



Team Senior

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# Clowe and Cowan Overview

- Clowe & Cowan of El Paso, LLC is an international leader in the design, engineering, implementation, and service of innovative waterworks and wastewater treatment systems for municipal, mining, refineries, power plants, food & dairy and commercial industries. Their portfolio of equipment supplier and distributorship solutions includes products and services that are used extensively throughout the United States and Mexico. With over 50 years of experience, Clowe & Cowan of El Paso, LLC's industry leadership is unmatched with innovative engineering, cost-effective solutions, quality support, and unmatched customer service

# Project Objectives



PROFIT OPTIMIZATION



SPACE OPTIMIZATION



MATERIAL HANDLING  
IMPROVEMENTS



LEAVE AVAILABLE  
AREAS FOR FUTURE  
GROWTH



EFFECTIVE USE OF  
RESOURCES



FACILITATE  
MAINTENANCE  
(EQUIPMENT AND  
FACILITY)



SIMULATION  
IMPLEMENTATION

# Primary Project Activities and Tasks



Define and analyze  
profit and money  
flow



Identify warehouse  
layout



Evaluate alternative  
facility layouts



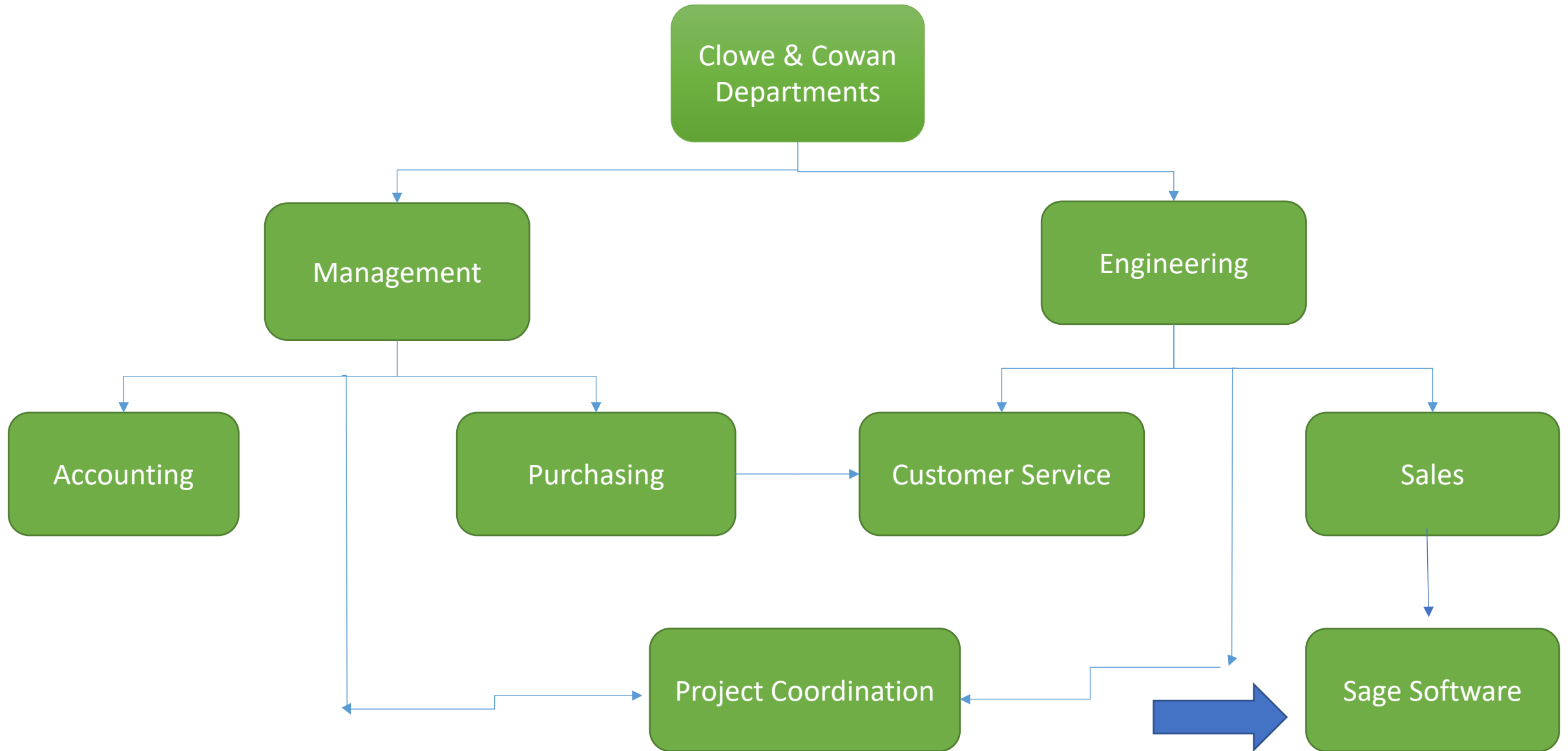
Analyze and design  
systems for the  
company processes



