

## Certificates



## Awards



## DONGIL MACHINERY CO., LTD.

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TEL	+82-31-673-0379
FAX	+82-31-673-2567
2nd Plant Address	1041, Gyeonggidong-ro, Idong-eup, Cheoin-gu, Yongin-si, Gyeonggi-do (PC 17139)
TEL	+82-31-337-0065
FAX	+82-31-321-8326
Email [Steering Parts]	sales@dongilm.com
Email [Climate Control Parts]	sdongilm@dongilm.com
Company Website	www.dongilm.com
Company Video URL	youtu.be/AGpVikQzvBs

Beyond Now,  
Creating a better future





# Business Introduction

Dong-Il Machinery and Dong-Il Techwin are technologically innovative companies that have various localization experiences in the steering and climate control fields of passenger cars and commercial vehicles. It is a specialized automotive parts manufacturing company with integrated solutions from design to evaluation and mass production.

## Head Office and 1st Plant | Anseong



Address	431, Deokbongseowon-ro, Yangseong-myeon, Anseong-si, Gyeonggi-do, Korea
Fields	Steering System (Gearbox, C-EPS, R-EPS)

## 2nd Plant | Yongin



Address	1041, Gyeonggidong-ro, Idong-eup, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea
Fields	Climate Control Valve, HVAC System Parts

# Customers Introduction

Head Office and 1st plant | Anseong

**HYUNDAI**

**KIA**

**WIA**

**Mando**

**TATA**

**DAEWOO**

**ZYLE**

**자일자동차(주)**

**EDISON MOTORS**

2nd Plant | Yongin

**HANON SYSTEMS**

**MAHLE**

**Valeo**

**SMP**

**HYUNDAI**

**KIA**

**Ford**

**BMW**

# History

2021  
- 2020

2021.05

Appointed Small Giant Company of Korea

2020.06

Signed MOU with KAIST for technology cooperation

2019  
- 2010

2019.03

Acquired Excellence award for the innovative process (Hanon Systems)

2018.11

Acquired IR52 Jang, Young-Shil award: External Control Valve

2018.10

Acquired Minister prize of Ministry of Trade, Industry, and Energy in the automobile parts industry award (Group sector)

2017.11

Acquired IATF 16949 Quality system certificate

2016.12

Acquired Export Tower for 5 million dollars

2015.11

Produced Hyundai Wia's power steering gearbox

2015.10

Began manufacturing ECV localization domestically

2015.09

Acquired Industrial medal for productivity improvement (from President)

2014.07

Appointed The best quality company (Hanon Systems)

2013.05

Acquired Businessman of merit award in SMEs (from Prime Minister)

2013.03

Appointed Zero Defects Company in quality management (Hanon Systems)

2012.12

Produced large types of P/S Gear Box

2012.11

Acquired Minister prize of Ministry of Knowledge Economy in the international material parts industry

2011.01

Began manufacturing DCV and SDD localization domestically

2009  
- 2000

2009.09

Registered Patent of an Air-conditioning compressor valve's triplication  
Appointed INNO-BIZ

2007.11

Produced medium types of P/S Gear Box

2005.12

Acquired ISO 14001 certificate

2005.11

Established "Dong-Il Techwin" Company

2005.01

Appointed The best quality company (Hanon Systems)

2004.05

Acquired Businessman of merit award in SMEs (from Prime Minister)

2004.01

Acquired ISO/TS 16949 Quality system certificate

2003.04

Acquired Single PPM award (from President)

2002.01

Acquired Excellent quality award (Hanon Systems)

2000.10

Acquired Gold prize of Gyeonggi Province's Industrial Peace award (Company sector)

