HD HYUNDAI XITESOLUTION

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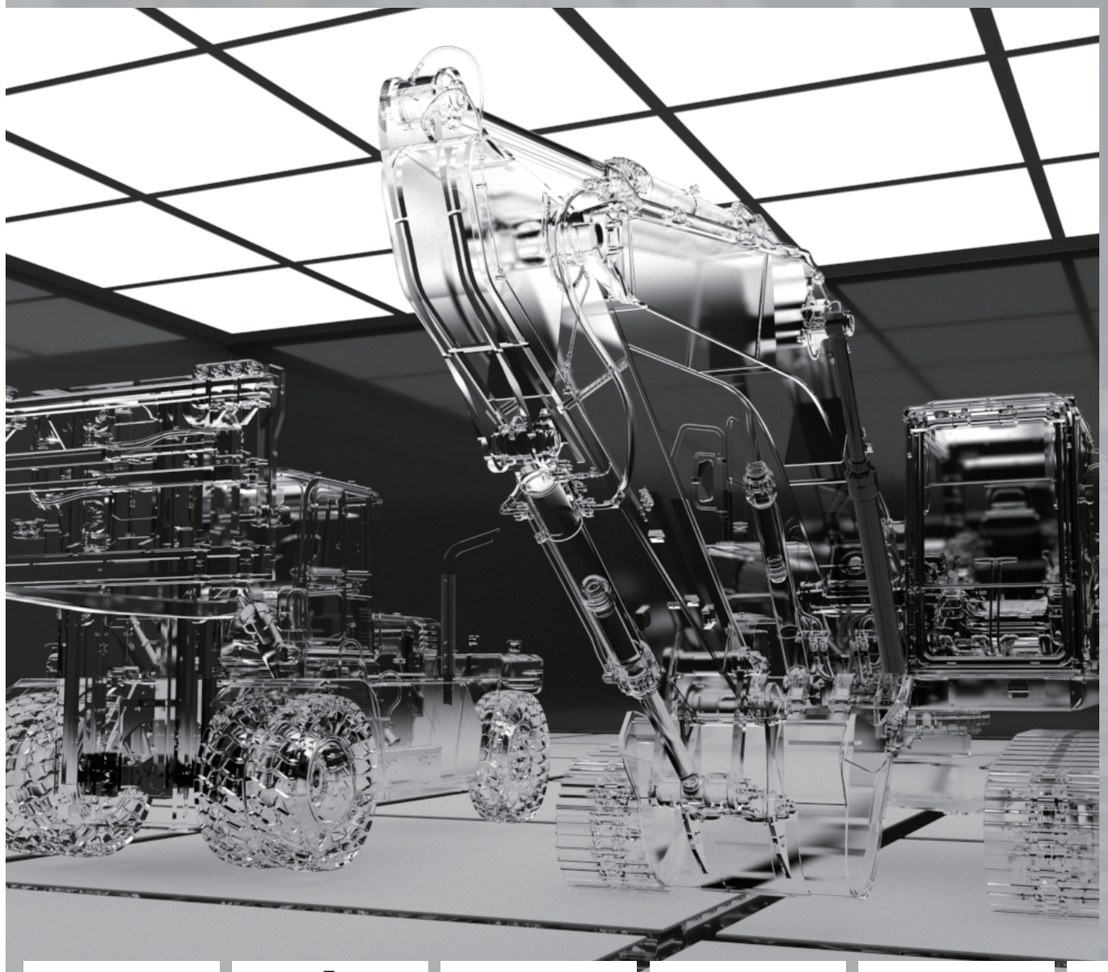
http://www.hd-xitesolution.com

HD HYUNDAI XITESOLUTION

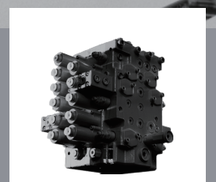
PRODUCT CATALOGUE



HD HYUNDAI XITESOLUTION Co., Ltd. product description and detailed spec-catalog produced in 2023

Travel Motor

Swing Motor



MCV

Transmission

Drive Axle

Cylinder

COMPANY OVERVIEW

HD HYUNDAI XITESOLUTION is HD Hyundai Group's intermediate holding company in the construction machinery sector, with HD Hyundai Construction Equipment and HD Hyundai Infracore as subsidiaries. At HD HYUNDAI XITESOLUTION, we are building our own business area by selling Travel Motor, Swing Motor, MCV, Cylinder, other hydraulic parts and Powertrain parts like as Transmission, Drive Axle.

At HD HYUNDAI XITESOLUTION, we will continue to provide optimized solutions so that HD Hyundai Construction Equipment and HD Hyundai Infracore can create synergy in development, sales, purchasing, and international business.
And by growing together with our partners and stakeholders, we will create a blueprint for the future of the construction machinery industry in Korea.

COMPANY HISTORY

1985
Launched as the After-Sales Service Part Division for construction machinery under Hyundai Heavy Industries

1987
Separated into the construction equipment business division and completed the first phase construction of the plant.

2007
Established hydraulic MCV plant (Ulsan, Korea)
Constructed a production plant for hydraulic cylinders for excavators (Changzhou, China)

2010
Started the production of hydraulic motors developed with own technology

2012
Constructed a production plant for hydraulic motors (Gyeongju, Korea)
Started the production of transmission and drive axles for industrial vehicles

2018
Integrated the After-Sales Service Part Division and the Core Functional Part Division

2019.04.01
Founded Hyundai Core Motion

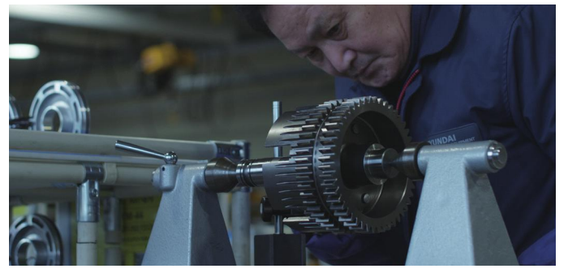
2020
Hyundai Genuine selected as preferred bidder for Doosan Infracore

2021.08
Hyundai Heavy Industries Group establishes Hyundai Genuine, a special purpose company (SPC)
Hyundai Genuine signs a sales transfer agreement for mass production parts with Hyundai Core Motion
Hyundai Genuine completes acquisition of Doosan Infracore, Hyundai Genuine officially established as intermediate holding company for the construction equipment sector

2023.04
Change company name to HD HYUNDAI XITESOLUTION

CORPORATE PHILOSOPHY

We will create new value with the "Hyundai spirit". Hyundai founder Chung Ju-yung's philosophy that even the most seemingly impossible tasks can be achieved if one takes on the challenges with an indomitable fighting spirit is the foundation of HD HYUNDAI XITESOLUTION.



COMPANY VISION

HD HYUNDAI XITESOLUTION will grow into a global Top Tier company that represents Korea's construction machinery industry.

CORE VALUES

01 | Innovation to lead
Transform the way we work with creative mindset
Shape the future of our industry through innovative and disruptive technology

02 | Challenge without fear
Challenge ourselves relentlessly to create new values
Foster a culture of challenging without fear by embracing failure

03 | Care with respect
Respect diversity and encourage open communication
Care for our people's personal and professional growth
Make a better world by upholding social responsibility

04 | Safety for us and for all
Pursue the highest safety standards for our people and workplace
Contribute to the safety of customers, society and humanity with our products and services

R&D

HD HYUNDAI XITESOLUTION strives to secure the product competitiveness of hydraulic, power transmission, and electric functional parts based on the design ability of top-level researchers as well as the integrated R&D center with expertise in developing core functional parts.

Based on this effort, we will supply more core functional parts to domestic and overseas heavy equipment manufacturers and establish a strong foothold in global markets.

We keep customers satisfied with high-quality and reliable products by applying our abundant experience, knowledge of using them in different environments and the requirements of construction equipment and industrial vehicles during the entire product development process.