Determine the  
financial impact for  
the company

# Project Proposal

- We have proposed the implementation of optimized communication systems between the company's departments and the developing of a better way to order materials so mistakes can be avoided through engineering methods.
- The company uses Sage 50 Accounting software to manage their sales and inventory. Our task as a team consists in improving their system through the optimized documentation of data.
- An implemented inventory system will help the company's use of Sage 50 Software and a better management of the physical equipment in the warehouse.



# Goals and Objectives

- Optimize the organization for the Sage Software data for Tsurumi Pumps which involves input of data such as part numbers, and its price
- Compare different data documents to make sure all information is current and correct
- Reduce the duplicates and inactivate the items that are not being used anymore
- Verify the item location and existence physically to reduce mistakes and avoid waste of time within the warehouse
- Work through engineering systems for communication between departments and simulation for the warehouse.
- The results target the implementation for the company sales progress through engineering methods and designs

# First Steps

- We met the company's employees, employers and their departments name and function
- We were introduced to the different areas within the building and the warehouse so we could understand the layout of the place better
- We identified the problems for the Sales Department and its use of the Sage Software
- We successfully extracted the key information from the company's data with the help of the employer and employees
- We worked in the research and understanding of how the equipment is used within the hydraulic systems and how to implement a better organization of the Sage Software through the data we were provided with



# What is Sage Accounting Software?

- Tool for managing financial services
- Take control of accounting consolidations
- Eliminates paper waste as a modern technology
- Maximizes productivity and performance
- Accurate, consistent, current and visual
- Fast, accessible and easy to use
- Optimizes decision making
- Minimizes risks and increases process efficiency
- Secures information and reduces costs

# Company Problem

- Inventory system has been manually filled through the years; items do not follow the same format
- Some inventory parts are duplicated through the system
- Some inventory parts lack information about the warehouse items such as part number or item description
- Item quantities in the system are not current
- Items have a minimum stock quality that should be optimized
- Inactive inventory utilizes too much space in the inventory and physically in the warehouse

# Recommendations Objectives



# What are Tsurumi Pumps?

- We were required to concentrate in the Tsurumi Pumps inventory
- Tsurumi pumps have been in the manufacturing industry since 1924 throughout the world
- Pumps work as an efficient tool for all types of hydraulic problems
- Can be utilized for many areas such as construction, civil engineering, mining, industrial wastewater, domestic wastewater, sewage treatment and flood remediation
- Its manufacture ensures endurable technology
- This is the reason why Clowe & Cowan of El Paso is a distributor of these pumps as they assure client satisfaction

# Tsurumi Pumps

- As the Tsurumi Pumps play an important part in the company's supply chain, there is a variety of pump types in the inventory
- Pumps can be utilized in many different areas as they serve for different purposes. They come in different presentations and sizes; depending on the targeted problem
- These items are very common to find in the inventory, meaning that some of these part numbers are duplicated and their information is incomplete
- Our concentration for this project focuses on fixing the inventory system based on Tsurumi Pumps by the physical and logical analyzation on the storage of these

# Inventory Information

Item ID	Item Description	Description for Sales	Part Number	Stocking U/M	List Price	Last Unit Cost
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- Item IDs are assigned to every part in the inventory, both active and inactive. The format follows #123-4567 most of the time. The first 3 digits identify the manufacturers for the product. In this case, Tsurumi items are categorized with #123 while the rest of the description is particular for the specific pump type. We have some items that are the same and have a different Item ID
- Item Descriptions depend on what the product is, its use and its dimensions. Descriptions are not always consistent as sometimes it initiates with the measurements, but other times it initiates with the adequate wording for targeting the item

