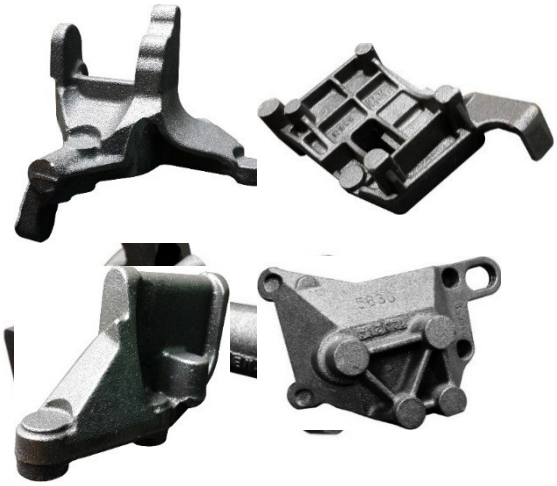
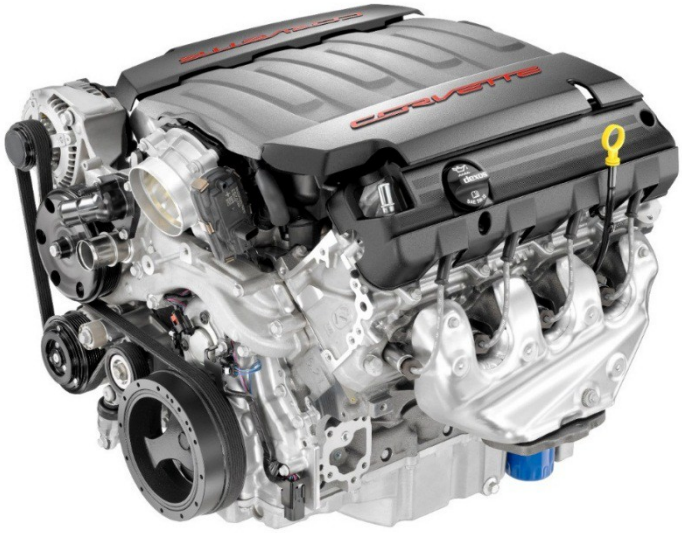

wantana™
metal works

PRODUCT REFERENCES





1. Introduction

WANTANA METAL WORKS is a manufacturer of grey and ductile cast iron. Our products are mostly provided to automotive industry – *Bracket compressor, Bracket generator, Pulley idle, Pipe EGR Cooler, Drum Gear, etc.*

The company is affiliated with WATANA GROUP, which has been in foundry business for over 40 years. WANTANA GROUP comprises of 4 companies, *Wantana Machtech, Siam Castech, Wantana Foundry and Wanata Metal Works*, providing various type of casting ranging from cast steel, stainless steel, and grey and ductile cast iron.

Trust through experience, we determined to create the best value through customers in various types of industry ranging from general casting - *agricultural machinery, construction parts,* to high quality products - *automotive parts*.

wtn wantana group™

	Founded	Type of process	Material	Products
WANTANA METAL WORKS	2009	DISAMATIC LINE	FC/FCD	Automotive part - Bracket, Pipe EGR, Pulley Idle
WANTANA FOUNDRY	2002	TOKYU LINE	FC/FCD	Butterfly valve, Elevator, Agricultural machinery.
SIAM CASTTECH	1994	CO2	Cast steel	Agricultural machinery
WANTANA MACHTECH	1973	Machining	-	Agricultural machinery

"Trust is a key to sustain our business for over 40 years, it is necessary to make not only our customers but also our suppliers being confident in doing business with us "
Khit Ngaobenjakul, President of WANTANA GROUP.

