

# 수소충전소 설계, 시공 및 건설현황

2020. 8



(주) 제아이엔지

민 정기(이사)



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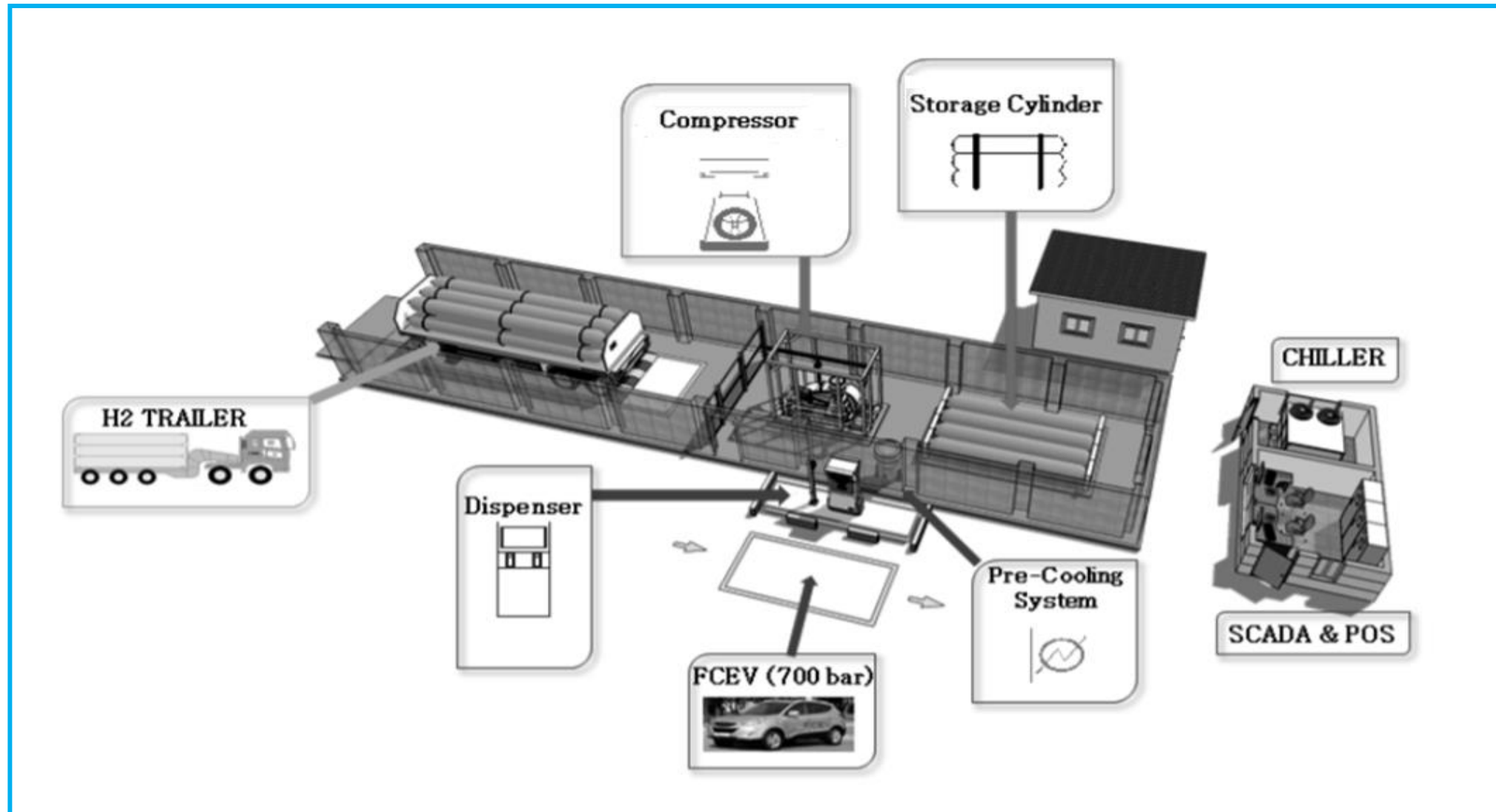
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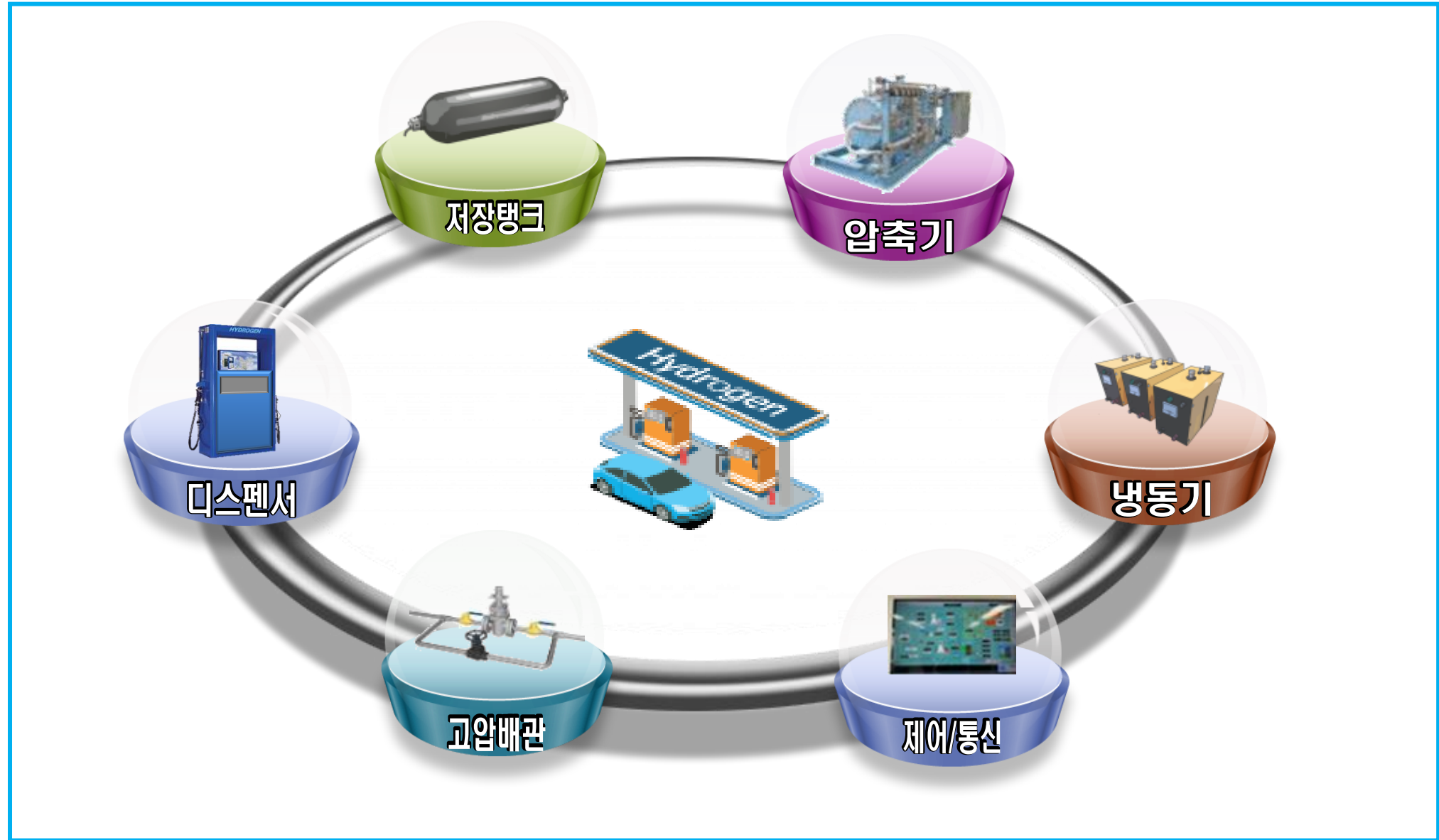