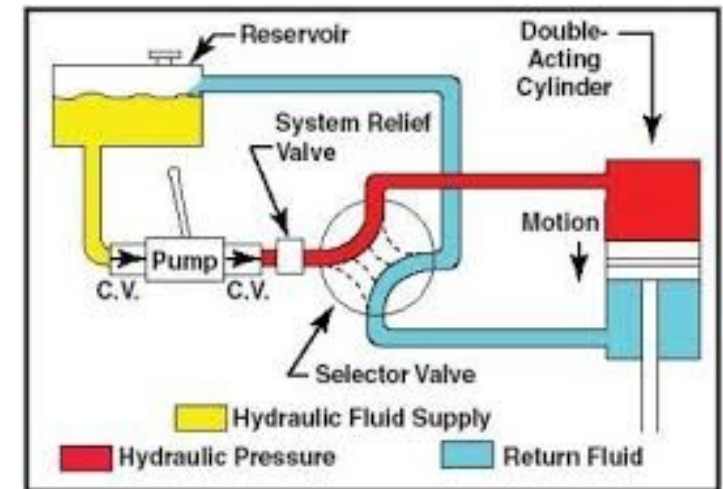
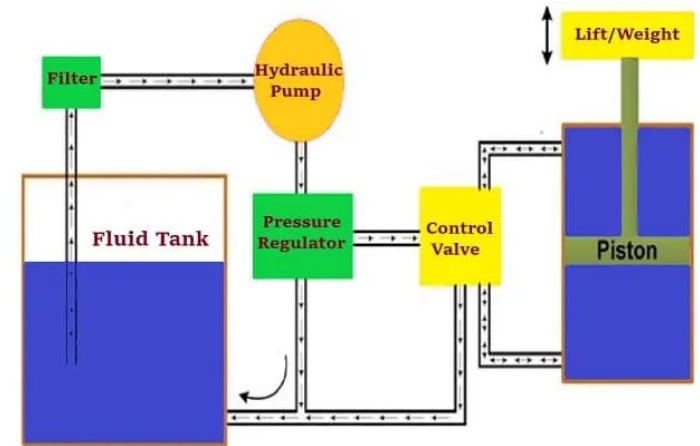
# Inventory Information

Item ID	Item Description	Description for Sales	Part Number	Stocking U/M	List Price	Last Unit Cost
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- The Description for Sales is based on the Item Description. Sometimes both descriptions are exactly the same, and other times the details and length varies
- The Part Number is exclusive to a specific item. We use advantage of the Part Numbers in order to find the duplicates. These duplicated items will have the same Part Number but a different Item ID and a different description
- For this project we are not targeting Stocking U/M, List Prices and Last Unit Costs. We will only consider and analyze the Prices and Cost for the duplicate parts.