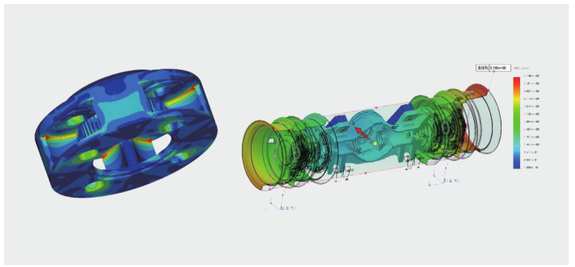
In addition, we actively respond to customer requirements by verifying products in the design stage with CAE technology advancements such as structural analysis, hydraulic system analysis, and system analysis for component parts.

Development Verification System

HD HYUNDAI XITESOLUTION thoroughly tests the performance and durability of its core parts for heavy equipment before supplying them to customers. As a subsidiary of a major heavy equipment company, we conduct real-vehicle verification during the development process and have abundant production records by supplying stabilized parts for a long time.

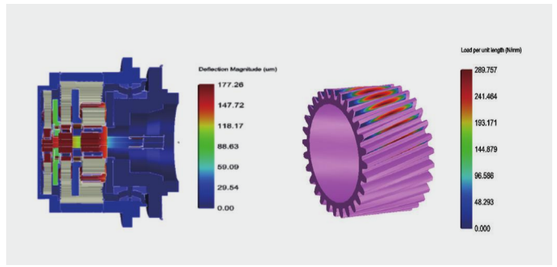
Application Support

Application engineers, who have design capability and can perform tests and evaluations, can recommend products most suitable for customer requirements by discussing with customers, provide effective solutions against diverse problems that may occur during a real-vehicle development process, and support customers to meet their development schedule.



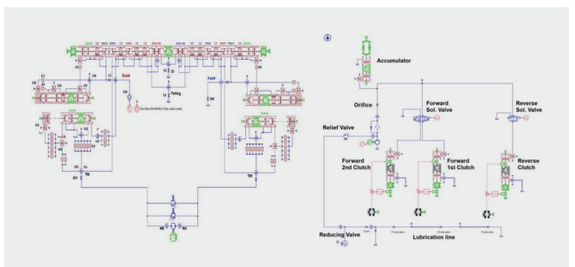
Structural Analysis

Optimize the shape by evaluating the major strength of complex-shaped structures



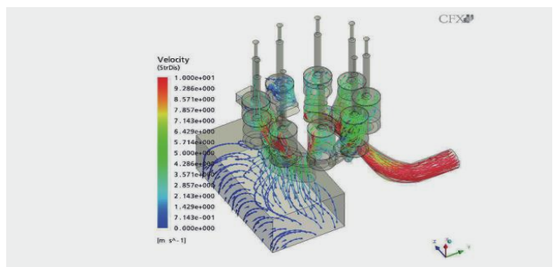
Gearbox System Analysis

Evaluate the strength of gearboxes and draw optimized designs



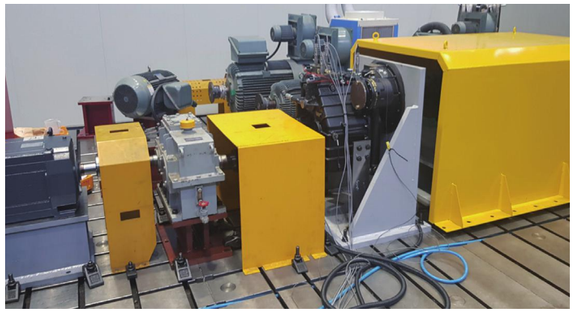
Hydraulic System Analysis

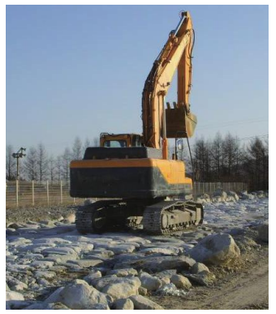
Analyze hydraulic component systems and draw optimized designs

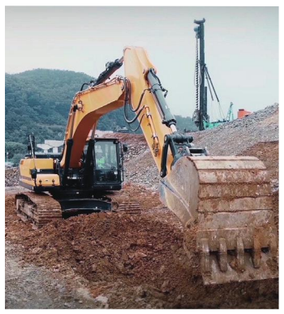


Flow Analysis

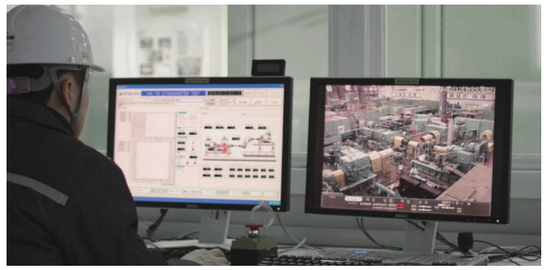
Evaluate the performance and review the design by analyzing the internal flow field properties of rotary parts







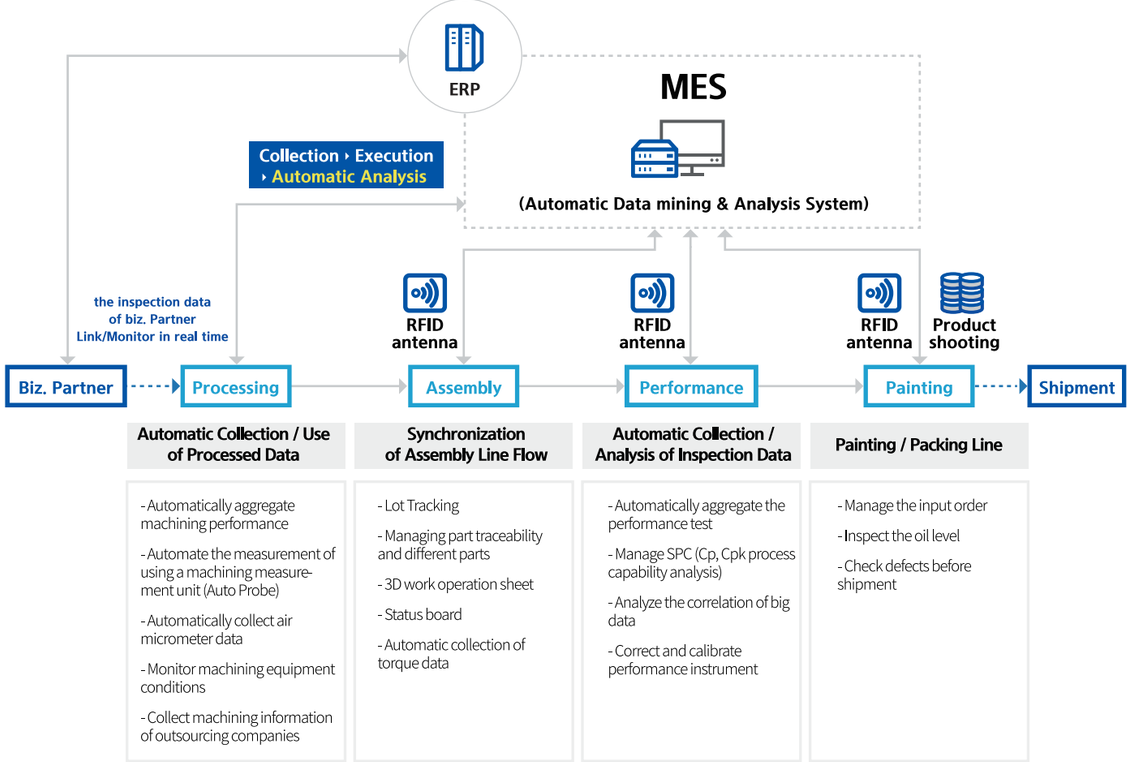
With the latest manufacturing execution system (MES)-based production system, HD HYUNDAI XITESOLUTION aims to produce products most suitable for customers by eliminating waste elements during production and collecting, analyzing, and using integrated field data in real time for quality assurance.



Cutting-Edge Production Technology

HD HYUNDAI XITESOLUTION introduces the latest MES to supply perfect products by eliminating waste elements during production and securing product quality in all stages of production.

