

PLEASURE TO CUSTOMERS BLISS TO EMPLOYEES

AGRICULTURAL MACHINERY

ATTACHMENT

LEVER

FOLKLIFT LEVER

PEDAL

ALL KINDS OF BRACKETS

EXCAVATOR

LEVER

PEDAL

MIRROR STAY

ALL KINDS OF BRACKETS

FACILITY

CNC GAS CUTTING

BENDER

CUTTING MACHINE

SHORTER

MILLING

LATHE

RADIAL

BAND/SAW

CO2 WELDER

PAINT LINE (PAINT, DRIER)



CHEONG-SA PRECISION CO.,LTD

ABOUT US

CEO GREETING



Pleasure to customers Bliss to employees

Cheongs Precision Co., Ltd. has been a wellington and global company for excavator forklifts for 30 years.

Also, we are working hard to develop technology for Thanksgiving in the global market.

We are not preparing for the future now, we have planned for the future of our customers for 30 years for the future and for the future.

We live up to the expectations of our customers by catering to the needs of all our audiences.

CEO Woo Tae-kwang

ABOUT US

OVERVIEW



Founded
June 1, 1987



Land
5,004m²
(1,514 pyeong)



Floor space
2,717m²
(822 pyeong)



Employees
35 people

ABOUT US HISTORY



- 1987. 06** Cheongsa Precision Co. (Sanho-dong Masan-si)
- 1990. 05** Domestic Production of Hose Reel Ass'y for Samsung Heavy Manufacturing's Hydraulic Crane (25T, 50T)
- 1998. 06** Vendor Company to Volvo Machine Korea
- 1998. 08** Vendor Company to Clark Material Handling Asia
- 1998. 11** Move Factory (249 Gasul-li Daesan-myun Changwon-si)



- 2000. 01** Change Name to Cheongsa Precision Co, Ltd.
- 2000. 12** ISO9001 (Quality Management System)
- 2002. 10** ISO14001 (Environmental System)
- 2002. 11** Clean Business Certification (Ministry of Labor)

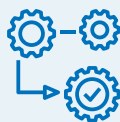


- 2010. 06** Venture Company License
- 2010. 10** Woo Tae-Kwang Appointed as CEO
- 2013. 07** Venture Company License
- 2018. 10** R&D Center Founded
- 2021. 01** VIETNAM MTA HANOI Exhibition