1999  
- 1990

1999.07

Acquired Contribution medal for localization domestically

1998.07

Acquired ISO 9001 Quality system certificate

1996.11

Acquired IR52 Jang, Young-Shil award: Charge Valve

1996.10

Acquired "KT MARK" of domestic new technology

1996.09

Registered Patent of R-134a Charge Valve

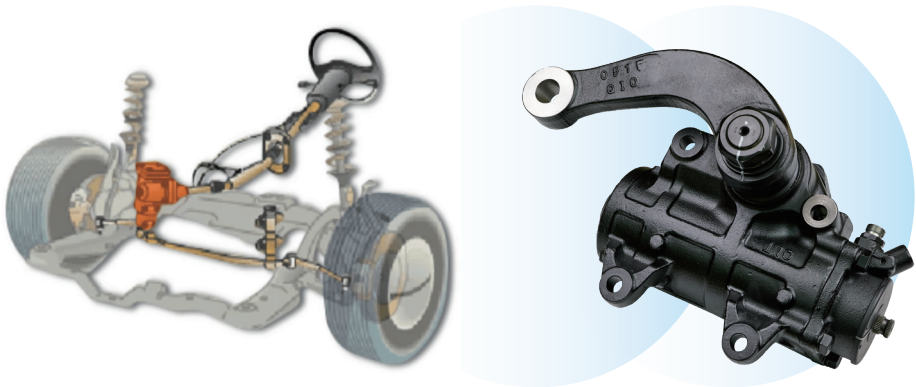
1986

1986.04









Established "Dong-Il Machinery" Company

Power Steering Gearbox

When the driver turns the steering wheel, the passage of the control valve is opened and closed by the torsional displacement, and the hydraulic pressure transferred from the pump is pressurized to Cylinder. It transfers steering effort to Linkage through the output shaft and performs steering of the front wheel.



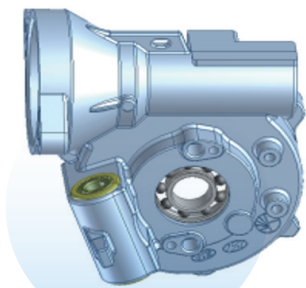
Product Specification

Classification	Dim 70D	Dim 74D	Dim 78D	Dim 85D	Dim 90D	Dim 100D	Dim 110D	
Product								
GVW (ton)	0.5	1	2.5	3	5	8	11	25
Cylinder Dia (mm)	70	74	78	85	90	100	110	
Max. Operating Pressure (Mpa)	9.0	9.0	12.5	12.5	13.5	13.0	13.5	18.0
Flow Rate (lpm)	6	6	7	7	9-12	16-17	16-17	16-25
Hydraulic Output Torque (N.m)	922	1030	2155	2560	3244	5108	6419	9497
Gear Ratio	16.4	16.4	18.6	18.6	18.6	20.2	17.0	19.0
								22.4
		18.0	22.6	22.6	21.6	22.4	22.4	24.9
Output Travel (deg)	90	90	95	95	100	100	100	100
Temperature (°C)	-40 ~ 120	-40 ~ 120	-40 ~ 120	-40 ~ 120	-40 ~ 120	-40 ~ 120	-40 ~ 120	-40 ~ 120

C-EPS/R-EPS Parts

Gearbox Housing Sub Ass'y

A part protects Worm Wheel + Worm Shaft from external shocks.



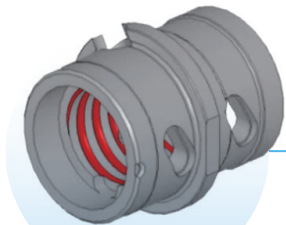
Input Shaft Sub Ass'y

When the steering wheel turns, a part generates relative displacement of torque sensor & output shaft by twisting the torsion bar.



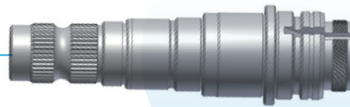
R-EPS BALL NUT

A part transfers the driving force of the motor to the rack bar and converts the rotational force into a linear reciprocating motion.



Output Shaft

A part transmits the input/output generated from the Input Shaft Sub Ass'y to the decelerator.