We operate an advanced production process by collecting, analyzing, and using field data in real time, allowing us to provide products customized for customers.

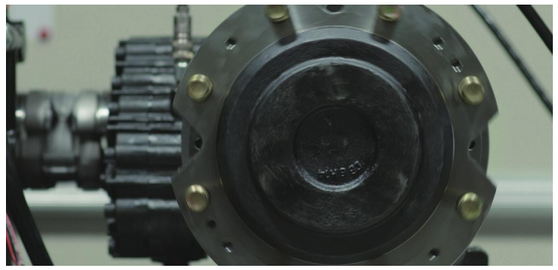


Automatic Collection / Use of Processed Data	Synchronization of Assembly Line Flow	Automatic Collection / Analysis of Inspection Data	Painting / Packing Line
- Automatically aggregate machining performance - Automate the measurement of using a machining measurement unit (Auto Probe) - Automatically collect air micrometer data - Monitor machining equipment conditions - Collect machining information of outsourcing companies	- Lot Tracking - Managing part traceability and different parts - 3D work operation sheet - Status board - Automatic collection of torque data	- Automatically aggregate the performance test - Manage SPC (Cp, Cpk process capability analysis) - Analyze the correlation of big data - Correct and calibrate performance instrument	- Manage the input order - Inspect the oil level - Check defects before shipment

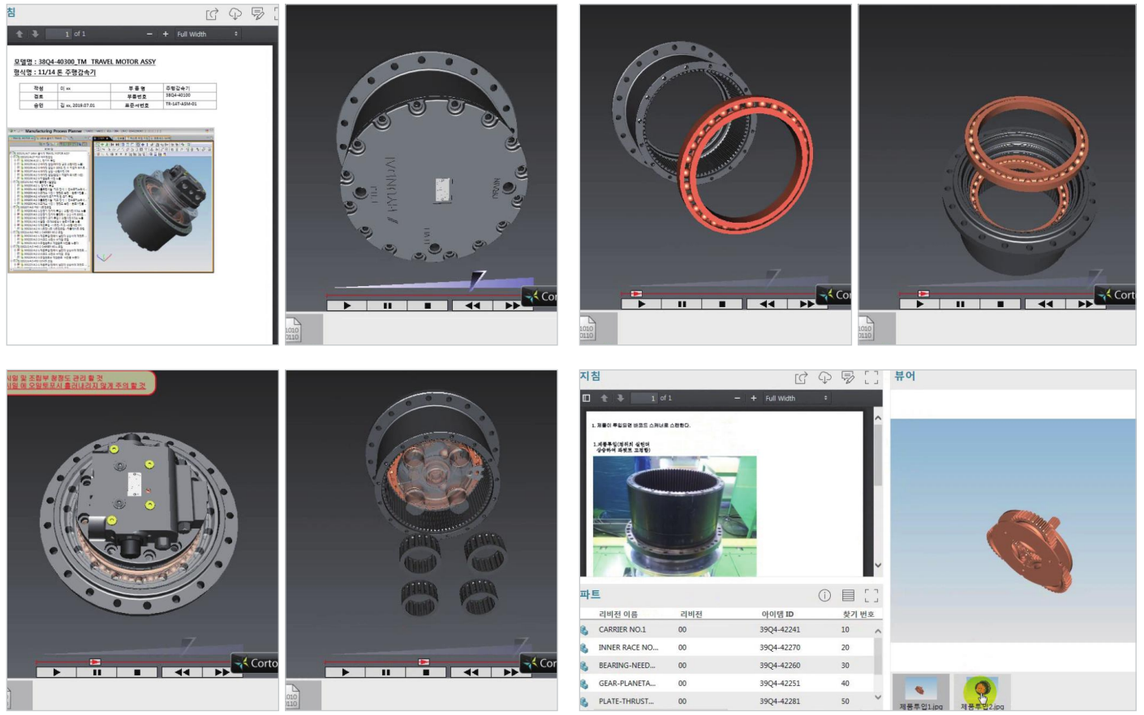
3D Work Operation Sheet

We secure high-quality products through the process based on the assembly standard, expressed as a 3D image.

- Visualize the work information through 3D animation
- Produce a product by comparing it with its 3D work operation sheet one by one for customization
- Ensure a high level of worker proficiency by operating a computer training system

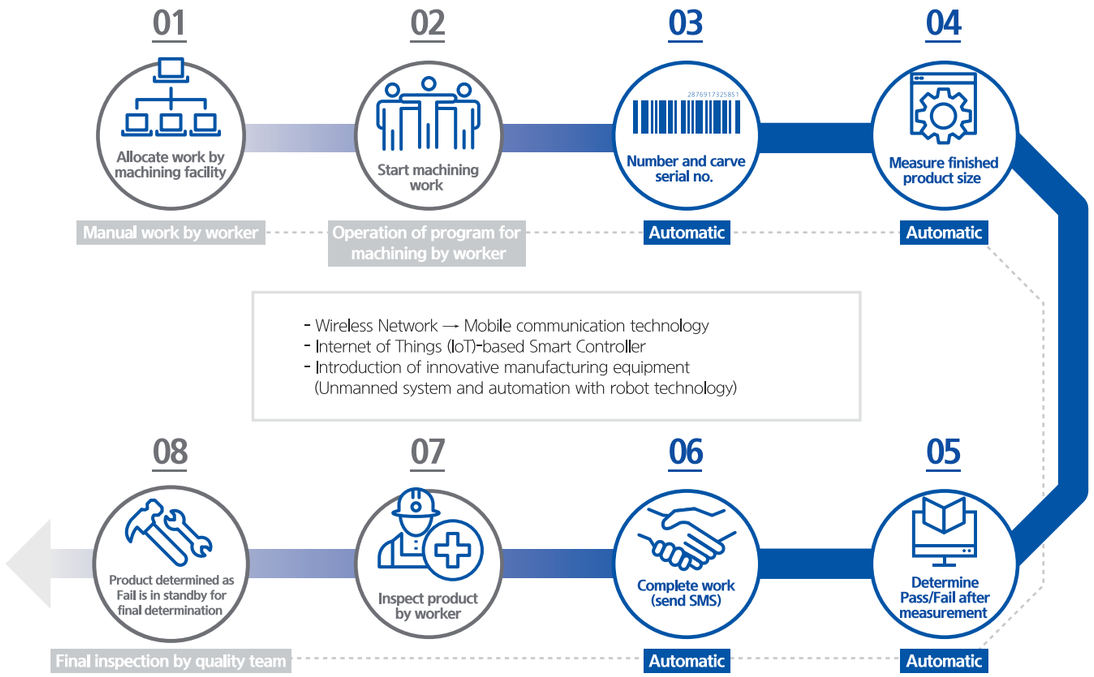


1. Instruction selection screen 1 2 | 2 2 | 2 3 | 2. 3D animation screen for training 3. Video material



Real-Time Product Verification System

We built an automated process to measure the dimension of machining facility. Based on the process, we automatically collect and analyze production data in real time to identify elements that will affect product quality in advance to secure the environment for producing optimized products.



Thorough Performance Verification

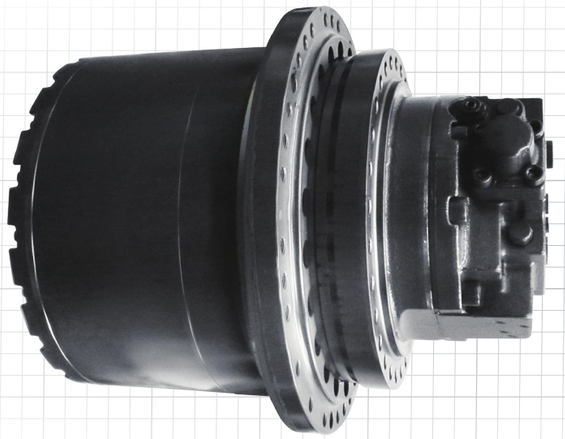
We operate the monitoring system for all processes. Each production stage undergoes a thorough verification process to produce top-quality products.

