

Power for Tomorrow

Doosan Mobility Innovation




DOOSAN





DMI’s flagship octocopter drone powered with 2.7kW fuel cell powerpack

	Power	Hydrogen Fuel Cell
	System Weight	9.6kg (21.2lbs)
	Max. Take-off Weight	24.9kg (54.9lbs)
	Dimension (W x L x H)	1,850 x 1,850 x 815mm (72.8 x 72.8 x 32 inches)
	Max. Payload	3kg (6.6lbs) w.10.8L
	Flight Time (with 1.5kg payload) Flight Time	100min 120min (no payload)

Fuel Cell Powerpack


DMI’s fuel cell powerpack provides clean energy and enable hydrogen multicopter drones to fly for 2 hours. Also, fuel cell powerpack can be used continuously by changing hydrogen cylinders which takes less than 5 minutes



DT30X




Hexacopter drone optimized for harsh environment
powered with 2.7kW fuel cell power module

	Power	Hydrogen Fuel Cell
	System Weight	21kg (46.2lbs)
	Max. Take-off Weight	24.9kg (54.9lbs)
	Dimension (W x L x H)	1,600 x 1,600 x 675mm (63 x 63 x 26.5 inches)
	Max. Payload	4kg (8.8lbs)
	Flight Time	150min (no payload)

DJ25



VTOL drone optimized for longer flight time powered
with 1.3kW fuel cell power module

	Power	Hydrogen Fuel Cell
	System Weight	22kg (48.5lbs) w. 12L
	Max. Take-off Weight	31kg (68.3lbs)
	Dimension (W x L x H)	2,090 x 4,280 x 686mm (6.8 x 14.0 x 2.2 ft)
	Max. Payload	4kg (8.8lbs)
	Flight Time	330min (no payload)



Software & Communications

DMI provides integrated software solutions, and next generation communication module



Autonomous Flight & Data Security

DMI's Web-based GCS supports autonomous mission flights. Also, DMI hydrogen drones can provide data security with optional security module.

Communication Module

Compact, light-weight communication module that is suited for drones. Our communication module supports safe flight including detect-and-avoid in emergencies.

System Weight	125g (0.3lbs)
Dimension (W x L x H)	110 x 50 x 25mm (4.3 x 2.0 x 1.0 in)
LTE	CAT 4 ~ CAT 12 (3G Fall-back)
RF	Supported with external module
Flight Control	GCS + detect-and-avoid
HDMI	1080p H.264(2021), H265(2023)

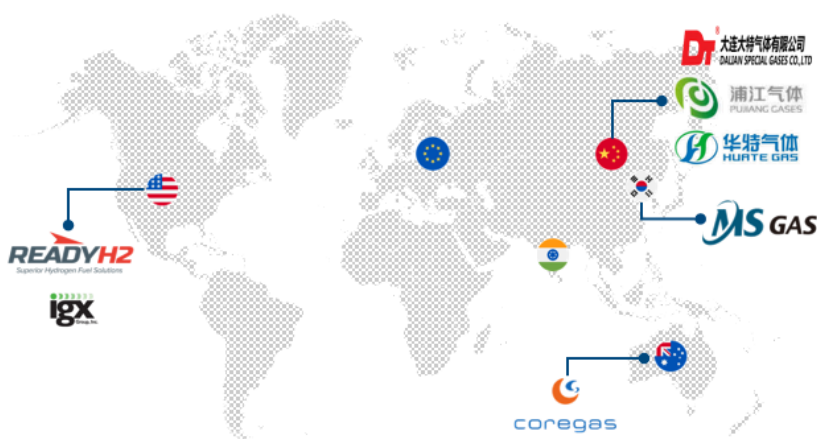




Hydrogen Solution

Reliable Hydrogen Cylinder

Type	: Type4
Volume	: 10.8L(365oz), 7L(237oz)
Weight	: 4.3kg(9.5lb), 3.2kg(7.1lb)
Service Pressure	: 0~350bar(0~5.076psi)
Certification	: ISO11119-3(CSA), AC418(KOR), DOT(USA), TPED(EUR), WorkSafe(AU)



Global Hydrogen Supply Network

DMI has developed global hydrogen supply network with our partners around the world.