ABOUT US VISION



Design
Capability



Advanced
Operating
System



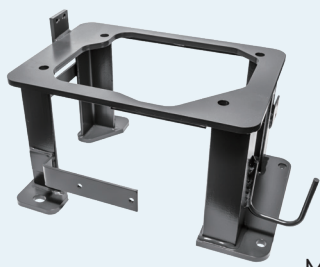
Production
Technology
Innovation



Globalization

MAIN PRODUCTS
EXCAVATOR





MCV Bracket



Muffler Bracket



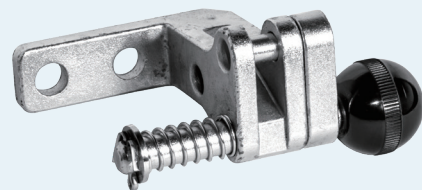
Mirror Bracket



Camera Bracket



Pedals



Stopper



Mirror Bracket



XI-Pedal



Level

MAIN PRODUCTS
FORKLIFT





Hose Sheave



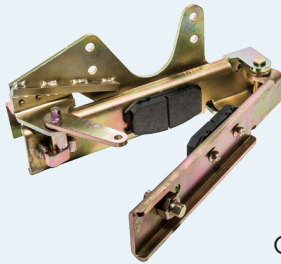
Head Bracket