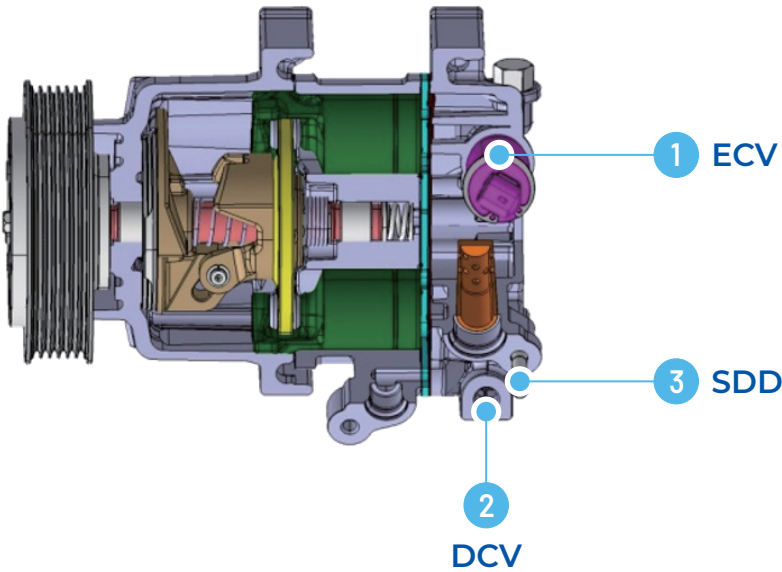
ECV 1



External Control Valve

Placed in the rear head of a variable capacity compressor, a valve controls the discharged pressure depending on the room temperature and cooling load.

Features	• Control flow precisely as Bellows senses the pressure • Realize excellent cooling performance with 3 or 4-Way flow passage • Acquired IR52 Jang, Young-Shil Award for successful domestically localized technology development • Secure excellent durability by applying high-strength materials		
	Classification	Working Environment	Type
	Voltage	DC 12.0 or 13.2 [V]	Large      Small
	Operating Frequency	PWM 400 ~ 1000Hz	 
	Working Pressure	Low compression Max. 2.0 MPa	
	Applied Model	Domestic/Overseas climate control companies of auto manufacturers	




DCV 2



Discharge Check Valve

When the air conditioner is off, a check valve prevents refrigerant & oil migration.


Features	• Applied the structure that reduces noise from the discharge pressure [Patent Registration] • Secure excellent durability by applying materials for high-temperature and low-friction		
	Specifications		
		• Provide various sizes based on customer specifications • Supplied to Domestic/Overseas climate control companies of auto manufacturers	

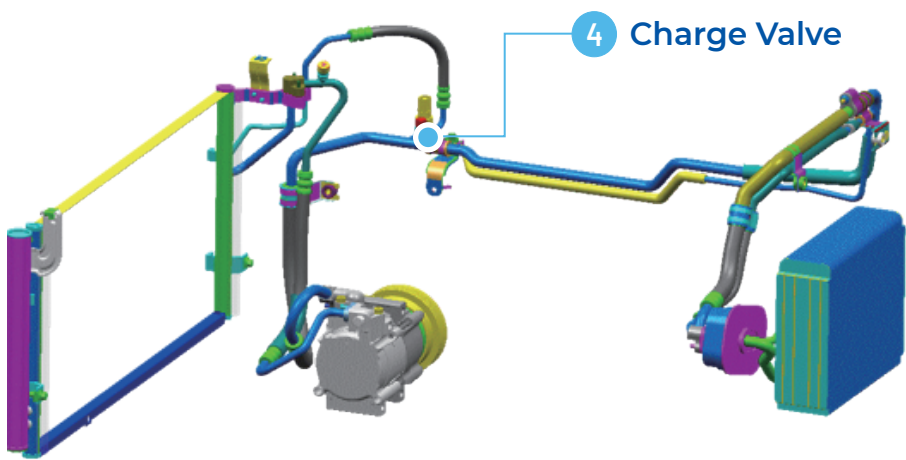
SDD 3



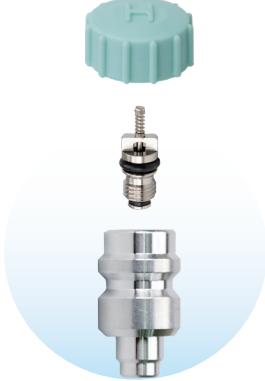
Suction Damping Device

Placed in the suction pressure side of the compressor, a valve reduces refrigerant flow noise.