Mobile Hydrogen refueling equipment



Compact size and lightweight for manual and automatic operation

Size	: 80cm x 168cm x 195cm
Charging pressure	: 0 bar ~ 400 bar
Charging speed	: Over 50Nlpm (room temperature)
Charging method	: Air driven
Power consumption	: Under 2kWh



Use Cases

Hydrogen Drones are being used in various applications



Real-time, Long-range Delivery

Hydrogen drones can deliver various packages up to 100km (62miles) round trip in real-time

Survey & Mapping

With one flight mission, hydrogen drones can finish mapping 4 times larger area compared to battery drones



Energy Inspection

Hydrogen drones are suitable for large-scale wind & solar power plant inspections and long-range oil & gas pipeline inspections



Service & Lease

DMI provides service & lease program to support customers in different industries



SERVICE

DMI provides customized services for the needs of customers in various industries



LEASE

Hydrogen drones are available for short-term leases if initial purchase is burdensome

Who is DOOSAN?

Doosan is a company with over 120 years of history and 16.5 billion USD group Rev. but has been fast transforming itself for continuous growth. Doosan is a global leading player in Infrastructure Support Business (ISB) such as fuel cell, power plant, desalination plant, construction & compact equipment and construction & engineering



Sponsorship



| 38 overseas branches and 120 overseas corporations |



HEADQUARTERS

10. Suji-ro 112 beon-gil, Suji-gu, Yongin-city, Gyeonggi-do, 16858, South Korea
www.doosanmobility.com

CHINA

1201 East Dingxin Building, Nanshan District, Shenzhen, China
China.dmi@doosan.com

US Sales

Chris Blaire
Chris.blair@doosan.com

Power for Tomorrow

Doosan Mobility Innovation

DOOSAN



Hydrogen

Why Hydrogen?



Safe

There is no danger of explosion as hydrogen which is the lightest element on Earth, evaporates the moment it is leaked



Clean

Hydrogen is an eco-friendly energy for a sustainable planet and does not emit greenhouse gases



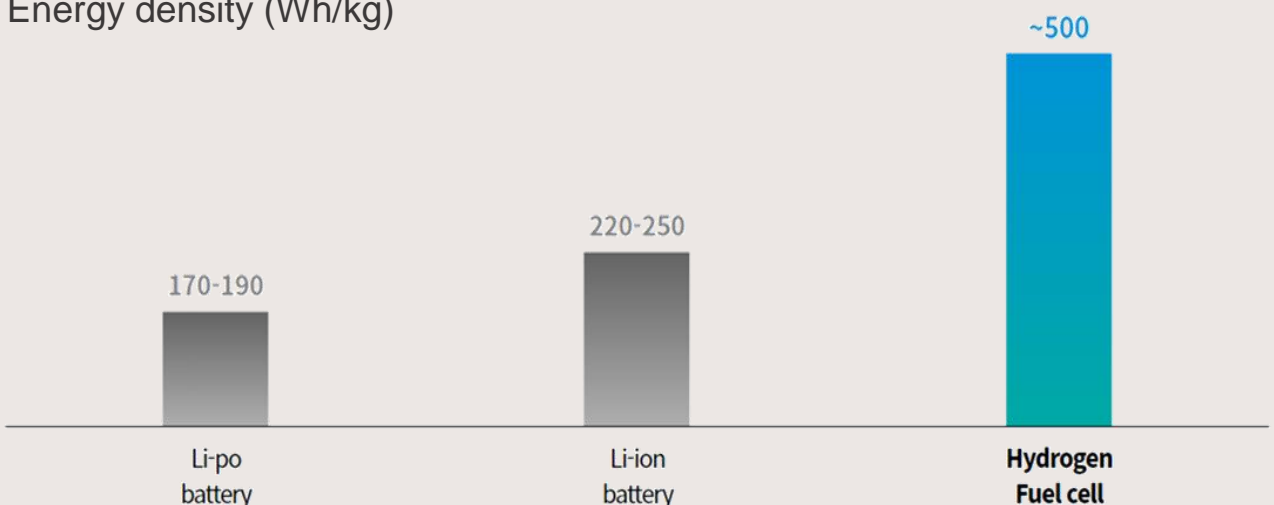
Efficient

Hydrogen is easy to store and transport on a large scale, and provides higher energy efficiency

