

# Elevated Manufacturing Metal Stamping Machines to Enhance Productivity. Thailand

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**Abstract.** A guideline for the development of industry competitiveness, metal stamping manufacturing needs to be modified starting from labor and competitive costs, according to the ability to develop into the economic society, one of the most important production factors is the ability of people to rely on the cooperation of private and public sectors. Establishing factory standards and factory operators. Must try to raise the level of productivity, elevate the organization's built-in knowledge. In the system of automation or industrial 4.0, the operator should consider the need and benefits of investing to adapt to both domestic and international competitions, since the current world borderless marketing channel has changed. Is more convenient The transport story is down, such as e-commerce, online trading, or trading through the Alibaba website, if we continue to use the original method of selling the goods. These factories will stay harder. Therefore, these technologies are needed to help raise the plant to a more conscious entrepreneur. The industrial scale of the manufacturing of metal stamping machines to increase the efficiency of the production of goods within Thailand. It is important to adhere to the quality of metal stamping machines. The production of the workpiece is fast and affordable. Nowadays, the production of metal stamping is required to bring the computer into the design to make it more precise and accurate. Therefore, those who control production require knowledge of computer programs related to design and analysis. To help reduce the duration of work. The work is more accurate, and it helps to reduce production costs.

**Keywords:** manufacturing, metal stamping machines, local produce.

## INTRODUCTION

Production of metal stamping The forming process is important in the production of metal products. Including industrial assembly of vehicles Electronics Manufacturing And electronics industries, which each manufacturing plant is equipped with features such as process design process. Through the process of adding value to the product, which is material to the plant operation is carried out went well. In order to make it capable of higher production. The technology is capable of processing the physical limitations of the product and production capacity. Or the ability of the manufacturing process, the process of manufacturing parts automotive industry in the mass needed for the manufacturing process with a special tool called a "mold" the process of cutting generally require technical help in the design. reduce both direct and indirect, that might happen. The first since the end of the manufacturing process by reducing the pressure to cut is necessary because it can reduce the pump. Reduce noise pollution caused by the cutting. Reduce the vibration of the pump. Reducing cutting forces cannot simultaneously cut and shaped pieces (Huseyin Selcuk Halkaci, 2014).



FIGURE 1. automotive industry

Currently, the industry is in the manufacture of sheet metal parts such as sheet aluminum is very high. brass sheets Cold rolled steel plate and so on stainless steel sheet and cold rolled sheet steel is a popular material in the production of parts or products. The industrial production of auto parts. Manufacturing household appliances. Or industrial processes forming the other side and cold-rolled steel sheet, there are currently a number of ways, such as stamping. The Forming The Drawing Continuous Processing Still, the stigma and process metal forming industry, has a variety of processes such as Casting (Casting process) process Forging (Forging process) process tuning, Ltd. (Machining process) stamping process. (Stamping / Forming process) process, and many others, but the metal stamping. (Stamping / Forming process) has advantages over other molding process was capable of forming. Specimen complex No need to decorate the pieces after forming. Dimension and strength as well. The high rate of production processes stamping sheet metal. (Stamping / Forming process) is divided into 3 treatment based mainly process machining (Blanking process / Piercing process) process Fold Forming (Bending process) and the Deep Drawing (Deep drawing process) process of stamping. metal sheet Must choose the type pumps (Press machine) to stamping different. Depending on the work required by the pump (Press machine) used in forming the various types. Which pumps each have advantages and disadvantages of different processes and forming different. Pump metal separated by type of delivery mechanism, and are powered machine with 3 pumps and hydraulic c (Hydraulic presses), Pumps, Mechanical (Mechanical press) and air pump servo (Servo presses) (. Gotlih, K., Pahole, I. and Karner, T., 2015).

Among the factors that affect the quality of the piece of sheet metal forming process, there are many factors, such as steel or raw materials. The speed of the forming process Types of pumps (Press machine) The machine that is the source of strength of the molding. Which have the force of torque of the motor pump. And a compression mold For use in sheet metal forming. The mold pressure is required in relation to the force required for the sheet metal forming press mold is critical to the process of forming. Due to the force exerted on the press sheet metal molds to get a job that matches. Need For pumps that can be molded in a variety of sheet metal that. One of the many types of pump parameters can be created to cover all forms of the process of forming sheet metal stamping machines are servo motors. For torque servo motors is critical to the forming process. On the strength of such a pump. To vary the strength of the mold. For Sheet Metal Forming If the mold pressure and torque motors inappropriate. Could result in material damage. Or workpiece quality and does not meet the required theoretical CE, ECRS manufacturing sheet metal stamping process. The main tool is a piece molded from the customer to the factory to the production process. And preparation of the mold, each step of the problem. The production process of many stages. Concurrent Engineering opted Renfrew Center. The working principle Systematically From design production In all considered together (Arrtkr Kengpol, 2553) production costs in various forms from the outcome of a design which will result. In all aspects of the production. Process in Concurrent engineering principles Oren house. From the analysis, design, manufacturing process planning and monitoring errors. Integrating design and manufacturing processes (Integrated Product and Process Design, IPPD) by organizing a team to work together various parties involved raising. Ideas and solutions with the team (Arrtkr Kengpol, 2 5 5 8 ) and techniques ECRS analysis applied to improve process includes the removal (Eliminate, E) is the removal process or procedure that does not need to work. Total (combine, C) is to include some way of working together step process that takes less work. Share Widget Reorder (Rearrange, R) grading work or dividing the switching process optimization. And makes it easier (Simplify, S) to improve the way it works is as easy as using a tool, workpiece states presented various techniques for improving performance, reducing the production process (coinciding lobbied designs. 2557) it is important to reduce the energy used in the production process in each stage to increase energy efficiency in the industrial metal pump efficiency.

