hrs @	\$ 219.00	\$2,628.00	\$3,285.00	
	Total	99	129			= \$19,854.00	\$25,857.00	
Phase 3	Mechanical Engineering Concept							
	Engineering	253	307	hrs @	\$ 198.00	\$50,094.00	\$60,786.00	
	Drafting	6	10	hrs @	\$ 198.00	\$1,188.00	\$1,980.00	
	Project coord.	34	42	hrs @	\$ 219.00	\$7,446.00	\$9,198.00	
	Total	293	359			= \$58,728.00	\$71,964.00	
Phase 4	Prototype Engineering							
	Engineering	92	121	hrs @	\$ 198.00	\$18,216.00	\$23,958.00	
	Drafting	45	58	hrs @	\$ 198.00	\$8,910.00	\$11,484.00	
	Project coord.	19	24	hrs @	\$ 219.00	\$4,161.00	\$5,256.00	
	Total	156	203			= \$31,287.00	\$40,698.00	
Phase 5	Pre-Production Engineering							
	Engineering	28	41	hrs @	\$ 198.00	\$5,544.00	\$8,118.00	
	Drafting	10	11	hrs @	\$ 198.00	\$1,980.00	\$2,178.00	
	Project coord.	6	8	hrs @	\$ 219.00	\$1,314.00	\$1,752.00	
	Total	44	60			= \$ 8,838.00	\$12,048.00	
1. Total all phases		862	1123	hrs		\$172,818.00	\$225,126.00	

2. Materials NTE 5% of total labor noted above**\$11,256.00**

Meeting time is estimated only and will be invoiced as time spent based on the billing rate of the individual(s) attending. Staff rates range from \$90/hr for Staff Designers to \$331/hr for Officers. This will be reflected on the invoice as a separate line. The costs noted below are estimated times show in tasks noted in each phase.

Phase 1 Initiation and Presentations, 1.1 & 1.10	\$ 1,980.00	\$ 2,376.00
Phase 2 Presentation- 2 meetings – 2.4, 2.7	\$ 990.00	\$ 1,584.00
Phase 3 Kickoff and Presentation – 3.10	\$ 2,574.00	\$ 3,168.00
Phase 4 Prototype review – 4.10	\$ 1,980.00	\$ 2,574.00
Phase 5 Reviews and File Handoff – 5.9	\$ 1,584.00	\$ 1,980.00

3. Total Meeting Time Estimated	\$ 9,108.00	\$11,682.00
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4. Electrical Engineering Support

Budget will only be applied if a battery powered solution is determined to be the preferred path.

\$40,000.00**\$50,000.00****TOTAL PO AMOUNT:****\$298,064.00****Retainer Required : (1/3 of the low range of estimated labor)****\$57,606.00**

5. FINANCIAL ARRANGEMENT

StudioRed organized the work into a set of specified tasks within five phases. The time estimated to complete the program is presented as a *range of hours* for the tasks defined. The fee is based on the number of hours estimated for those tasks using a standard charge rate for the range of hours proposed. The hours *actually charged* for each task/group in a phase may vary from the hours estimated. That is, the fees for some tasks/groups may be higher or lower than proposed. For billing purposes, StudioRed calculates its fee for the work performed by recording staff's actual project time at staff's actual billing rates. Phase budgets are provided for planning purposes. StudioRed will not invoice beyond the total fee for all cumulative phases completed without client approval. However, StudioRed will invoice its actual accumulated project fees as earned.

Scope Change - The scope of the program estimated is defined under the *Client Product Requirements* section. StudioRed will work diligently to complete the program as proposed. However, timing may be affected by changes in project scope or scope complexity. As such, the time frame and/or delivery dates specified by Client or StudioRed are considered best estimates and not binding. A more accurate estimate of the effort required to complete the project may be available based on the final design approved by Client following completion of Phase 2. If changes in the scope of the program cause the fee estimate to be materially exceeded, then StudioRed shall apprise the Client in writing in advance, and request Client to approve a revised fee estimate based on the approved scope changes. StudioRed may stop its work on the program, without penalty, until StudioRed and Client agree in writing to an equitable fee that reflects the required change in scope, or to maintain the original scope and fee as proposed.