Hydrogen vs Battery

Hydrogen fuel cells have higher energy density than lithium batteries, enabling long-term flight and operation

Energy density (Wh/kg)

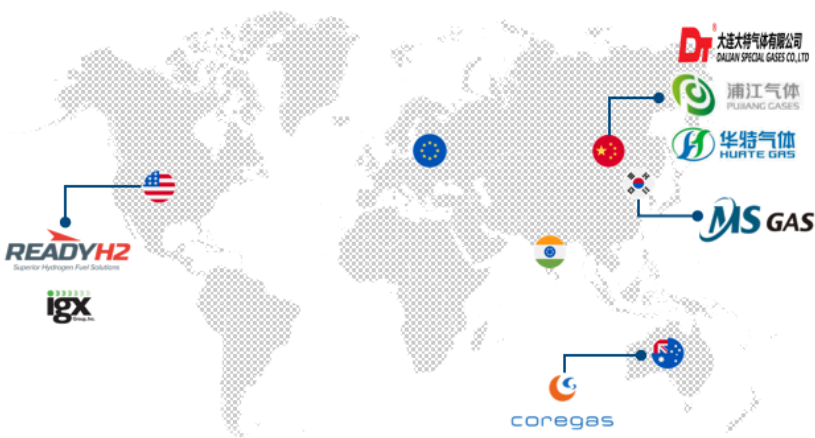




Hydrogen Solution

Reliable Hydrogen Cylinder

Type	: Type4
Volume	: 10.8L(365oz), 7L(237oz)
Weight	: 4.3kg(9.5lb), 3.2kg(7.1lb)
Service Pressure	: 0~350bar(0~5.076psi)
Certification	: ISO11119-3(CSA), AC418(KOR), DOT(USA), TPED(EUR), WorkSafe(AU)



Global Hydrogen Supply Network

DMI has developed global hydrogen supply network with our partners around the world.

Mobile Hydrogen refueling equipment



Compact size and lightweight for manual and automatic operation

Size	: 80cm x 168cm x 195cm
Charging pressure	: 0 bar ~ 400 bar
Charging speed	: Over 50Nlpm (room temperature)
Charging method	: Air driven
Power consumption	: Under 2kWh