WANTANA METAL WORKS was established in 2009 based on strong confidence through decades of experience. Our mission is simple and clear, ***to create superior value to customers.*** We just need to provide better quality, more competitive price and be more on time delivery than any others. Consequently, it is necessary to bring high efficiency machines and equipment into production process. For instance, in 2010 – 1st production line, high end molding line as DISAMATIC system was approached to ensure that mold making process is more reliable – ***producing numbers of green sand molds with high quality at high speed.*** As a result, 80% of its capacity has been being served to automotive market for the last 2 years.

The demand in automotive parts has continuously increased since the 1st line has run. WANTANA METAL WORKS took this opportunity to expand the business by installing the second production line, which has 3 times capacity of the first one. Certainly, DISAMATIC molding system was selected.

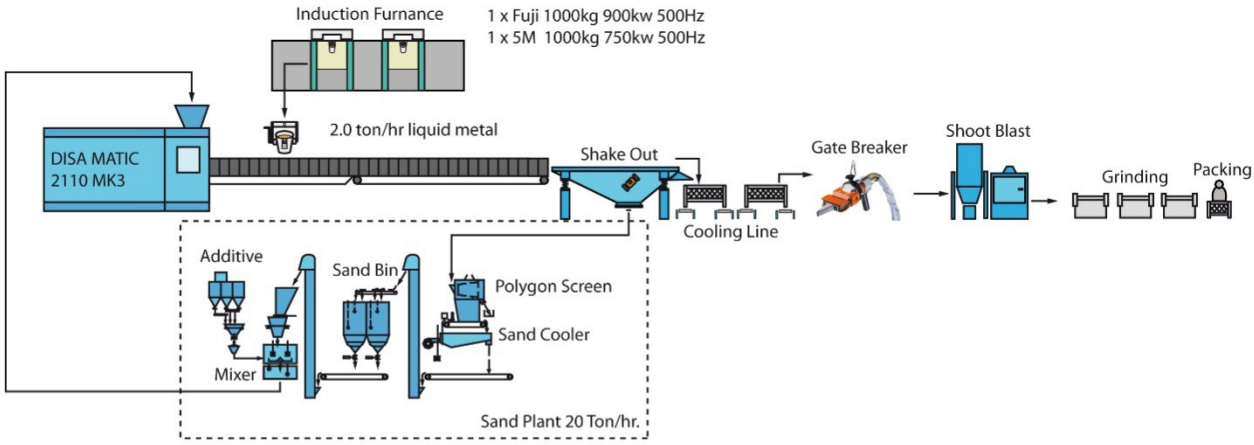
Established	2009	
Registered capital	1,000,000 US	
Location	111 Moo 11 T. Phohak A. Bangphae Ratchaburi, Thailand 70160	
Building factory area	2 x 2,700 m^2	
Employees	80 – 100	
Production process	Line 1: DISAMATIC 2110 MK3	600 tons/month
	Line 2: DISAMATIC 2013 MK4 PLC UPGRADED	1500 tons/month

2. PRODUCTION process

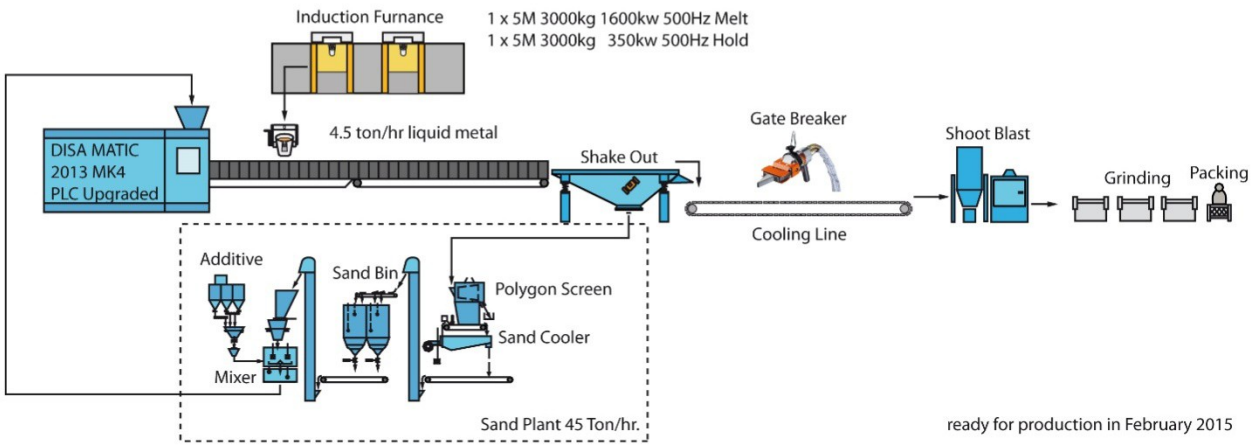
Two production lines are the key process to drive the company. Generally, casting process consists of 3 main processes, which are melting & pouring, molding& core, and finishing process, - *including de-gating, shot blasting, grinding and packing process*.