We also perform performance tests for all products, and record and manage data.
Through our systems, we produce top-quality products.

Total performance of powertrain factory

Performance of motor factory

Travel Motor



Type

2 Speed travel motor

Features

01 | High Efficiency

02 | High Reliability and Load Capacity
- A number of field application records in subsidiaries

03 | Compact Design: Embedded motor valve and Parking brake

Major Components

Hydraulic motor	• Swash plate type
Valve	• Counter balance valve • Automatic 2-speed shift valve • Shockless relief valve
Parking brake	• Wet type multi disc brake
Reduction gear	• 2-Stages Planetary gear type

Model Information	
HT21A(M172/R42)	
H	HYUNDAI
T	TRAVEL
21	MACHINE WEIGHT(TON)
A	DESIGN SERIES
M	MOTOR
171.5	DISPLACEMENT
R	REDUCTION GEAR
42	OUTPUT TORQUE

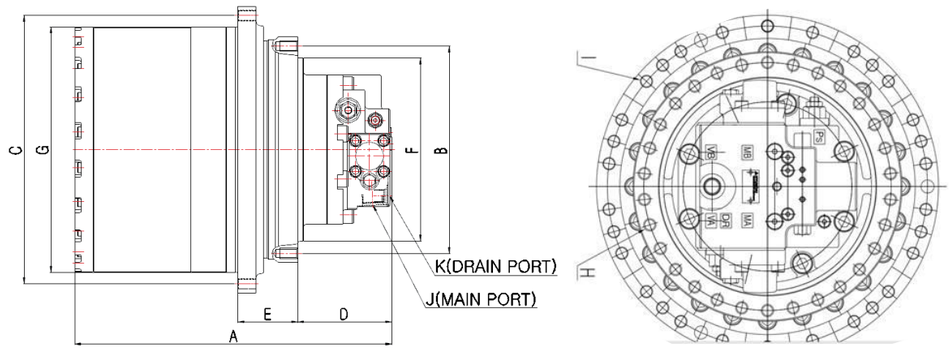
Specifications

Travel Motor

Model	Travel Motor				Reduction Gear			Application (Ton)
	Displacement (㎤/rev)	Max. Speed (rpm)	Max. Pressure (Kgf/㎠)	Brake Torque (Kgf·m)	Gear Ratio (i)	Output Torque (Kgf·m)	Output Speed (rpm)	
HT14A(M77/R23)	77	2,771	350	33	53.706	2,304	51.6	14~16
HT16A(M147/R33)	147.1	1,913	350	71	40.364	3,307	47.42	16~18
HT21A(M172/R42)	171.5	2,041	350	65.1	44	4,197	46.5	20~23
HT25A(M182/R45)	182.4	2,110	350	72.3	44	4,471	47.9	24~27
HT30A(M283/R63)	282.6	1,718	350	134	39.866	6,276	43.1	28~33
HT43A(M283/R87)	282.6	2,071	360	150	53.454	8,655	38.7	40~45
HT50A(M282/R99)	281.7	2,160	360	150	61.47	9,921	35.1	45~52

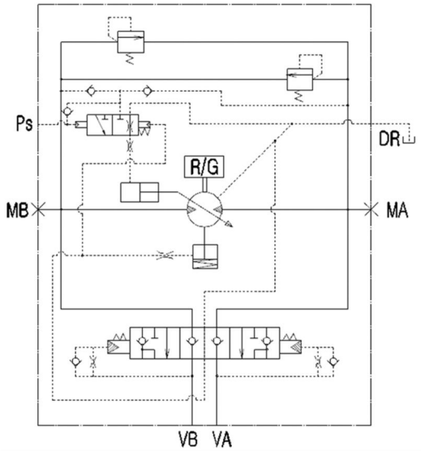
Dimensions

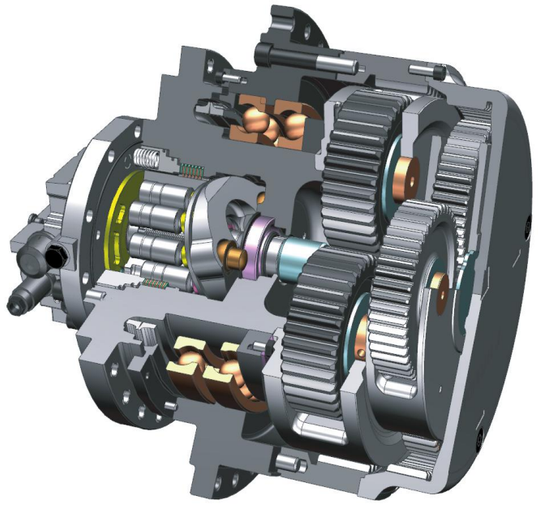
Travel Motor



Model	A	B	C	D	E	F	G	H	I	J	K	L
HT14A(M77/R23)	391	280	364	101.5	98.5	246	324	20-M16X2	21-M16X2	PF3/4	PF1/2	PF1/4
HT16A(M147/R33)	507.3	340	440	154.8	98.5	300	402	30-M16X2	30-M16X2	PF1	PF1/2	PF1/4
HT21A(M172/R42)	520.8	340	440	154.8	98.5	300	402	30-M16X2	30-M16X2	PF1	PF1/2	PF1/4
HT25A(M182/R45)	520.8	340	440	154.8	98.5	300	402	30-M16X2	38-M16X2	PF1	PF1/2	PF1/4
HT30A(M283/R63)	583.7	440	492	172.5	102.5	380	450	18-M24X3	26-M20X2.5	PF1	PF1/2	PF1/4
HT43A(M283/R87)	633	460	592	172.5	154	420	545	24-M20X2.5	30-M20X2.5	PF1	PF1/2	PF1/4
HT50A(M282/R99)	633	460	592	172.5	154	420	545	24-M20X2.5	30-M20X2.5	PF1	PF1/2	PF1/4

Hydraulic Circuit





Swing Motor

Type

Axial piston motor with a built-in reduction gear

Features

01 | High Efficiency

02 | High Reliability and Load Capacity
- A number of field application records in subsidiaries

03 | Fine operability

Major Components

Hydraulic motor	• Swash plate type
Valve	• Anti reaction valve • Time delay valve • Make up valve • Shockless relief valve
Parking brake	• Wet type multi disc brake
Reduction gear	• 2-Stages Planetary gear type

Model Information	
HS21A(M143/R11)	
H	HYUNDAI
S	SWING
21	MACHINE WEIGHT(TON)
A	DESIGN SERIES
M	MOTOR
143	DISPLACEMENT
R	REDUCTION GEAR
11	OUTPUT TORQUE

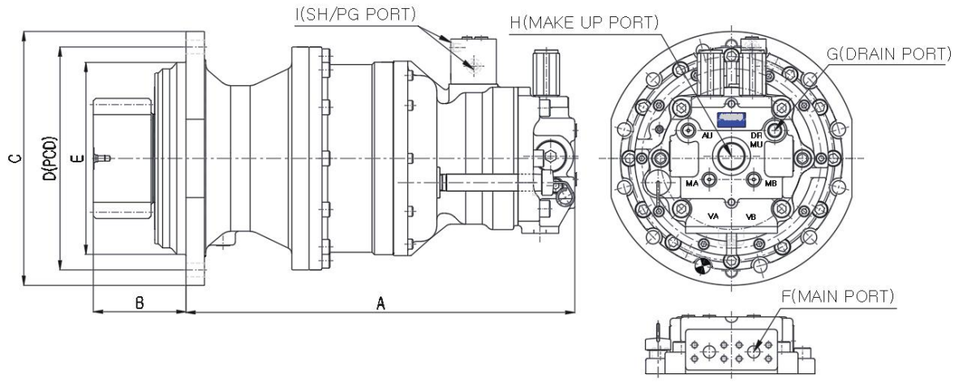
Specifications

Swing Motor

Model	Swing Motor				Reduction Gear			Application (Ton)
	Displacement (㎤/rev)	Max. Speed (rpm)	Max. Pressure (Kgf/㎠)	Brake Torque (Kgf·m)	Gear Ratio (i)	OutputTorque (Kgf·m)	OutputSpeed (rpm)	
HS14A(M71/R05)	71	1,740	285	31.3	17.409	560.3	99.98	11~15
HS16A(M143/R09)	142.8	1,148	285	63.3	14.608	946	76.72	16~18
HS21A(M143/R11)	142.8	1,557	265	63.3	18.675	1,124	83.38	20~23
HS25A(M143/R14)	142.8	1,557	300	63.3	21.176	1,443	73.53	24~27
HS30A(M157/R19)	156.9	1,606	300	84.4	25.401	1,903	63.22	28~33
HS50A(M143/R12)	142.8	1,331	285	63.3	18.824	1,219	66.98	45~52