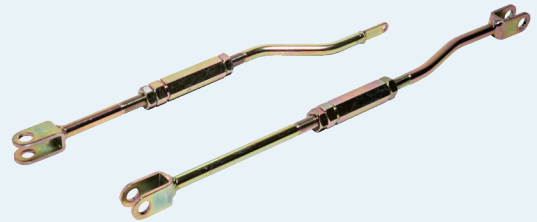
Guide Roller



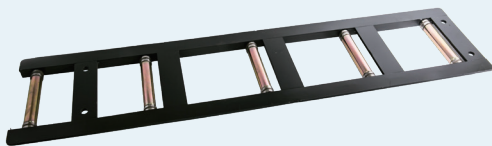
Guide Roller



Caliper Brake
Assembly



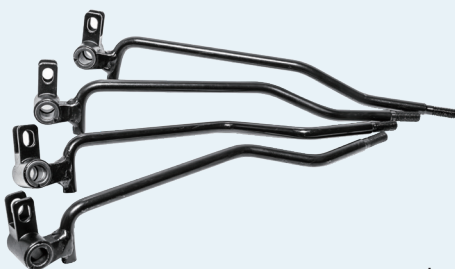
Pin Rod



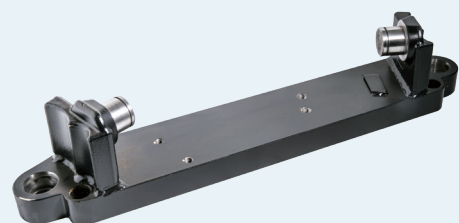
Battery Roller



Spacer



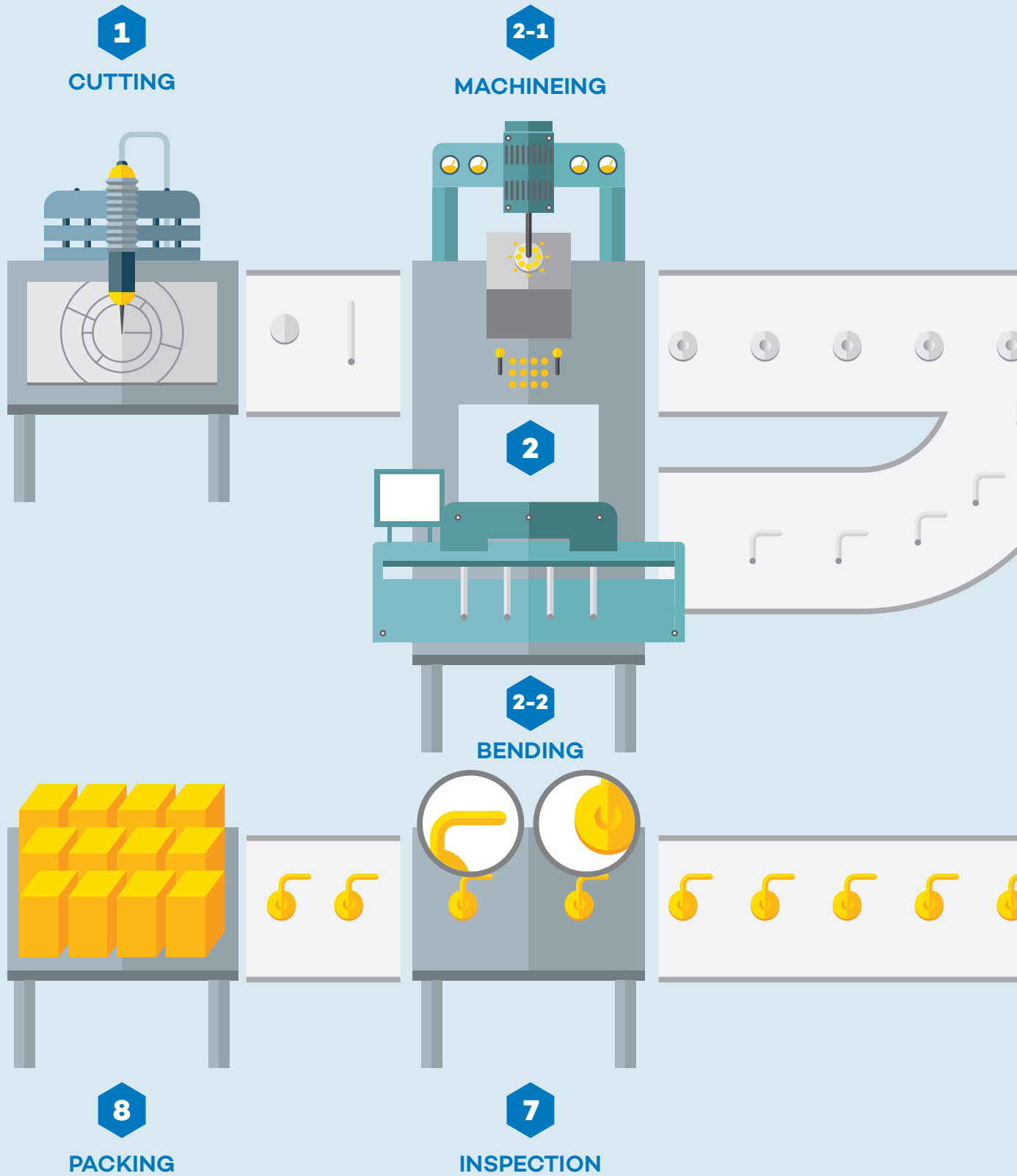
Levers



Free Bar

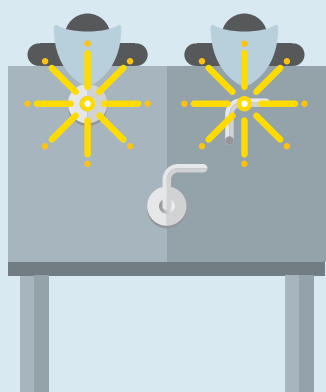
PRODUCTION LINE

ONE-STOP PROCESS



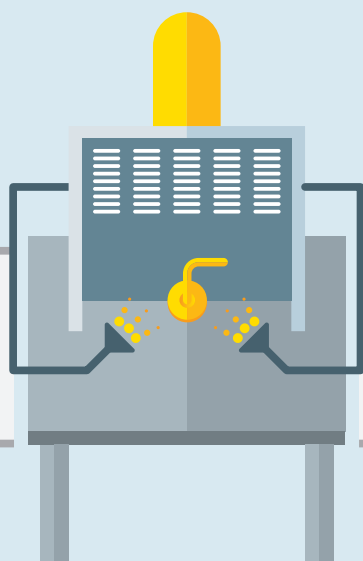
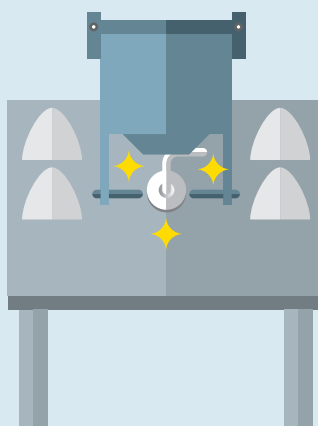
3