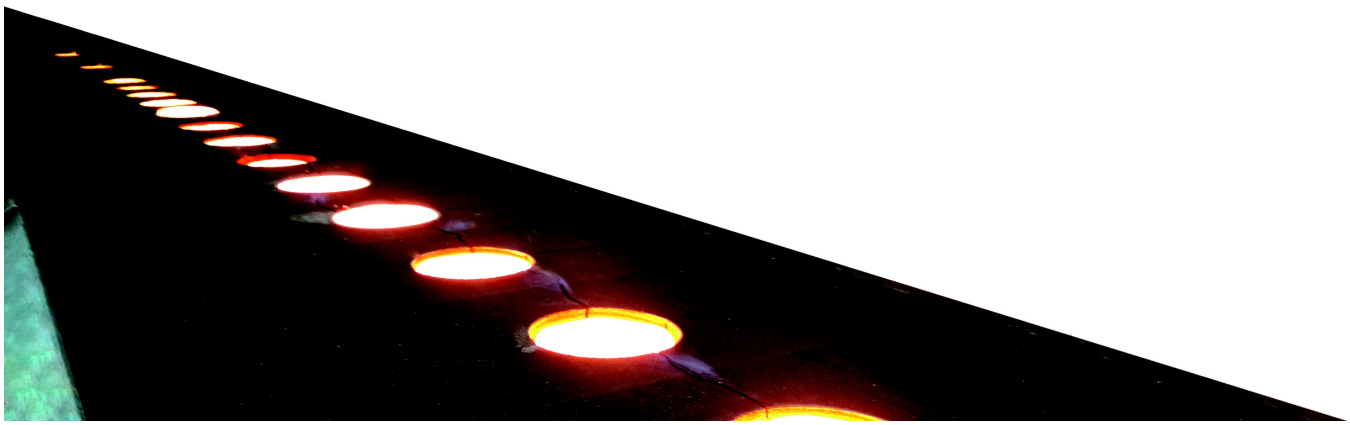
Similar to our production line, as per below figure, the first line is equipped with 1 Ton x 2 induction furnaces and DISAMATIC 2110 MK3 including sand plant. Two tons/hr. liquid metal can be produced from this line. The second production line, 3 times capacity compared to the first one, is equipped with 3 Ton x 2 induction furnaces (melt & hold system) and DISAMATIC 2013 MK4 PLC UPGRADED including sand plant. 4.5 ton/hr. liquid metal can be produced by this line. The details and capacity of each process are shown in table 1.1.