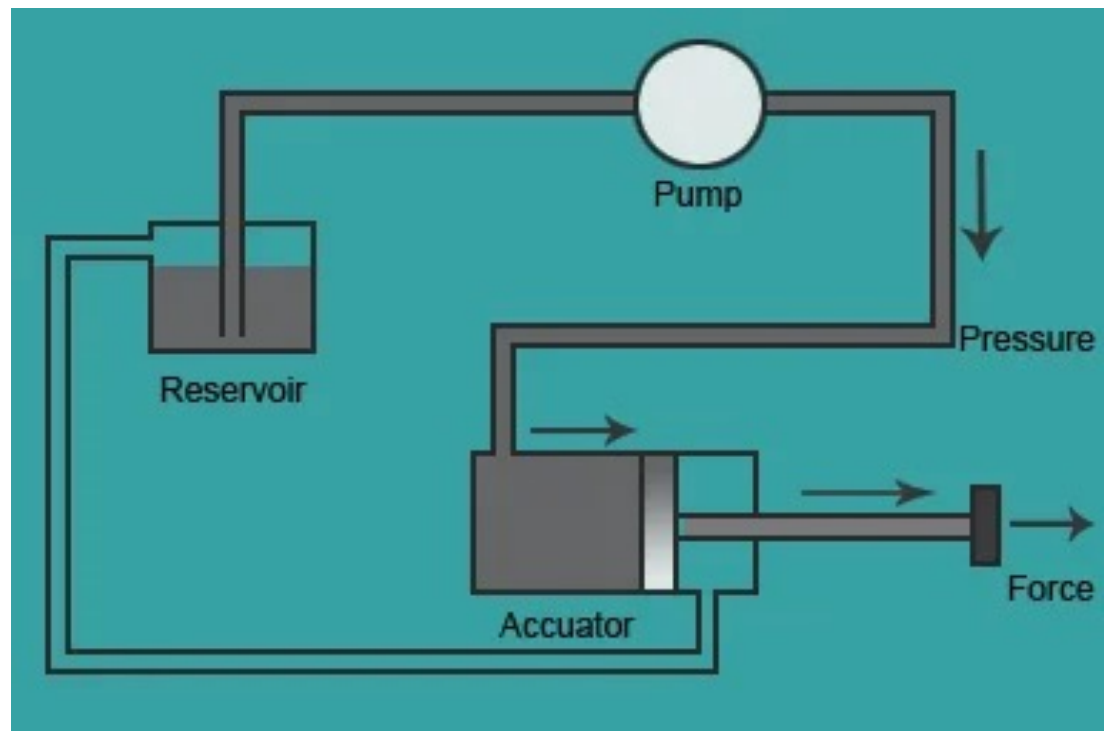
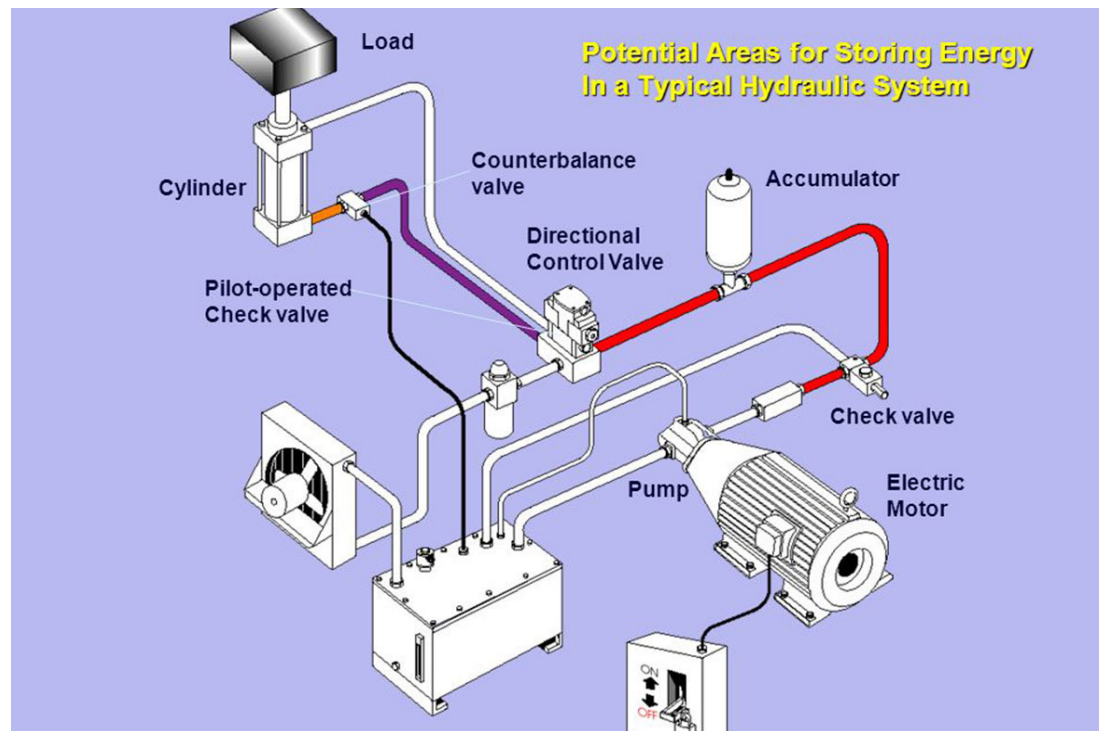
# Hydraulic Systems Research