Invoicing - Invoices are prepared twice monthly; details include actual project staff fees and project materials used during the billing period. Invoices are due "net 30" based on Client's good credit standing, unless Client and StudioRed agree otherwise prior to start of the job. Client agrees to pay StudioRed interest charges of 1.5% per month on unpaid past due balances (i.e., over thirty days), If collection is required, Client will be responsible for all additional costs including attorney's fees.

Retainer - The project shall be initiated upon StudioRed's receipt of a Retainer equal to one third of the proposed fee. The retainer will be applied to the final invoices of the contract.

Schedule Issues - The program will be conducted on a normal 5 days-per-week work schedule. StudioRed will work diligently to meet proposed schedule commitments. These are confirmed during the kick-off meeting. However, StudioRed is not responsible for slippage in the schedule because key information is not provided by Client, or due to Client's failure to make key decisions. In the latter cases, the Client will determine whether to accept the possible extended schedule caused by its internal delays, or whether to commit additional funds needed to address the extra costs needed to accelerate the effort.

Travel - Travel time for meetings beyond the local area are not included in the fee proposal. However, if required, StudioRed personnel are available for out-of-area meetings. This time will be charged at a maximum rate of 8 hours per employee-day.

Materials - In addition to StudioRed professional fee charges, Client will be responsible for, and billed for, all materials used to complete Client's program. "Materials" may include graphics-associated expenses, faxing and photocopying expenses, long distance telephone, model shop expenses, staff mileage expenses; and all other expenses directly associated with the Client project. Local mileage is billed consistent with StudioRed standard reimbursement policy. Total Materials expense for the project typically falls within 3 to 5 % of the total fees for the project. Further, StudioRed agrees that "Materials" charges will not exceed 5% of the total professional fees proposed. A provision for these Materials costs will be included in the purchase order amount issued by Client.

Meetings - Meeting time for the project is estimated for each phase in StudioRed proposal. This time is the standard time historically required by StudioRed to meet with project staff (weekly) and with the Client--in person, via telephone and via e-mail-- to exchange data, ideas, and other project information necessary to complete the program. Occasionally, a Client may request additional meeting time (beyond the budgeted hours for meetings) for its internal communications and coordination purposes. StudioRed will make every effort to comply with and accommodate additional Client needs for meetings, as determined by the Client. If StudioRed actual fees for meetings exceed the standard fees estimated in StudioRed proposal, Client agrees to reimburse StudioRed for the additional meeting fees earned. StudioRed staff shall maintain detailed records of its meeting time; and invoices shall reflect staff's standard hourly rates for this activity. StudioRed shall apprise Client of any excess meeting charges as soon as identified during the project; and shall report the actual versus budget on a regular basis thereafter. The additional fees are payable only if the StudioRed total actual fees for the project exceed the maximum fee proposed.

6. TERMS AND CONDITIONS

THIS CONTRACT IS ACCEPTED SUBJECT TO THE TERMS AND CONDITIONS DESCRIBED HERETO.

Estimates - Estimates are not valid beyond thirty calendar days from date of issuance without written permission of StudioRed. Project fees are subject to modification; however, Client approval shall be obtained for any increases in fees or expenses that are in excess of ten percent of the quoted price. This document may be signed in duplicate counterparts.

Payment - Invoices are payable upon receipt and 1 1/2% monthly service charge is payable on all balances not paid in full within 30 days of date of issuance. An advance against the final payment of the project authorization is required prior to project commencement in the amount indicated. In the event of default, we will be entitled to all costs of collection, including reasonable attorneys' fees. Client will be responsible for any applicable sales tax.

Expenses - Unless otherwise agreed to in writing, quoted prices exclude StudioRed expenses. Client shall reimburse StudioRed for all direct and out-of-pocket expenses incurred specifically related to the work involved with this project including any sales tax due. Out of pocket expenses will be billed at cost plus 15% for administration.

Intellectual Property - StudioRed agrees that Client shall own all design and engineering work, patent rights and inventions that are conceived and reduced to practice during the course of providing services to Client and which are embodied in the final work product. StudioRed further grants Client a royalty-free, non-exclusive, worldwide license for all StudioRed owned concepts and patent rights that are part of our final work product. These assignments of the work product and/or licenses become effective once Client has paid all amounts to which StudioRed is entitled. Other than the rights assigned and or licensed as per above StudioRed retains all remaining intellectual property and proprietary rights in all inventions and work of authorship prepared by StudioRed that are not embodied in the final product. StudioRed will cooperate with Client to help secure patent rights at Client's expense.