LINE 1:



LINE 2:



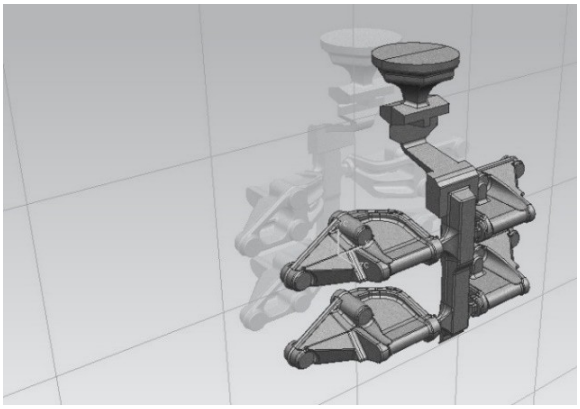


	LINE 1:		LINE2:
Melting	1 x Fuji 1,000 kg 900 kw 500 Hz 1 x 5M 1,000 kg 900 kw 500 Hz		1 x 5M 3,000 kg 1600 kw 500 Hz - MELT 1 x 5M 3,000 kg 350 kw 500 Hz - HOLD
Molding	DISAMATIC 2110 MK3		DISAMATIC 2013 MK4 PLC UPGRADED
	Mold size	400 x 500 mm.	480 x 600 mm.
	Speed	300 mold/hr.	320 mold/hr.

		Automatic Core Setting (CSE)	Automatic Core Setting (CSE)
Core	2 x Automatic core shooting machine		1 x Automatic core shooting machine
	Model	ECO VR-400	ECO VR-400
	Mold size	400 x 600 mm.	400 x 600 mm.
SAND PLANT	Capacity	20 ton/hr.	45 ton/hr.
	Mixer	HIDEA 160-45 500kg	HIDEA 190-75 1,000kg
	Sand controller	-	SM
	Sand bin	2 x 20 ton	2 x 45 ton
	Sand cooler	HIDEA SFC1350-4000	HIDEA SFC1350 - 4000
	Polygon screen	Mesh 6 x 20 mm, 4 kw, 30 T/H	Mesh 6 x 20 mm, 5.5 kw, 45 T/H
	Shake out	1000 x 4000 mm, 2 x 4.0 kw	1000 x 4000 mm, 2 x 4.0 kw
	Dust collector	reversed air 30,000 m^3/hr.	reversed air 45,000 m^3/hr.
Finishing	Degatting	2 x Holmatro 9 ton	2 x Holmatro 9 ton
	Shotblasting	1 x Apron type 250 kg. 1 x Apron type 350 kg.	2 x Growell Apron type 1,000 kg.
	Grinding	4 x 3.75 kw grinding M/C	4 x 3.75 kw grinding M/C

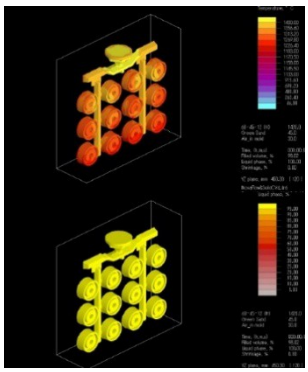
Table 1.1

3. DESIGN process



Time to the market has become crucial in today business. We put effort at the very beginning of product life cycle. Pattern, Die and gating system are designed in 3D model (CAD) by advanced tool as NX9.0. In addition, casting simulation is approached to help us to understand liquid metal behavior from flowing into the mold until transforming to be solid.

These powerful tools enhance opportunities to improve casting yield and predict defects such as pinhole, shrinkage, etc. Quality and productivity issues can be solved in less time and with lower costs by evaluating alternative concepts with simulation before pattern or die are released to production. This results to dramatically reduce the numbers of trial and error. Product can be launched in mass production faster.



In addition, these advanced tools enhance simultaneously working among customers, the company and also patternmaker at the beginning of the design process. For instance, as soon as 3D model are created, customers can use this model to design jig and figure. At the same time, pattern maker use it to make pattern.

Rapid prototype technology is also approached in our design process. Sometimes, customers want prototypes, 2 to 10 pieces, to assemble and test with their system. However, producing less number of casting can make a problem with foundries.

By 3D sand printing technology, the problem of producing less number of casting and the need for pattern making can be eliminated. The prototype can be made in less number, shorter time and lower cost without pattern required.