- Our project includes the research of Hydraulic Systems where the Tsurumi Pumps are used to understand the engineering processes



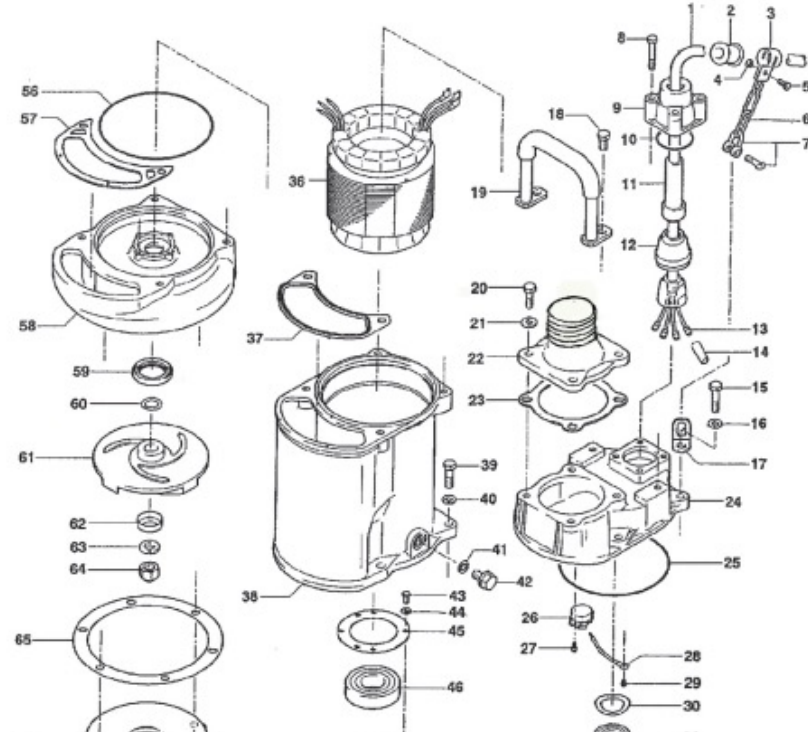