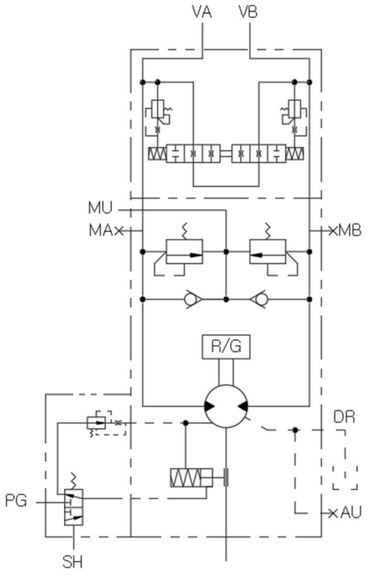
Dimensions

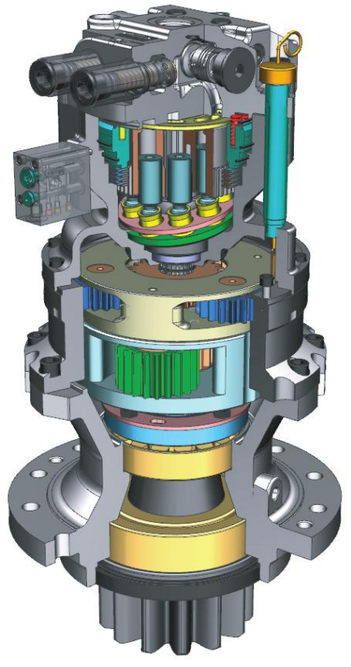
Swing Motor



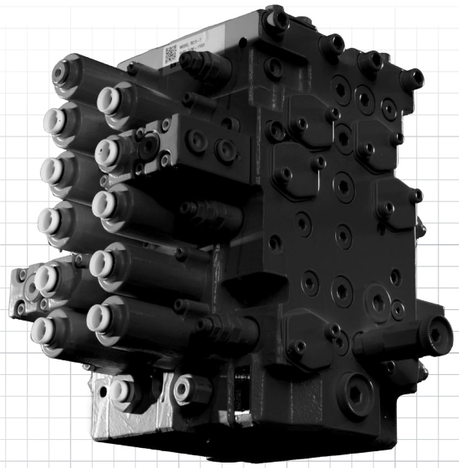
Model	A	B	C	D	E	F(Split Flange)	G	H	I
HS14A(M71/R05)	501	118	323	290	200	1/2”	PF3/8	PF3/4	PF1/4
HS16A(M143/R09)	551.5	147	410	360	310	3/4”	PF1/2	PF 1 ¼	PF1/4
HS21A(M143/R11)	551.5	147	410	360	310	3/4”	PF1/2	PF 1 ¼	PF1/4
HT25A(M182/R45)	559.8	186.2	510	460	390	3/4”	PF1/2	PF 1 ¼	PF1/4
HS30A(M157/R19)	678	179	570	520	390	3/4”	PF1/2	PF 1 ¼	PF1/4
HS50A(M143/R12)	630	166.5	410	360	310	3/4”	PF1/2	PF 1 ¼	PF1/4

Hydraulic Circuit





MCV (Main Control Valve)



Type

Negative Flow Control Type Main Control Valve

Features

01
- High Efficiency
- Low Pressure Loss
- Optimized Flow Line

02
- High Reliability
- Stabilized Hydraulic Circuit
- Enhanced Spool Operation (Anti-stick)
- Enhanced Durability

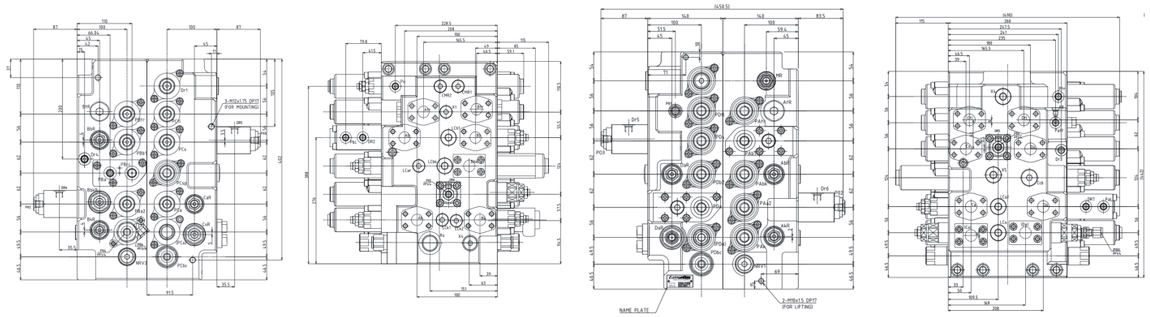
Model Information	
SCV28H	
S	SUPERIOR
C	CONTROL
V	VALVE
28	Spool Dia. Φ28mm
H	HYUNDAI development

Specifications

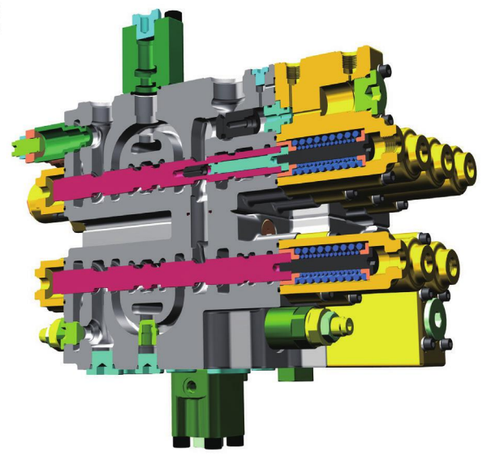
MCV

Feature	Specification		
Flow Control Type	Center By-pass	Negative	
Housing Quantity	P1, P2	2 pieces	
Weight	P1 & P2 Housing	about 215kg	
Rated Condition	Pressure	34.3MPa	(350kgf/cm²)
	Flow	280 L/min	
Pilot Pressure	Maximum	4.9MPa	(50kgf/cm²)
Priority Function	Boom Up Only	vs Swing	by Logic Valve
		vs Arm	by Logic Valve
		vs Bucket	by Stroke Limit
	Swing	vs Arm	by Spool
Flow Confluence	Bucket / Option	By-pass Cut Spool	
	Boom	Boom Up Only	
	Arm	Both In and Out	
Flow Regeneration	Boom	Spool Internal Type	
	Arm	Independent Spool Type	
Holding Valve	Boom	Valve Block Type	
	Arm	Valve Block Type	
Etc. Function	Travel Straight Spool		
Operating Conditions	Hydraulic Fluid	Mineral Oil	
	Oil Temp	-20~+90 °C	-4~+194°F
	Atmosphere	-22~+50 °C	-4~+122°F
	Contaimination	Be controlled with in NAS 10 Level	