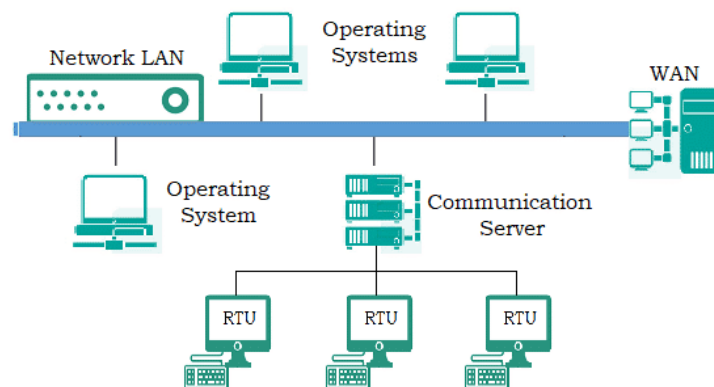


FIGURE 2. SCADA Programming

## Pros Cons manufacturing metal stamping machines

Highlights of industrial manufacturing, metal stamping

1. Thailand is a country with skilled labor compared to other countries and groups of countries with low labor rates. As a result, Thailand's manufacturing sector is the most labor-intensive manufacturing sector.
2. The wages of Thailand have not advanced much. Thailand's manufacturing sector continues to make a competitive labor.
3. Raw agricultural potential. Thailand has the potential agricultural raw materials both in quantity and quality. And agricultural products such as rice, rubber, sugar cane, vegetables and fresh fruit, etc., it is the strength of the agricultural raw materials that can be used to produce these products to create added value. This will lead to an increase in competition with Thailand
4. Have the right in the center region. It is a strategic point (Strategic Location) in the region. Since Thailand is located in the Asian region in Southeast Asia. In an area called "Indochina" for the country, that looks good and beneficial in many ways. In particular, the economic (Economic Location) due to the densely populated region. Is the rich natural resources of various kinds? Agriculture is a source of great world. Therefore, it is possible that this region is an important market, and the market is also an important raw material in the production of the world. The country is located in the center of the region is advantageous both in terms of products and raw materials. In addition, the topography of such also results in ease of contact with the outside world, transportation, trade with foreign countries by land, sea and air.
5. transportation by land and air cover. the support effectively A survey conducted to compare the performance of competing countries and the International Institute of Management (Institute of Management and Development: IMD) and credit ratings in the competitive economic and business (World Economic Forum: WEF) found. that Thailand still has strengths in the field of transportation by land and air. Due to recent government gives priority to the development of the transportation is enormous. Whether the development of land transport links to get around the country. But also developing other routes to be linked to neighboring countries and neighboring countries in the region. This is Laos, which can be connected to Vietnam, China, Myanmar and Malaysia, and also for air transport in the opening of the Suvarnabhumi Airport, which is the airport, modern and efficient, one of the factors of these. these are all beneficial to the shipping industry and services. To support comprehensive and effective internal and external.
6. Thailand's improving business, trade and industry, compared with many countries in the region. Especially when compared to neighboring countries such as Myanmar, Thailand, Laos and Cambodia, etc. Thus, it should accelerate the improvement of SMEs competitiveness. By reducing the cost of logistics to improve the investment climate to attract foreign direct investment (Foreign Direct Investment: FDI) in ASEAN and outside ASEAN. Preparation for the liberalization of services and investments fully in 2558, with the agreement of ASEAN as well as the promotion of R & D (Research and Development: R & D), which enhances production efficiency in the industrial and service sectors. And capacity building of Thailand's competitiveness in the global arena.

## The weakness of industrial production, metal stamping machines.

Thailand is still weak in many aspects of the urgency to improve economic development and industrialization of the country to increase its exports to various countries around the world as follows: (a wise believe Boonyaudomsart Sophon, 2558)

1. Lack of connection. link between the organization responsible for the state. Must rush to reform the system so that individual organizations are doing their own thinking. State policy requires the integration of all state organizations coordinate and collaborate in the workplace. The weakest link in the economic development of the country in collaboration with the private sector, a strong and sincere.
2. Lack of availability of human resources in science and technology. To support the rapidly changing technology of the future. To competition with countries in the global trade arena. Which in the future may be a global standard format for producing.
3. Capabilities of the United States in research and development tools. Machinery and equipment manufacturing, high-technology and high value-added products. Remained behind the industrialized countries currently underway. The need to purchase and import technologies from abroad. The country's trade deficit significantly. Which affects the strength of the economic rights. We need to export more goods to Thailand, which is a very difficult proposition for all age.
4. government monopoly business groups, business groups Thailand. It is not going to compete on price and quality of goods, free and fair to the consumer public. As a group, these businesses are pricing the

consumer himself. Which affect the quality of life of people whose income is less so. It is the duty of the government to hastily resolve the problem.