4. LABORATARY

The consistency of product quality is crucial for automotive industry. Our laboratory is well equipped with tools and equipment that are required for automotive inspection standard requirement. - *Spectrometer, CE Meter, microscope, thermometer, universal tensile testing machine, Brinell hardness tester and echo meter (to classify casting between FC and FCD by sound echo technology).*

Besides those basic equipment, in 2013, we approached new advanced tool, microstructure analysis software. Microstructure analysis, *-type of graphite, percentage of ferrite and perlite, nodularity, nodule count, etc.*, becomes easier, faster and more accurate.

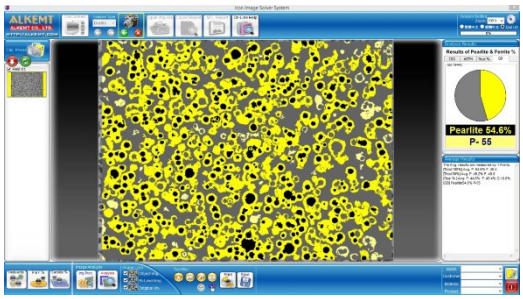
Spectrometer

Brinell Hardness tester

Microscope

Universal Tensile testing machine

Echo meter



Microstructure analysis software

5. MANAGEMENT SYSTEM

WANTANA METAL WORKS has been promoted by BOI (Board of Investment) in 2011 and 2014. The company is granted several benefits under BOI privilege, for instance, income cooperate tax exemption for maximum period of 8 years.

In 2013, our quality management system (QMS), ISO9001:2008, is certified by SGS.

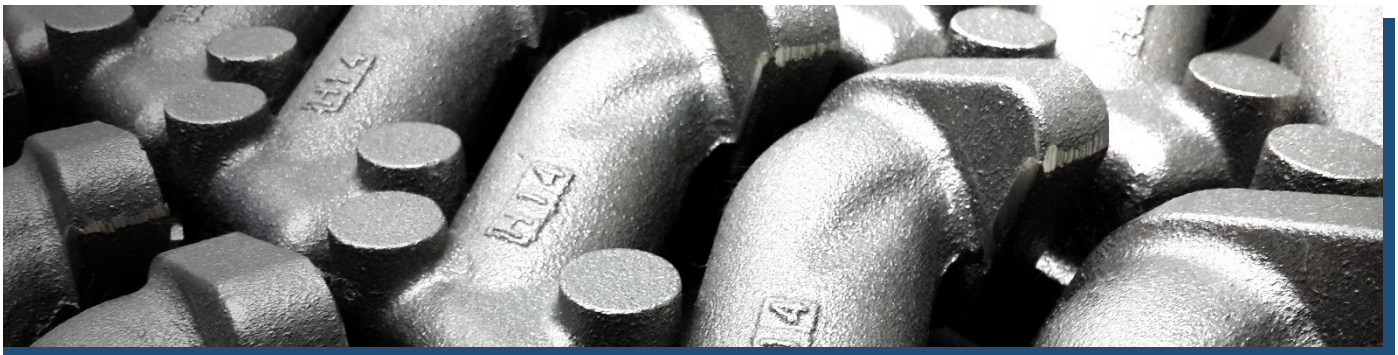
In addition, in 2014, we continue to improve our process by implementing TPS (Toyota Production System) supported by Automotive Institute (Thailand). Four major steps, *worksite control, continuous flow, standardization and kanban*, are utilized entire organization. After 8 months running TPS, the company performance, consequently, has been improved dramatically. – *reducing in WIP and lead time, and increasing in sales and profit.*

TPS, TOYOTA PRODUCTION SYSTEM

"After running TPS for 8 months, it could be said that TPS is a key for archiving and sustaining growth of the company."

Korakij Ngaobenjakul, Managing director

Wantana Metal Works



6. Contact

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