Air-cooled Fuel Cell

Ultra-light fuel cell for a wide range of small and medium sized mobility

FEATUERES



Ultra-light

Ultra-light powerpack optimized for aviation



Long Flight

High energy density enables long flight



Reliability

High quality through mass production



Certification

Obtained Korea's first KGS certification



Scalability

Available for a wide variety of mobility



Battery Hybrid

Enhance safety with battery hybrid

FUEL CELL STACK



FUEL PROCESSING SYSTEM



AIR PROCESS SYSTEM



THERMAL MANAGEMENT SYSTEM



Water-cooled Fuel Cell

High efficiency fuel cell for a wide range of medium and large sized mobility

FEATUERES



Lightweight

Lightweight based on aviation experience



Energy Efficiency

Higher energy efficiency compared to internal combustion engines



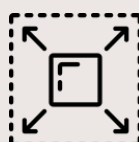
Durability

Long-term use with consistent quality



Energy Density

Advantageous for large scale mobility based on high energy density



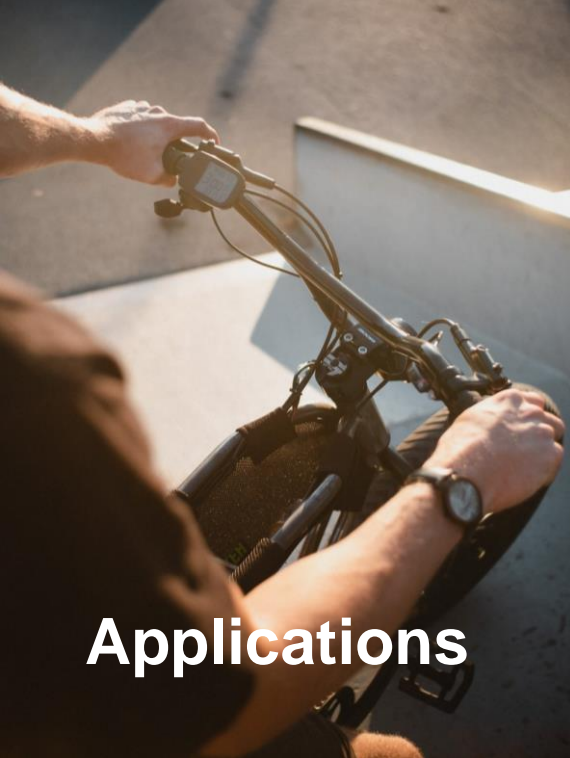
Scalability

Available for a wide variety of mobility









Battery Hybrid

Respond to emergencies with battery hybrid





Applications

Air-cooled

Air Mobility	Multicopter		<p>Hydrogen drones can fly for more than 2 hours based on their high energy density (VTOL drones can fly for more than 5 hours) Currently, hydrogen drones are being used for various industrial purposes.</p>
	VTOL		
	Helicopter		
Ground Mobility	UGV (Robot)		Based on a compact and lightweight power pack, longer driving is possible
	E-Bike (Cargo)		Dramatic increase in driving time and charging within 2 minutes when driving outdoors
	Backup Power		With low noise and light weight, it can be easily used in various places.

Liquid-cooled

Air Mobility	UAM (Cargo Drone)		Long-distance flight is possible based on high energy density compared to batteries
Ground Mobility	Forklift		Ideal for heavy and long-distance transportation, ensure minimum downtime with short charging

Product Specifications



DP030M2S

Rated Power	2.7kW
Peak Power	5.0kW
Hybrid Battery Type	2,600mAh x 2
Ambient Operation Temperature	-5~40°C
Output Voltage	50V(Rated Power)
Stack Weight	3.6kg(1.8kg x 2) 7.9lb (4lb x 2)
Total Powerpack Weight	12.6kg(27.8b)
Dimension(L x W x H) (+H2 Tank 10.8L)	613 x 590 x 290 mm (24.1 x 23.2 x 11.4 in)



DM030M2s

Rated Power	2.7kW
Peak Power	5.0kW
Hybrid Battery Type	2,600mAh x 2
Ambient Operation Temperature	-5~40°C
Output Voltage	50V(Rated Power)
Total Weight	11.1kg(24.5lb)
Dimension(L x W x H) (+H2 Tank 10.8L)	600 x 529.5 x 322 mm (23.6 x 20.8 x12.7 in)



DM015

Rated Power	1.25kW
Peak Power	3.0kW
Hybrid Battery Type	1,800mAh x 1
Ambient Operation Temperature	0~40°C
Output Voltage	50V(Rated Power)
Total Weight	8.0kg(17.6lb)
Dimension(L x W x H) (+H2 Tank 10.8L)	275 x 260 x 170 mm (10.8 x 10.2 x 6.7 in)

Who is DOOSAN?

Doosan is a company with over 120 years of history and 16.5 billion USD group Rev. but has been fast transforming itself for continuous growth. Doosan is a global leading player in Infrastructure Support Business (ISB) such as fuel cell, power plant, desalination plant, construction & compact equipment and construction & engineering



Sponsorship

DOOSAN

HEADQUARTERS

10. Suji-ro 112 beon-gil, Suji-gu, Yongin-city, Gyeonggi-do, 16858, South Korea
www.doosanmobility.com

CHINA

1201 East Dingxin Building, Nanshan District, Shenzhen, China
China.dmi@doosan.com

US Sales

Chris Blaire
Chris.blair@doosan.com