5. There are also weaknesses in international trade. And unfavorable trade balance with its many partners in international relations. The culture bring politics to help strengthen trade cooperation between countries and between groups of countries which will benefit the export of goods increased, the people of Thailand have a job and have a better life. and the impact on the stability of the country's economy.
6. Thailand has to depend on the country's leading industrial powers progress and the defendant. The economy such as interest on the loan. To developing countries Surge of the baht tied to economic superpowers. Agricultural price support policies of the major powers. Trade barriers, etc. Thus, the fiscal policy of the country. It must be stable and have the discipline to use money wisely.

### **Manufacturing metal stamping machines to increase efficiency in the production of goods within the country.**

In the case of Thailand Industrial Dr. Somsak merit points Bart (2558) study on the future of Thailand. Thailand to study the dynamics of the industry from the past to the present. According to studies, it has been found that Thailand's industrial transformation from past to present. Can be divided into before and after Tom Yum Kung crisis in 2540 before the economic crisis, Thailand's economic growth at a high level. Due to changing economic structure from agriculture to industry from import substitution industries. Then develop a manufacturing sector for export abroad. During the economic crisis The industry is shrinking, but is recovering in later years. However, the economy did not grow as high as before Thailand. A contributing factor to the development of the industry, there are many such. Natural resources, location, experience of entrepreneurs, skilled workers, craftsmen, etc. It also has a relatively liberal trade and investment policies. The prospect of a change of world geography. But there are still factors that are barriers to economic growth, such as the industrial sector is still underperforming and high dependence on imports. Logistics costs high. The concentration of industrial space Infrastructure limitations Lack of clarity on industrial policy Competition between countries intensified. Rule trade and investment. The economic integration economic crisis.

Thailand's economy is mainly driven by the industrial sector. However, according to the proportion of industrial output value of gross domestic (GDP) in the industrial sector with a percentage of 32.55 in 2557, which totaled 3.95 trillion baht, while the agricultural sector is valued at 1.41 trillion baht, the production value. industry to GDP, mainly from the manufacturing industry for export. This is an industry that requires medium to high technology. The dependence on imported parts and technology from abroad. The products are exported, including the 10 largest automotive parts and accessories, computers and components. Jewelry petroleum resin circuit boards and components, chemicals and rubber products, machinery, steel products, and dare I Lok respectively (Ministry of Commerce, 2015) for the development of the industry in the future. The Ministry of Industry has prepared a master plan to develop the industry of Thailand, BE 2555 -2574 (National Industrial Development Master Plan), which maps to target and guide the development of industry in Thailand. In the plan, the pilot has set the industry. The industry is an important economic driver in all eight industries include food and beverage. Textile and Apparel rubber industry Automotive and Parts Jewelry industry Industrial Automation and Electronics Industrial machinery and equipment (mold) industry, renewable energy / renewable. However, agriculture and biotechnology. (Agricultural and Biotechnology Industry) and industrial chemicals, fuels and biofuels (Biofuels and Bio-Chemical Industry).

### **CONCLUDE**

Manufacturing of metal stamping machines Thailand relies on the cooperation of the private and public sectors. Standardization of plant to make way for development was evident. And plant operators to try to raise production. Leverage the knowledge available within the organization to greater heights. The development of automation systems, industrial or 4.0 entrepreneurs should consider the needs and interests of investors. In order to adapt to keep pace with the competition both at home and abroad. As the borderless world market niche to trade. Are more easily Transport matters the trip was like the E-Commerce trading through online trading through website Alibaba if we still use the old method of selling products. These factories are more difficult. We need to bring these technologies to enrich the plant operators to greater awareness. Elevated manufacturing metal stamping machines to increase efficiency in the production of goods within the country. It must seize the main principles Is the quality of metal stamping machines Forming production coming out soon. And Value The current production of metal stamping machines require the computer to help in the design. The precision and accuracy even more. So those who control it is essential to have knowledge of computer programs related to the

design and analysis accuracy. To help reduce the duration of the work. The task is even more accurate. To help reduce the cost of production.

## **FUTURE RESEARCH**

To substantiate the successes of the applied framework, additional case studies in different industries are required to determine the influences of industry-specific context and the role of value chain collaboration of the implementation of circular principles. Furthermore, it could be interesting to use serious games as an instrument to research the role of strategy, tactics and incentives of individual stakeholders in a circular value chain as well as the emergent properties of such a closed loop system.

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