WELDING



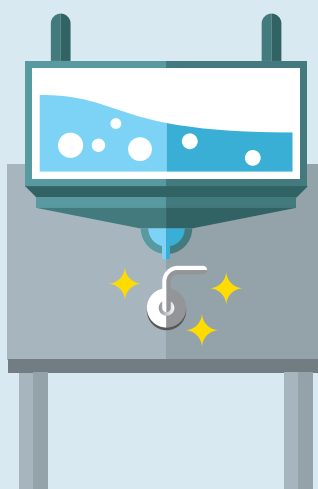
4

SHOT BLAST



6

PAINTING



5

FINISHING

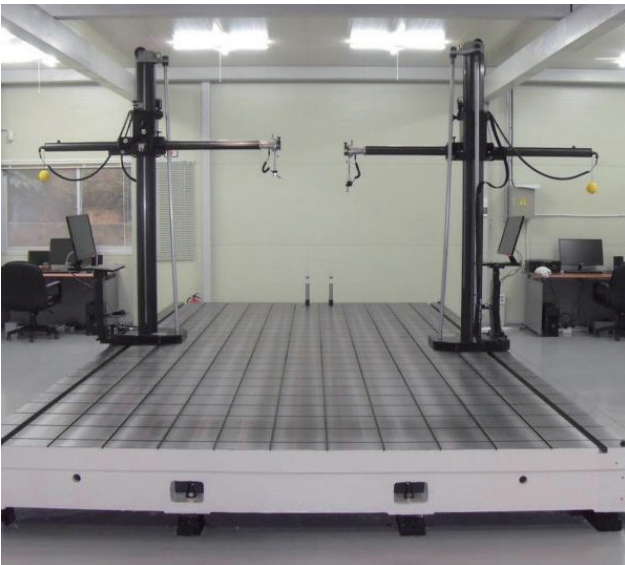
PRODUCTION LINE

EQUIPMENT STATUS

FACILITY	MAKER	QTY
CNC GAS CUTTING	KOENTECH	2
BENDER	DONGJIN & OTHERS	2
CUTTING MACHINE	DONGJIN	1
SHORTER	—	3
MILLING	DOOSAN & OTHERS	4
LATHE	HWACHEON & OTHERS	3
RADIAL	DOOSAN & OTHERS	3
BAND/SAW	GYEONGDONG & OTHERS	1
CO2 WELDER	Panasonic & OTHERS	20
PAINT LINE (PAINT, DRIER)	Panasonic & OTHERS	2 line



FACILITY	MAKER	QTY
LAYOUT MACHINE	MITUTOYO	1
ROCKWELL HARDNESS	DAEKYEONG TECH	1
HEIGHT GAUGE	MITUTOYO	3
CYLINDER GAUGE	MITUTOYO	6
STONE RACK	KUMKANG PRECISION	1
MICROMETER	MITUTOYO	14
VERNIER CALPER	MITUTOYO	20
COATING THICKNESS GAUGE	HANDO	1
DIAL GAUGE	MITUTOYO	5



R&D
SIMULATION SOLUTION

Material properties

Materials	Young's modulus [GPa]	Poisson's ratio	Yield Strength [MPa]
SS400 (SS275)	205	0.3	275
Al 4032	78.9	0.33	210
Polyketone (M630A)	1.25	0.4	58

원소명		Cu	Si	Mg	Zn	Fe	Mn	Ni	Ti	Pb	Sn	Cr	Ca		
SPEC		1.5~3.5	9.6~12.0	0.3이하	1.0이하	0.6~1.0	0.5이하	0.5이하	0.3이하	0.1이하	0.2이하				
분	X1	** CONT **										AN = 0690 TN = 0690 08-05-21 16:10			
		AG -No : AL		ST-No. :		[ADC12] [21-08-05-A]									
석	X2		Al	Cu1	Si1	Mg2	Zn1	Fe1	Mn	Ni					
		N= 1	85.275	1.7735	10.537	.21606	.96480	.78571	.21053	.07005					
		N= 2	85.273	1.7804	10.518	.21983	.97547	.78455	.20901	.07182					
치	X3	AVE	85.274	1.7770	10.528	.21795	.97014	.78563	.20982	.07094					
			Ti	Pb	Sn	Cr	Ca	Co	Sr	INT					
		N= 1	.04045	.06854	.01593	.03986	.00156	.00000	.00000	6.1580					
특이사항	X3	N= 2	.04042	.06948	.01664	.03951	.00159	.00000	.00000	6.1308					
		AVE	.04044	.06901	.01629	.03969	.00158	.00000	.00000	6.1444					
DANGER		<사용시 주의사항> 충격에 주의시, 수분 및 습기가 있으면 폭발하여 사망 또는 화상을 입는다. 위 경우엔 반드시 예열 후 전로된 상태에서 투입하라.													
HKI-B301-1		주식회사 HKM													
제정 1999. 2. 6. Rev 0		A4(210x297)mm													