Features	• Applied the structure that reduces pulsation noise of suction refrigerant [Patent Registration] • Secure excellent durability by applying materials for high-temperature and low-friction • Used the structure that reduces flow resistance		
	Specifications		
		• Manufacture various products depending on compressor capacities • Supplied to Domestic/Overseas climate control companies of auto manufacturers	









CHARGE VALVE 4



Charge Valve

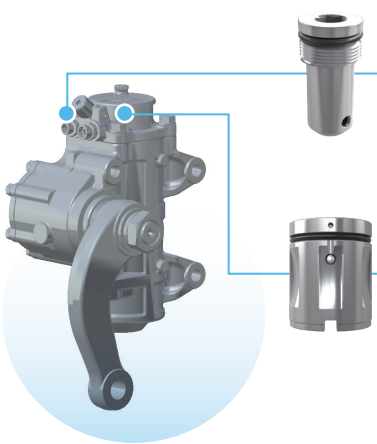
Placed in a hose pipe of an air conditioning system, a valve charges and collects refrigerant.

Features	<ul style="list-style-type: none"><li>• Meet the SAE J639 standard</li><li>• Exceptional sealing structure [Acquired IR52 Jang, Young-Shil Award]</li><li>• R-134a and R-1234yf are applicable</li></ul>				
Specifications	Core	Body		Cap	
					 
	<ul style="list-style-type: none"><li>• Provide various sizes based on customer specifications</li><li>• Supplied to Domestic/Overseas climate control companies of auto manufacturers</li></ul>				





**Gearbox for Hydrogen / Electric Vehicle**  
Pressure Relief Valve, Replenishment Valve



**Pressure Relief Valve**

- ✓ When maximum pressure works in the gearbox, a valve protects the steering system by transferring oil to a return line and by sustaining setting pressure internally.

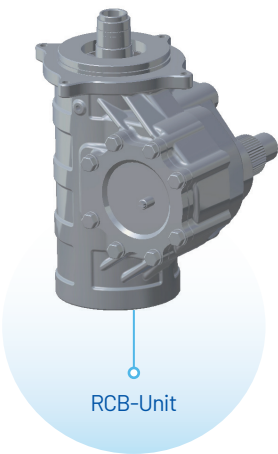
**Replenishment Valve**

- ✓ When the steering wheel works in a pump breakdown status, a valve reduces the oil resistance by providing flow passage internally.
- ✓ Satisfied vehicle safety standards

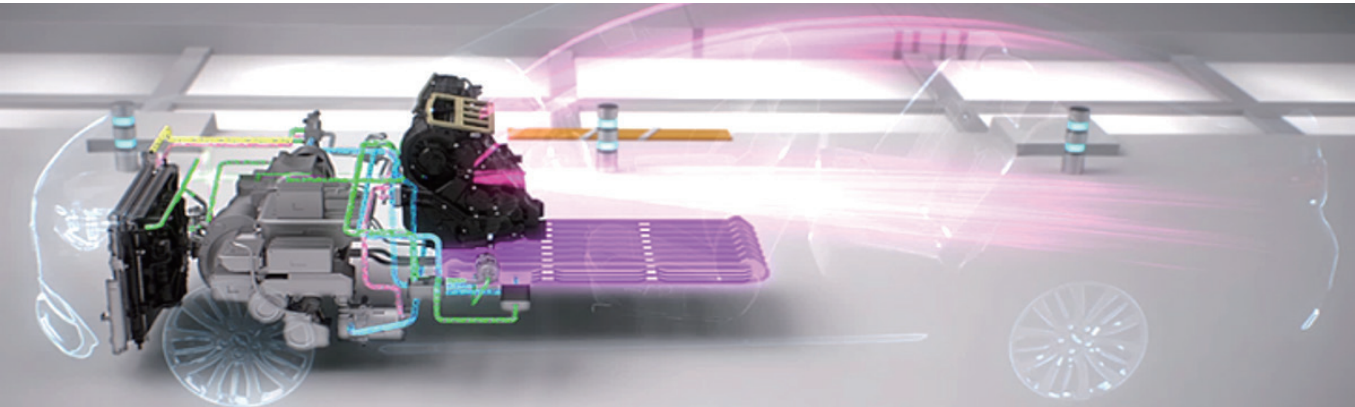
**RCB (BN-EPS)**

**RCB**

- ✓ It amplifies the output torque of the EPS-Unit and steers the front tires in the desired direction as a core part of the steering system for eco-friendly future commercial vehicles.