# Hydraulic Systems Research

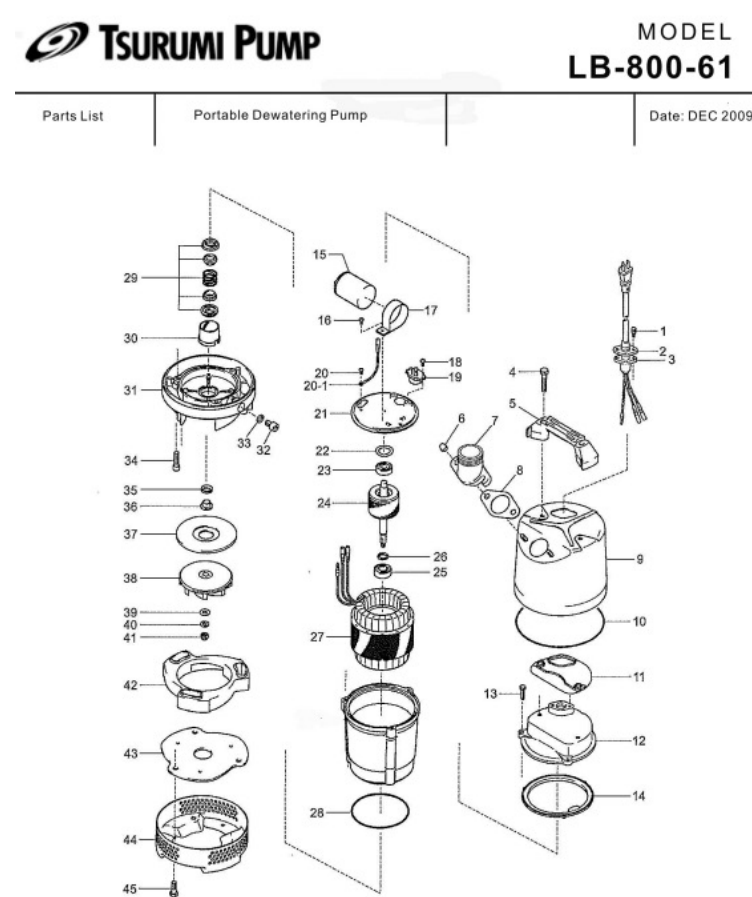
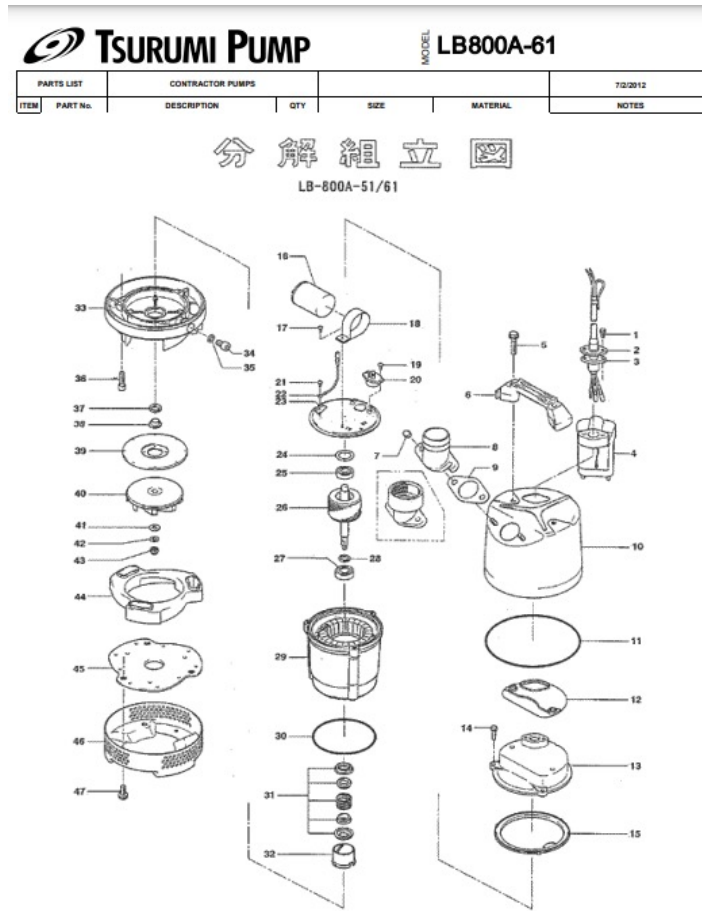
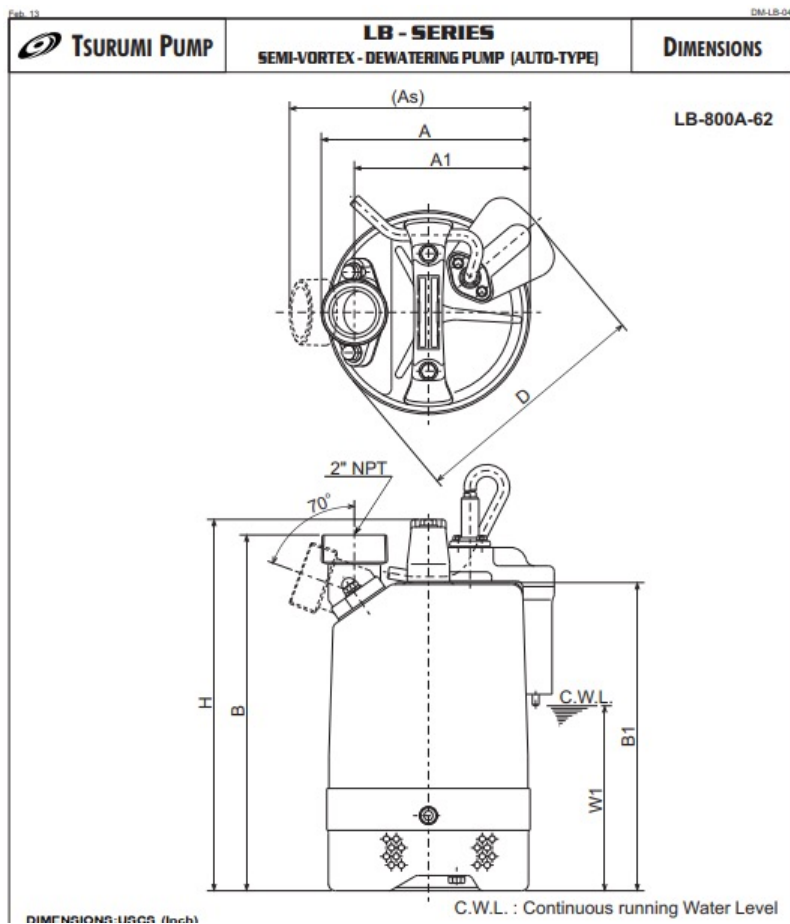