Kinds	Si	Fe	Cu	Mg	Cr	Zn	Ni	Al
4032	11.0 - 13.5	1.0	0.5 - 1.3	0.8 - 1.3	0.10	0.25	0.5 - 1.3	Remainder
BA4343	6.8 - 8.2	-	-	-	-	-	-	-
BA4045	9.0 - 11.0	-	-	-	-	-	-	-
BA4004	9.0 - 10.5	-	-	1.0 - 2	-	-	-	Remainder

Hyosung Polyketone Representative Grade :

Test Items	Test Methods	Unit	M230A	M330A	M630A
Physical					
Density	ASTM D792	g/cm ³	1.24	1.24	1.24
Water Content (23°C, 60% RH, Eq.)	ASTM D570	%	0.45	0.5	0.5
Thermal					
Melting Temperature	STM D1525	°C	200	220	220
Melt Flow Rate (240°C, 2.16kg)	ASTM D1238	g/10min	150	60	6
Deflection Temperature : HDT 0.45MPa (4.6kg/cm ²)	ASTM D648	°C	205	210	210
Mechanical					
Tensile Strength	ASTM D638	Kg/cm ²	500	600	620
Nominal Strain at Break	ASTM D638	%	>25	>250	>300
Flexural Strength	ASTM D790	Kg/cm ²	500	600	620
Flexural Modulus	ASTM D790	Kg/cm ²	13,000	18,000	18,000
Charpy Notched Impact Strength	ASTM D256	Kg · cm/cm	5	12	18
Electrical					
Volume Resistivity	ASTM D257	Ω · cm	1015	1015	1015
Dielectric Strength	ASTM D149	kV/mm	20	17	17

R&D

FINITE ELEMENT MODEL

Pedaling load x 3 – body

Location	SS400 (Yield : 275 MPa)			SS400 (Yield : 275 MPa)			Al 4032 (Yield : 210 MPa)		
	Von [MPa]	Von / Yield	Safety factor	Von [MPa]	Von / Yield	Safety factor	Von [MPa]	Von / Yield	Safety factor
Body	7.36	2.7%	37.4	7.37	3.5%	28.5	7.11	12.3%	8.2

Pedaling load x 3 – body : Pin joint

Location	SS400 (Yield : 275 MPa)			SS400 (Yield : 275 MPa)			Al 4032 (Yield : 210 MPa)		
	Von [MPa]	Von / Yield	Safety factor	Von [MPa]	Von / Yield	Safety factor	Von [MPa]	Von / Yield	Safety factor
Body	15.0	5.5%	18.3	10.4	5.0%	20.2	10.7	18.4%	5.4
Pin joint	15.0	5.5%	18.3	9.6	4.6%	21.9	8.7	15.0%	6.7
Fix joint	10.2	3.7%	27.0	10.4	5.0%	20.2	10.7	18.4%	5.4
Pin	5.5	2.0%	50.0	3.5	1.7%	60.0	1.4	2.4%	41.4

Pedaling load x 3 – body : Pin joint

Location	SS400 (Yield : 275 MPa)			SS400 (Yield : 275 MPa)			Al 4032 (Yield : 210 MPa)		
	Von [MPa]	Von / Yield	Safety factor	Von [MPa]	Von / Yield	Safety factor	Von [MPa]	Von / Yield	Safety factor
Body	47.4	17.2%	5.8	68.0	32.4%	3.1	32.0	55.2%	1.8
Pin joint	47.4	17.2%	5.8	68.0	32.4%	3.1	17.1	29.5%	3.4
Fix joint	31.0	11.3%	8.9	31.4	15.0%	6.7	32.0	55.2%	1.8
Pin	10.0	3.6%	27.5	27.5	5.1%	19.4	3.8	6.6%	15.3



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