Modifications - Client shall be responsible for making additional payment for changes requested by Client that are not in the original contract scope of work. Modifications of this contract shall be made only with the written consent of both parties. Notwithstanding, StudioRed shall be entitled to invoice, and the Client shall be obligated to pay, all extra fees and expenses that were orally authorized by the Client's project coordinator (or other Client representative in-charge of project conduct) in order to expedite project completion, or to otherwise process the work in a timely manner as specified by Client.

Confidentiality - StudioRed agrees to keep confidential and not to disclose to any person, other than those directly engaged in performance of services, which are subject to this contract, any details or information concerning any design or development being performed by StudioRed for the Client.

Items Furnished by Client - All designs, tools, patterns, drawings and other data as well as materials or equipment supplied by the Client to StudioRed shall remain the sole property of the Client. Client shall be responsible for the cost to return such aforementioned items to Client during the contract or upon termination or completion of the project.

Consideration - Whereas, it is understood and agreed that the continuity and fidelity of the employees of StudioRed, Incorporated and the performance of their services as such is necessary and vital to the health and integrity of the company. Therefore, as additional consideration of these premises, it is agreed that Client shall not, directly or indirectly, solicit, hire, or engage in employment any of the employees of StudioRed, Incorporated, for so long as this contract is in force and effect, and for a period of one (1) year thereafter.

Cancellations - In the event of cancellation of this contract, a fee for work completed at the time of cancellation and expenses already incurred shall be paid by the Client. Upon receipt of said fee, ownership of all copyrights and the original artwork will transfer to Client. In the event of breach of contract by StudioRed, Client's sole remedy shall be the right to recover damages in the amount equal to the difference between the price of work already completed at the time of the breach and the total contract price. No alternative method of measuring damage shall apply,

and the Client shall not be entitled to recover incidental damages as defined in the California Commercial Code.


Indemnification of StudioRed; Limits on Its Liability. StudioRed obligations are limited to producing industrial designs in accordance with Client's instructions and requests and, where applicable, in conformance with Client-supplied specifications. Once Client accepts StudioRed industrial designs and proceeds to manufacture, by itself or through others, products utilizing those designs, StudioRed is no longer in control of or responsible for the implementation of its designs into actual products. Client therefore agrees to indemnify, defend and hold StudioRed, its shareholders, directors, officers, employees and agents and each of them harmless from and against any and all claims, actions, proceedings, awards and judgments, including for attorneys' and experts' fees and expenses, arising out of or related to any injuries to any third parties alleged or proved to be proximately caused by defects, deficiencies, oversights or omissions in StudioRed designs. With the exception of changes needed to correct oversights or deficiencies in the documentation that it supplies for its industrial designs prior to final acceptance by Client, StudioRed shall not be liable or responsible for Client's costs incurred in making any needed changes to or corrections of tooling, prototyping or final product manufacture relating to any work designed by StudioRed . Apart from its express warranties set forth in this Agreement, StudioRed makes no warranties or guarantees, whether express or implied, regarding or relating to the designs, documentation or any materials or services furnished or provided under this Agreement. IN NO EVENT SHALL STUDIORED BE LIABLE FOR ANY INDIRECT, CONSEQUENTIAL, PUNITIVE OR SPECIAL DAMAGES, EVEN IF ADVISED IN ADVANCE OF THEIR POSSIBILITY.

Attorney's Fees - Should any litigation be commenced between the parties hereto concerning this agreement, the rights or duties of either designer or Client in relation thereto, or designer's work hereunder whether an action for damages, equitable or declaratory relief, the prevailing party in such litigation shall be awarded, in addition to any other relief to which it is entitled, reasonable attorney fees and expenses and costs of suit.

RSK INC.

Company Name

I HAVE READ, UNDERSTAND AND ACKNOWLEDGE RECEIPT OF THE TERMS AND CONDITIONS OF THIS PROPOSAL AND BY MY SIGNATURE ACCEPT THEM AS STATED HEREIN.