Dimensions



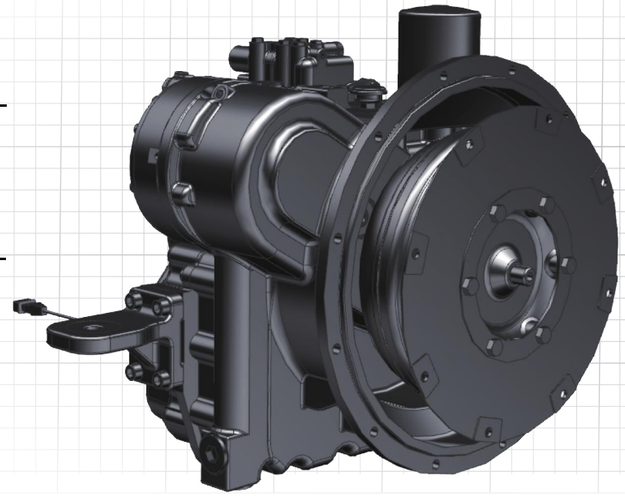
Hydraulic Circuit



Transmission

Type

Power Shift / Electronic Control Shift(HE Series)



Features

01 | High Torque Ratio & Efficiency of Torque Converter

02 | Shockless shifting & High Reliability

03 | High Capacity Clutch Pack & Gear Train

04 | Electronic Smart Control System(HE Series)

Major Components

Descriptions		HT Series	HE Series
Torque Converter		• 3-Elements, 1-Stage, 2-Phases • 4-Elements, 2-Stages, 3-Phases	←
TCU (Transmission Control Unit)		Without	With
Control Valve	Valve Type	On/Off	EPPR
	Modulation	Hydraulic	Electronic
	Inching	Mechanic	Electronic
Hydraulic Clutch		Wet Tpye Multi Disc	←

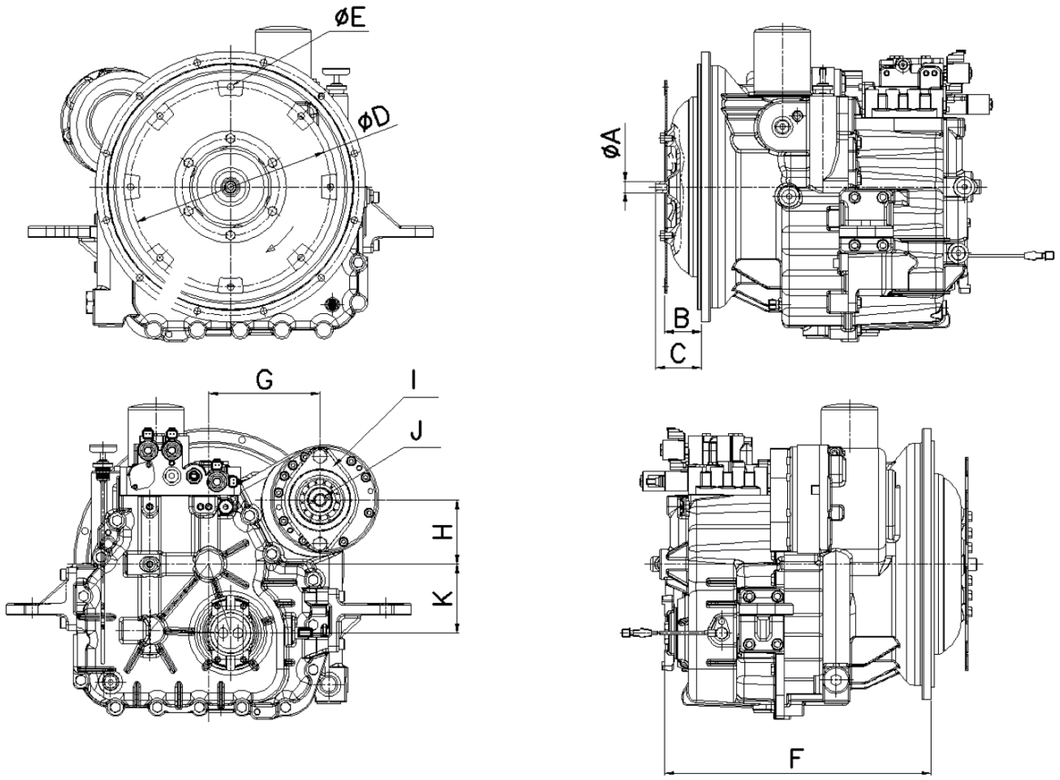
Specifications

Transmission

Application		Model	Control Type	Speed Range F/R	Torque Converter (Element-Stage-Phase)	Clutch Type	Gear Train	Engine Mounting (Housing)
Vehicle	Ton							
Class IV	1~3	HT31C	Hydraulic	1/1	3-1-2	Wet Multi-Disc	Counter Shaft, Helical	Engine Dependent
	4~5	HT50C	Hydraulic	1/1	4-2-3	Wet Multi-Disc	Counter Shaft, Spur	SAE “3”
Class V	1~3	HT31	Hydraulic	1/1	3-1-2	Wet Multi-Disc	Counter Shaft, Helical	Engine Dependent
	1~3	HE31	Electronic	1/1	3-1-2	Wet Multi-Disc	Counter Shaft, Helical	Engine Dependent
	4~5	HT50	Hydraulic	1/1	4-2-3	Wet Multi-Disc	Counter Shaft, Spur	SAE “3”
	4~5	HT51	Hydraulic	2/1	3-1-2	Wet Multi-Disc	Counter Shaft, Helical/Spur	SAE “3”
	4~5	HE51	Electronic	2/1	3-1-2	Wet Multi-Disc	Counter Shaft, Helical/Spur	SAE “3”
	6~10	HT101	Hydraulic	2/1	4-2-3	Wet Multi-Disc	Counter Shaft, Helical/Spur	SAE “3”

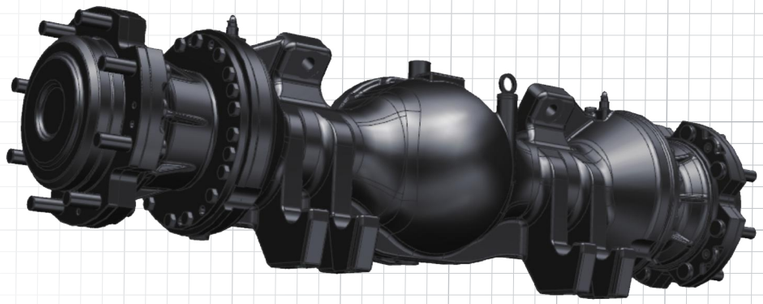
Dimensions

Transmission



Dim / Model	A	B	C	D	E	F	G	H	I	J	K	Remarks
HT31C	15	-10.5	31	320	9 (12 ea)	334	-	-	SAE”A”	11T 16/32 DP	115	
HT31	15	-10.5	31	320	9 (12 ea)	334	-	-	SAE”A”	11T 16/32 DP	115	
HE31	15	-10.5	31	320	9 (12 ea)	334	-	-	SAE”A”	11T 16/32 DP	115	
HT50C	20	66.1	96.6	320.7	11 (6 ea)	333.3	185.2	106.9	SAE”B”	13T 16/32 DP	114	
HT50	19	61.7	76.2	333.4	11 (8 ea)	454.9	185.2	106.9	SAE”B”	13T 16/32 DP	114	
HT51	19	61.7	76.2	334.4	11 (8 ea)	444.6	185.2	106.9	SAE”B”	13T 16/32 DP	114	
HT101	19	61.7	76.2	334.4	11 (8 ea)	586.5	236.3	76.5	SAE”B”	13T 16/32 DP	306	

Drive Axle



Type

Wet multi disc & hydraulically actuated Service Brake

Planetary Hub reduction

Features

01 | Robust & Compact Axle Housing

02 | Self-adjusting Service Brake

03 | Parking Brake option selectable

04 | Reliable and Strong Hub Reduction Pars & Gears(Bevel, Differential, Planetary)

Major Components

Service Brake	• Wet multiple disc
Parking Brake	• Wet multiple disc • Caliper Brake
Hub Reduction	• Planetary Gear set
Differential	• Open Differential
Bevel Gear	• Spiral Bevel Gear