# Tsurumi Pumps Components Parts

- Transformers
- Motor Controllers
- Junction Box
- Wellhead
- Cable Bands
- Gas separator
- Drain Valves



# Tsurumi Pumps Components



# Challenges

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Once we extracted information from the company's software, we created an excel document where we struggled with correct formatting



We had to learn what an excel VLOOKUP was along with other excel functions that we had not previously used



We had to manage time organization as we struggled during some parts of the project



We had to put in practice analyzation skills to find a concrete solution and fix what was needed for the system



We had to depend on the help of the employees based on their availability since they are constantly busy with their work



## What We Learned

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- By observing a professional setting and having a small participation, we experienced a real-life work experience, introducing expectations for when we get a job
- How the supply chain of the company works
- How the warehouse functions
- The differences between the company's departments and their tasks
- How different skills at a workplace can come together and build better systems
- The priorities that are needed to be considered when doing any task
- Learned to consider the needs for all employees





# What We Learned

- Learned how the Sage software works; how the information is stored and how to make changes to the information
- Learned how people think differently at the workplace and how that creates variety when it comes to the input of equipment information
- How to come together as a team and come with solutions and recommendations
- How the company's organization of information works based on their preferences and needs
- How to identify duplicated information, items missing descriptions and price changes for the equipment



# What We Learned

- We learned new excel skills, especially a VLOOKUP as it was the tool used the most for finding the information needed to get our results, prices, and conclusions
- Communication and presentation skills were a big part of our learning
- We identified the different equipment utilized by the company and its engineering relevance
- Learned about hydraulic systems and the engineering behind it
- Learned how Tsurumi pumps play an important role within the company's industry and how they work
- Learned the variety of Tsurumi equipment and its uses

# Results - Duplicates

- We found 20 items that were duplicated, meaning the inventory system listed 40 items when there was only 20

EPD#	EPD#	Part Number
850-2114	S850-0756	80PU22.2
850-6042	S850-1601	025-001-17
850-7176	S850-1134	020-002-95
850-8052	S850-1589	053-001-67
850-8174	S850-0493	029-000-39
S850-0125	S850-1643	050-407-19
S850-0161	S850-1637	051-222-11
S850-0467	S850-1298	140-127-14
S850-0468	S850-1300	143-027-12
S850-0566	S850-1376	142-161-16
S850-0673	S850-1309	030-150-12
S850-0711	S850-1610	003-149-14
S850-0797	S850-1377	140-021-17
S850-0882	S850-1437	047-105-14
S850-1011	S850-1472	026-217-15
S850-1040	S850-1612	062-207-14
S850-1058	S850-1175	130312025
S850-1193	S850-1419	023-113-11
S850-1260	S850-1412	047-106-28
S850-1286	S850-1268	147-073-15



# Results – Information Missing

Item ID	Part Number
S850-0004	
S850-0049	
S850-0113	
S850-0126	
S850-0193	
S850-0267	
S850-0364	
S850-0390	

Item ID	Part Number
850-0800	
850-1000	
850-1010	
850-1015	
850-1020	
850-1028	
850-1030	
850-1033	
850-1034	