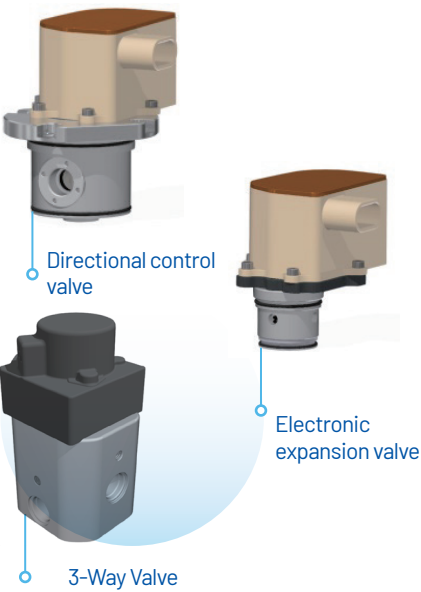
RCB-Unit



**REV**

**Refrigerant Valve**

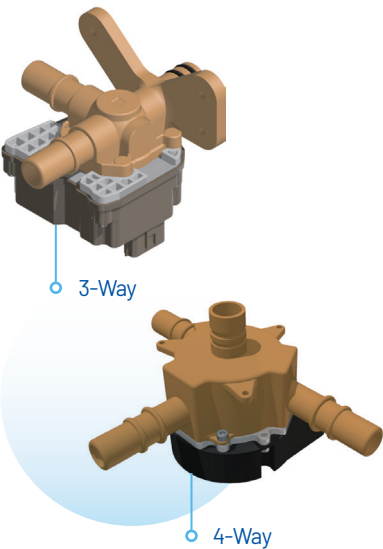
- ✓ Refrigerant Valves (2/3/4-Way) with directions control and expansion in the thermal management system
- ✓ Control flow precisely by position and feedback sensor
- ✓ Realize Multi\_Performance such as Full Open, Select Open, Closed, Expansion, etc.
- ✓ Low noise and excellent confidential performance



**CWV**

**Coolant Water Valve & Actuator**

- ✓ A flow passage change of coolant water in the thermal management system
- ✓ Multi-channel and Multi-way valves (3/4/6-Way and others) change a direction and control
- ✓ Applied small package and actuator
- ✓ Excellent precision and confidential performance with position control function

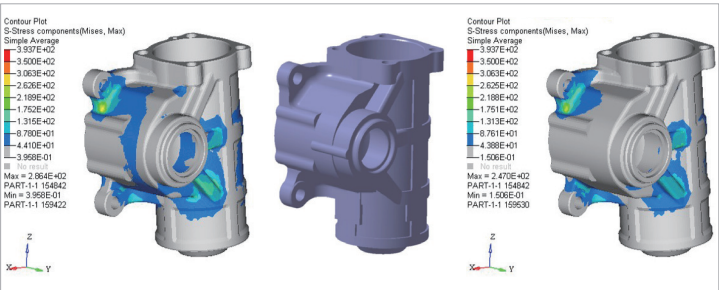


The R&D center established in 2006

has concentrated on its capability and development of valves in the climate control system and gearbox in the steering system based on international technology competitiveness.