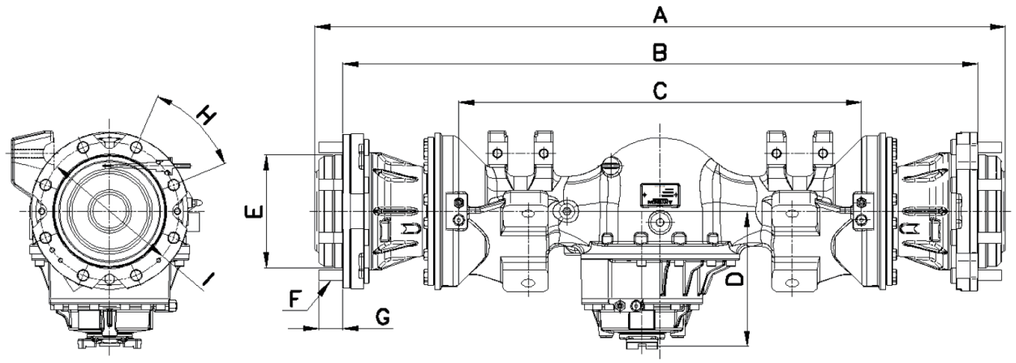
Specifications

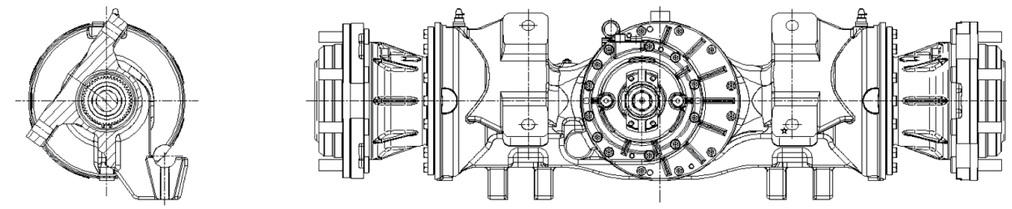
Drive Axle

Application		Model	Differential Type	Hub Reduction Type	Service Brake	Parking Brake Type	Mast Mount Type	Frame Mount Type
Vehicle	Ton							
Class IV	1~3	HA31C	Open, Bevel Gear	Planetary Gear	Wet Multi-Disc(with self-adjust)	-	Trunnion	Pad
	4~5	HA50C	Open, Bevel Gear	Planetary Gear	Wet Multi-Disc(with self-adjust)	Caliper	J-Hook	Flange
Class V	1~3	HA31	Open, Bevel Gear	Planetary Gear	Wet Multi-Disc(with self-adjust)	-	Trunnion	Pad
	1~3	HA31D	Open, Bevel Gear	Planetary Gear	Wet Multi-Disc(with self-adjust)	-	Trunnion	Pad
	4~6	HA61	Open, Bevel Gear	Planetary Gear	Wet Multi-Disc(with self-adjust)	Wet Multi Disc	J-Hook	Pad
	6~8	HA81	Open, Bevel Gear	Planetary Gear	Wet Multi-Disc(with self-adjust)	Caliper	J-Hook	Pad

Dimensions

Drive Axle





SECTION A–A

Dim / Model	A	B	C	D	E	F	G	H	I	Remarks
HA31C	1069	949	676	198.5	Φ168	M20xP1.5	41	6x60 °	Φ220	
HA31	1066	953	607	198.5	Φ168	M20xP1.5	41	6x60 °	Φ220	
HA31D	1240	1158	607	198.5	Φ160	M20xP1.5	41	6x60 °	Φ212	
HA50C	1270	1160	699	214	Φ223.8	M22xP1.5	48	8x45 °	Φ275	
HA61	1370	1260	799	268.6	Φ223.8	M22xP1.5	48	8x45 °	Φ275	
HA81	1930	1558	1104	320	Φ220.8	M22xP1.5	55	8x45 °	Φ275	

Hydraulic Cylinder

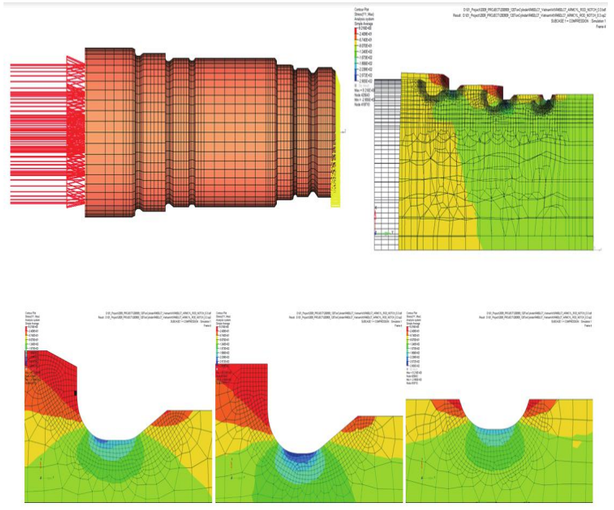
01. Design for excellent durability and long life
    - Sealing system for high durability at high temperature, and long life pin bushing
    - Corrosion-resistant hard chrome plated piston rod to improve durability against corrosion
02. Compact and lightweight design against high pressure
03. Design customized for customers, specialized for diverse work environments
04. Eco-friendly production by using green materials and manufacturing techniques

1	2	3	4	5
HCA	200	120	2500	E

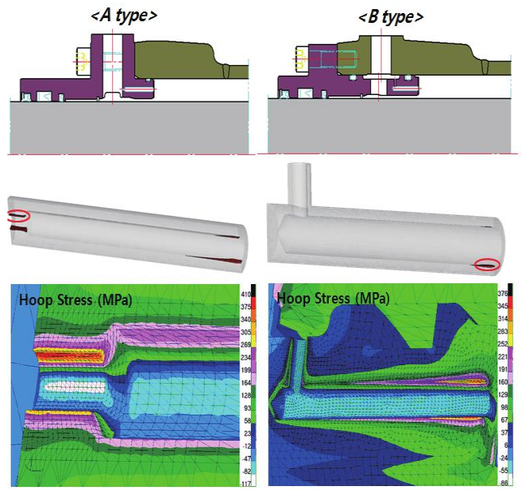
1	Model (Type)	HC : Hyundai Genuine Cylinder "A" : Middle&Large Excavator, Wheel Loader "B" : Small&Mini Excavator, Wheel Loader "C" : Wheel Loader
2	Cylinder Bore	mm
3	Rod Diameter	mm
4	Stroke	mm
5	Usage	"E" for Excavator "W" for Whell loader "O" for others

Type	Cylinder Bore (mm)	Max Stroke (mm)	Max PRE' (Mpa)	Main Application
A	90~200	2000	35	Middle&Large Excavator Wheel Loader
B	50~115	1500	30	Small&Mini Excavator Wheel Loader
C	100~200	2000	30	Wheel Loader

Analysis of Design Stress



Analysis of Fatigue Life

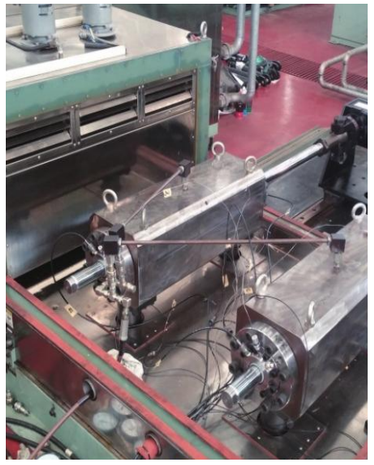


Design with 3D CAD modeling and Virtual Production Development (VPD)
Implement the optimized design by verifying stress and fatigue life in advance during all processes

Hydraulic Impulse Tester

Verify product robustness and durability by applying an impulse impact pressure under a harsher condition than an actual load that may be applied to the product.

Seal Durability Test



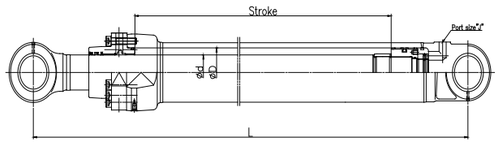
Verify the optimized seal system by performing a durability test on seal products under diverse environmental conditions for testing, searching, and developing seal systems, meeting the customer conditions.