- We found  $15 + 280 = 295$  items that are missing a Part Number

Item Code	Item Code Description	Product Type	List Price	Net Price	Old Net Price	Price Co	Product Li	Inactive It	EDP
001-001-18	Cable 4C x 14AWG x 65' w/gland	Finished Good	\$ 1,040.70	\$ 520.35	\$ 1,040.70	PART	PART	N	S850-1025
001-003-39	Cable 3C x 14AWG x 32' W/FLOAT	Finished Good	\$ 150.10	\$ 75.05	\$ 130.50	PART	PART	N	S850-1169
001-007-59	Cable 3C x 1AWG x 65'	Finished Good	\$ 4,716.00	\$ 2,358.00		PART	PART	N	S850-1318
001-007-71	Cable 9C x 4AWG x 65' w/stbx	Finished Good	\$ -	\$ -	\$ 4,620.00	PART	PART	N	S850-1638
001-149-21	Cable 4C x 14AWG x 32' w/gland	Finished Good	\$ 169.40	\$ 84.70	\$ 184.40	PART	PART	N	S850-0111
001-150-25	Cable 4C x 12AWG x 32' w/gland	Finished Good	\$ 316.20	\$ 158.10	\$ 274.90	PART	PART	N	S850-1335
001-210-37	Cable 4C x 12AWG x 32' w/gland	Finished Good	\$ 330.20	\$ 165.10	\$ 287.10	PART	PART	N	S850-0258
001-303-12	Cable 10C x 2AWG x 50' w/stbx	Finished Good	\$ 6,034.10	\$ 3,017.05	\$ 6,558.70	PART	PART	N	S850-0734
001-308-33	Cable 4C x 14AWG x 50' w/stbx	Finished Good	\$ 551.60	\$ 275.80	\$ 599.50	PART	PART	N	S850-0658
001-309-34	*Cable new #001-376-32	Finished Good	\$ 712.90	\$ 356.45	\$ 774.90	PART	PART	N	S850-0543
001-314-32	Cable 4C x 8AWG x 50' w/stbx	Finished Good	\$ 1,335.90	\$ 667.95	\$ 1,335.90	PART	PART	N	S850-1244
001-482-29	Cable new #001-004-88	Finished Good	\$ 292.10	\$ 146.05	\$ 254.00	PART	PART	N	S850-0136
001-500-11	Cable 3C x 12AWG x 32' w/stbx	Finished Good	\$ 449.20	\$ 224.60	\$ 390.60	PART	PART	N	S850-0476
001-509-36	Cable 4C x 12AWG x 50' w/stbx	Finished Good	\$ 794.50	\$ 397.25	\$ 864.80	PART	PART	N	S850-1636
001-803-20	Cable 4C x 16AWG x 32' w/gland	Finished Good	\$ 143.70	\$ 71.85	\$ 124.90	PART	PART	N	S850-0257
001-803-33	Cable 4C x 16AWG x 50' w/gland	Finished Good	\$ 199.60	\$ 99.80	\$ 173.50	PART	PART	N	S850-0558
001-840-32	Cable 4C x 14AWG x 50' w/stbx	Finished Good	\$ 712.40	\$ 356.20	\$ 619.40	PART	PART	N	S850-1206
001-844-36	Cable 4C x 8AWG x 50' w/stbx	Finished Good	\$ 1,832.00	\$ 916.00	\$ 1,832.00	PART	PART	N	S850-0188
001-926-17	Cable 4C x 14AWG x 32' w/gland	Finished Good	\$ 226.10	\$ 113.05	\$ 196.60	PART	PART	N	S850-1314
001-943-36	Cable 3Cx16AWG x 20' w/gland n	Finished Good	\$ 74.80	\$ 37.40	\$ 65.00	PART	PART	N	S850-1168

## Results – Prices Updates

- We identified # Tsurumi items sold through the company that had a price update
- We updated the price information into the system for each of these items for the purpose of the company's benefit

## Recommendations

- Our recommendations to the company includes deleting the duplicated items that are saved into the system and keeping the ones that are used the most
- As we identified items that are missing information or some description, we recommend to fill out the black spaces for future uses to avoid any problems or confusion
- We included a list of the price changes that were recommended and then changed for the Tsurumi equipment



## Conclusion

- All duplicated items were deleted from the system
- All items without a full description were corrected
- Correct price ranges for the Tsurumi Pumps were updated
- Warehouse inventory was successfully updated.



## Future Work

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The company can implement the ideas for this project this way....

- Choose the right inventory software.
- Identify the new stock.
- Track the inventory
- Reduce equipment repair.
- Updating Prices