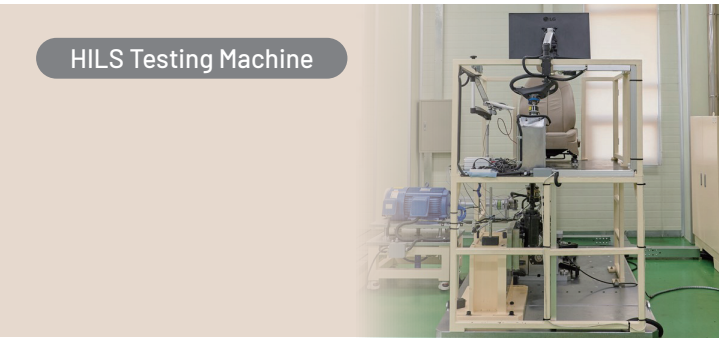
Independent design technology

- Optimized design using CATIA



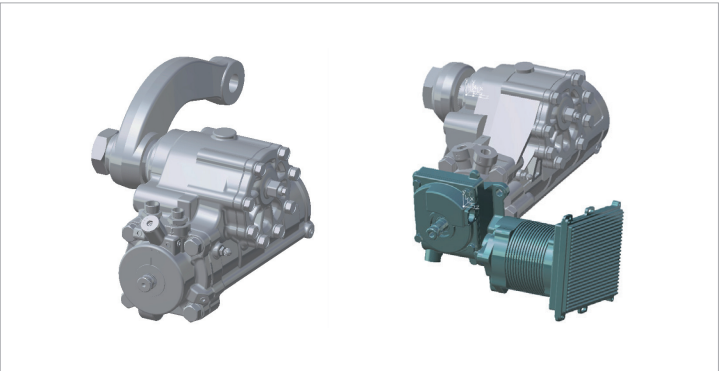
Reliability verification for developing high quality products

- Develop advanced and high-quality products through performance measurement
- Possess measuring instruments of NVH (noise, vibration, displeasure) like actual vehicle evaluation and those of steering effort, performance, durability, impacts, and maximum pressure.



Eco-friendly future technology

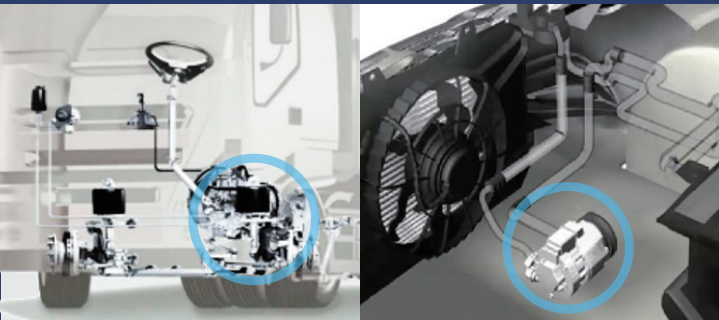
- Integrated-type of the electric steering gearbox
- Embedded Pressure Relief Valve in the steering gearbox
- Integrated-type of the emergency steering gearbox
- Noise reduced valves



Patents



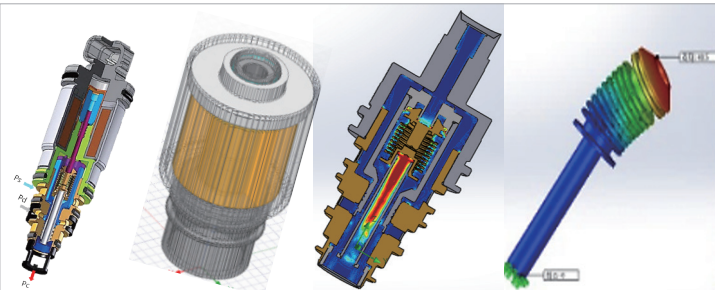
Automotive parts



Technology to design a pleasant environment with innovative values

Develop the best control parts

- Develop Global Top technology using CAE analysis and tests



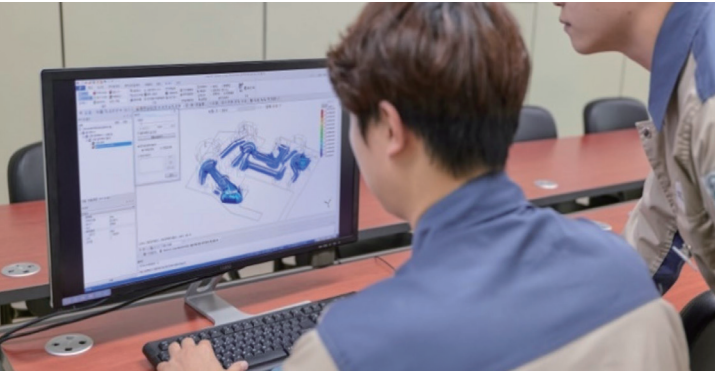
Develop products with high quality and high reliability

- Satisfy quality through reliability evaluation for an individual part, systems, and actual vehicles



Eco-friendly & New technology development

- Secure new technology with communicative culture and new ideas



Industry-University-Research Cooperation

- Continuous R&D investment and new technology development
- Realize the value of quality and customer satisfaction