Temperature and Humidity Tester

Verify product durability and quality by creating an environment with extreme conditions such as low and high temperatures and high humidity where construction machinery and material handling equipment are used.

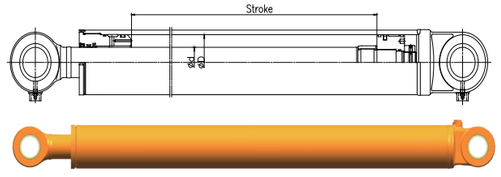
Hydraulic Cylinder

HCML Series
(Middle & Large Excavator, Wheel Loader)



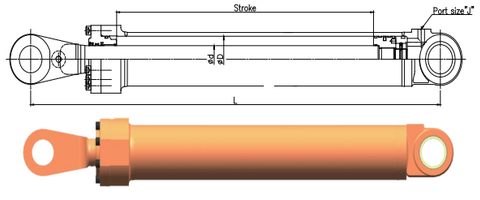
Cylinder bore	Rod diameter	Max stroke	Retracted length L (Min)	Port size J
90	55	1050	1200	#3
95	60/65/70	1100	1250	#2/#5/#6
100	70	1100	1250	#5/#6
105	75	1100	1250	#2/#3/#4/#5/#6
110	65/75	1100	1250	#5/#6
115	70/80	1100	1250	#2/#3
120	70/80/85	1100	1250	#1/#6
125	70/85	1100	1300	#5/#6
130	80/90	1100	1350	#1/#8
135	95	1100	1350	#6/#8
140	75/95/100	1100	1350	#6/#7/#8
145	90/105	1250	1550	#6/#7/#8
150	105/110	1300	1650	#7/#8/#9
160	80/85/95/110	1300	1650	#6/#7/#8
170	115/120	1250	1650	#8/#9
180	90/95	1250	1650	#7
190	130	1200	1650	#8
200	100	1200	1650	#7

HCSM Series
(Small & Mini Excavator, Wheel Loader)



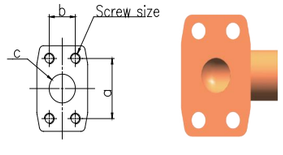
Cylinder bore	Rod diameter	Max stroke	Retracted length L (Min)	Port size J
100	65	850	1200	#5
105	65	850	1200	#5
110	65	850	1200	#5
120	70	900	1200	#5
125	70	900	1200	#6
140	75/80	950	1300	#7
160	90/95	950	1350	#7
180	100/105	1000	1500	#6/#7
200	110	1000	1500	#10/#11

HCL Series (Wheel Loader)



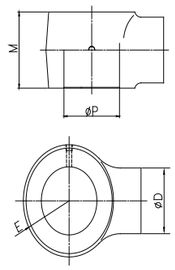
Cylinder bore	Rod diameter	Max stroke	Retracted length L (Min)	Port size J
80	50	700	400	Optional by customer request (METRIC, PF, PT, UNF, ORFS available)
95	55	700	400	
90	50/55/60	800	500	
100	50/65	900	500	
105	55/60	900	700	
110	55/60/65	900	750	
115	60	1000	750	

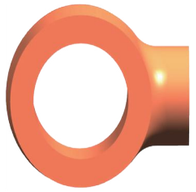
STANDARD SAE PORT SIZE
(HCML and HCL Series)



Port size	A	B	C	Screw size	Port size	A	B	C	Screw size
#1	17.5	38.1	¢ 13	M8*1.25	#7	26.2	52.4	¢ 25	M10*1.5
#2	18.2	40.5	¢ 13	M8*1.25	#8	27.8	57.2	¢ 25	M12*1.75
#3	18.2	40.5	¢ 15	M8*1.25	#9	31.8	66.7	¢ 32	M12*1.75
#4	19.8	42.9	¢ 15	M8*1.25	#10	30.2	58.7	¢ 25	M12*1.75
#5	22.2	47.6	¢ 15	M10*1.5	#11	30.2	58.7	¢ 27	M12*1.75
#6	23.8	50.8	¢ 19	M10*1.5					

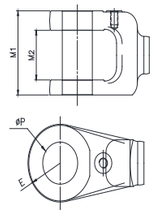
ROD EYE - RA type

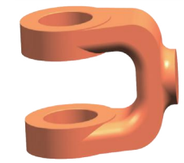




E	M	¢ ρ	E	M	¢ ρ	E	M	¢ ρ
45	55	55	65	70	80	80	116	95
45	60	60	65	90	80	80	116	115
50	60	60	67	80	85	85	106	105
50	65	65	70	85	70	85	116	110
50	65	68	70	90	85	90	116	115
50	70	60	70	95	85	90	126	115
50	75	50	70	95	90	90	130	105
55	65	70	70	95	95	95	126	125
60	70	75	70	96	85	95	132	110
60	75	80	70	96	95	100	110	125
60	80	80	70	105	95	100	126	125
60	90	85	70	106	85	105	126	125
62.35	75	85	80	90	105	105	126	135
63	75	85	80	113	95	110	140	135

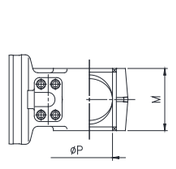
ROD EYE - RB type

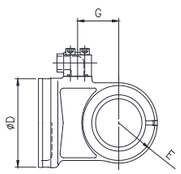




E	M1	M2	¢ ρ
60	151	89	65
60	159	89	65
70	166	96	75
80	193	102	95
85	203	103	100
110	242	122	120

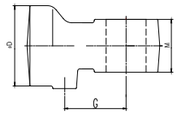
BASE – BA Type

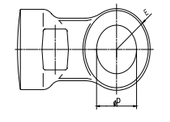




E	M	¢ ρ	¢ D	G	E	M	¢ ρ	¢ D	G
70	106	95	143	80	85	130	105	173	95
75	100	85	148	75	85	130	105	176	95
75	116	95	162	80	90	100	115	189	70
75	116	95	165	80	90	100	115	205	70
75	116	95	167	80	90	116	115	190	90
75	116	105	156	80	90	126	115	190	90
75	116	105	162	80	95	132	110	194	95
75	116	105	165	80	100	110	125	189	70
75	116	105	167	80	100	110	125	205	70
81	90	110	165	60	100	125	135	213	90
81	90	110	182	60	100	125	135	227	90
85	106	85	165	80	100	126	125	202	150
85	116	115	167	95	105	116	135	201	170
85	116	115	176	95	110	140	135	223	100
85	120	110	176	95					

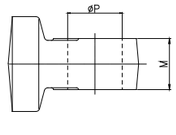
BASE – BB Type

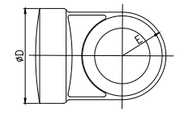




E	M	¢ ρ	¢ D	G	E	M	¢ ρ	¢ D	G
45	60	60	106	78	70	105	95	146	150
65	70	80	130	105	75	116	95	167	80
65	70	80	130	114	85	106	105	167	155
67	90	85	118	120	85	106	105	180	155
70	95	85	125	130	90	116	115	190	90
70	95	85	130	130	90	116	115	190	155
70	95	95	142	150	100	126	125	191	155
70	95	95	148	150	100	126	125	201	155
70	105	95	142	100	110	140	135	223	100
70	105	95	144	150					

BASE – BC Type





E	M	¢ ρ	¢ D	E	M	¢ ρ	¢ D
45	60	60	106	50	65	68	132
50	60	60	103	55	65	60	132
50	60	60	105	55	75	60	134
50	65	65	127	60	70	75	126
50	65	68	116	60	70	75	130

Global Network

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Seongnam, Korea

Technology Innovation Center

Yongin, Korea

Motor Plant

Gyeongju, Korea

MCV & Powertrain Plant

Ulsan, Korea

Motor & Cylinder Plant (Changzhou Hydraulic Corporation)

Changzhou, China