Authorized Signature & Title		Date
	President	March 13, 2023
Authorized Signature & Title StudioRed, Incorporated		Date

Attachment A

This attachment provides a detailed component and parts list which we use to define the engineering complexity and development labor hours. You will see columns defined as 3.1 ML (Task 3.1 Mechanical Layout) and 3.4 CR (Task 3.4 Component Research) 3.5 CS (Task 3.5 Component Specification) and 4.5 Dft (Task 4.5 Drafting), which relate exactly to the task numbers and names in our Phases. These are a good explanation of the detail about what makes up labor hours in each of those tasks in our quote.

Assembly	Part	3.1	ML	3.4	CR	3.5	CS	4.5	Dft
Preliminary Support		0	0	0	0	0	0	0	0
	Product Requirements Document further developed with client, including initial product road map	3	5	2	3	3	5	0	0
	Review current prototype and gear train concerns for targeted improvements	5	6	3	5	0	0	0	0
	Review power drive options (gasoline or DCV battery electric) for application, torque, speed, run time, weight to power, cost and availability off the shelf for down select to one drive approach, includes initial source vetting	19	26	16	19	3	5	0	0
	With selected drive approach, establish final product architecture with weight distribution and ease of use, create master CAD layout with key dimensional controls	10	13	2	2	0	0	0	0
Detailed Engineering Development	Lute tines and lower frame with mounts	10	16	2	2	0	0	5	6

Eccentric blade drive with gearing and bushings and mounts	19	29	2	3	0	0	16	22
Wheels and mounts, non-adjustable height	5	6	0	0	0	0	3	5
Electric motor drive incorp with drive connection to eccentrics, mounts and cover	29	0	3	0	0	0	6	0
Gas motor drive incorp with connection shaft with simple centrifugal, OTS, clutch incorp, mounts and cover	0	38	0	5	0	0	0	8
Fuel tank and fuel delivery / line incorp with mounts	0	10	0	3	0	0	0	3
Handle shaft with mounting, non-extending	3	5	0	0	0	0	2	3
Handle plastic shroud, L and R halves, with mounts to shaft and controls	22	29	0	0	0	0	5	6
Throttle, off the shelf (cable with return spring or rheostat), with mounting, custom button / lever cover on high	6	16	2	3	0	0	0	3
Removable Battery, confirm supplier, connection with latch, similar too design, incorp off the shelf components, no on unit charging	48	0	5	0	0	0	8	0
Additional handle on high with angle adjustment	8	13	0	0	0	0	0	0

	Cable routing (electrical or throttle), check lengths, OTS options and clearances	6	10	2	3	0	0	0	0
Totals		194	221	37	48	6	10	45	58

Assumptions:

Useable 3D files provided by client or suppliers, with key lute function dimensions available (blade features, height to ground, so on)

All requirements, specifications and certifications provided by, owned by and supported by client, including testing

Preliminary efforts supports confirming best off the shelf power approach for drive, gasoline or battery electric. Subsequent efforts will focus on a single approach.

Gas powered design would use available off the shelf engine, clutch and fuel supply components from vetted supplier.

Electric powered design would use available off the shelf DC motor, throttle and battery packs/charger (no custom battery/charger support here).

Custom removable battery pack and charger are considerable development and certification expenses. Please see where noted.

Minimally dimensioned drawings only to support incoming inspection and key dimensions

No rendering support for marketing quoted here.

No EMI shielding required in enclosure. All shielding at component level or controlled through interconnections.

This is not a connected device.

The Power Lute itself will be a low voltage device (other than spark plug actuation if gas powered).

Environmental sealing will be for wash or wipe down / rain requirement. Product requirements are not fully defined yet but this will be support in preliminary efforts.

No drop or shock requirement defined yet

No packaging or shipping container development quoted here

No use force loads defined. Actual current prototype will be available to base line assessment and load estimation support.

No vibration isolation requirement requested or defined.

Cost of Goods goal not fully established yet.

No height adjustment features requested

After preliminary development, further product definition and power train selection, scoped support may need re-assessed.

Safety assessment and certification testing, electrical and firmware engineering, if needed, are quoted elsewhere.

Contract manufacturer selection support and coordination listed where noted.

Client responsible for establishing business relationships with viable suppliers, vendors and manufacturers.

No weight goal established yet

No thermal management, active cooling or analysis estimated here. No ambient temperature range for use set yet. Battery design, OTS, will already meet viable ambient.