# I . 수소충전소 설계 & 시공기술

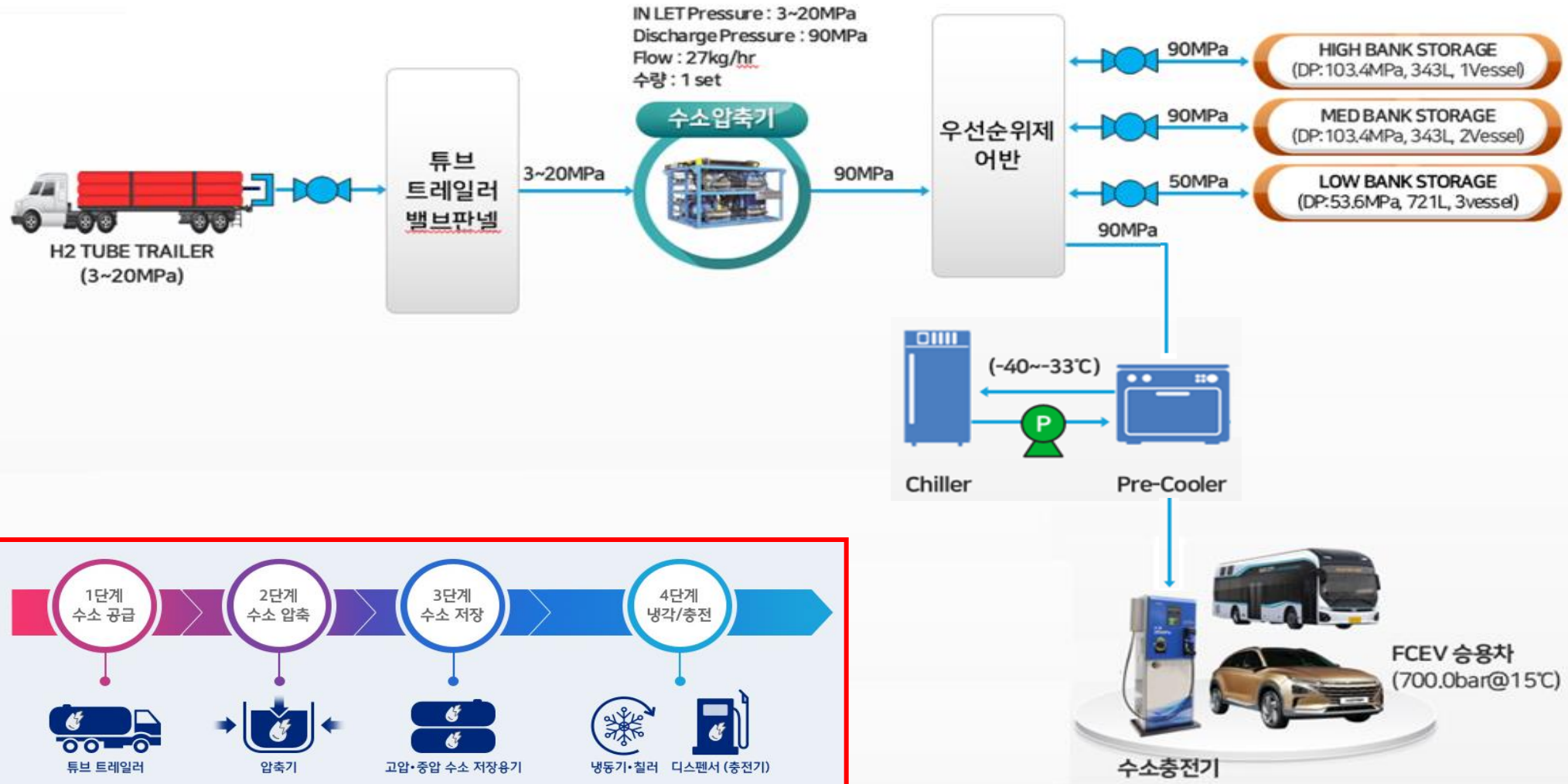




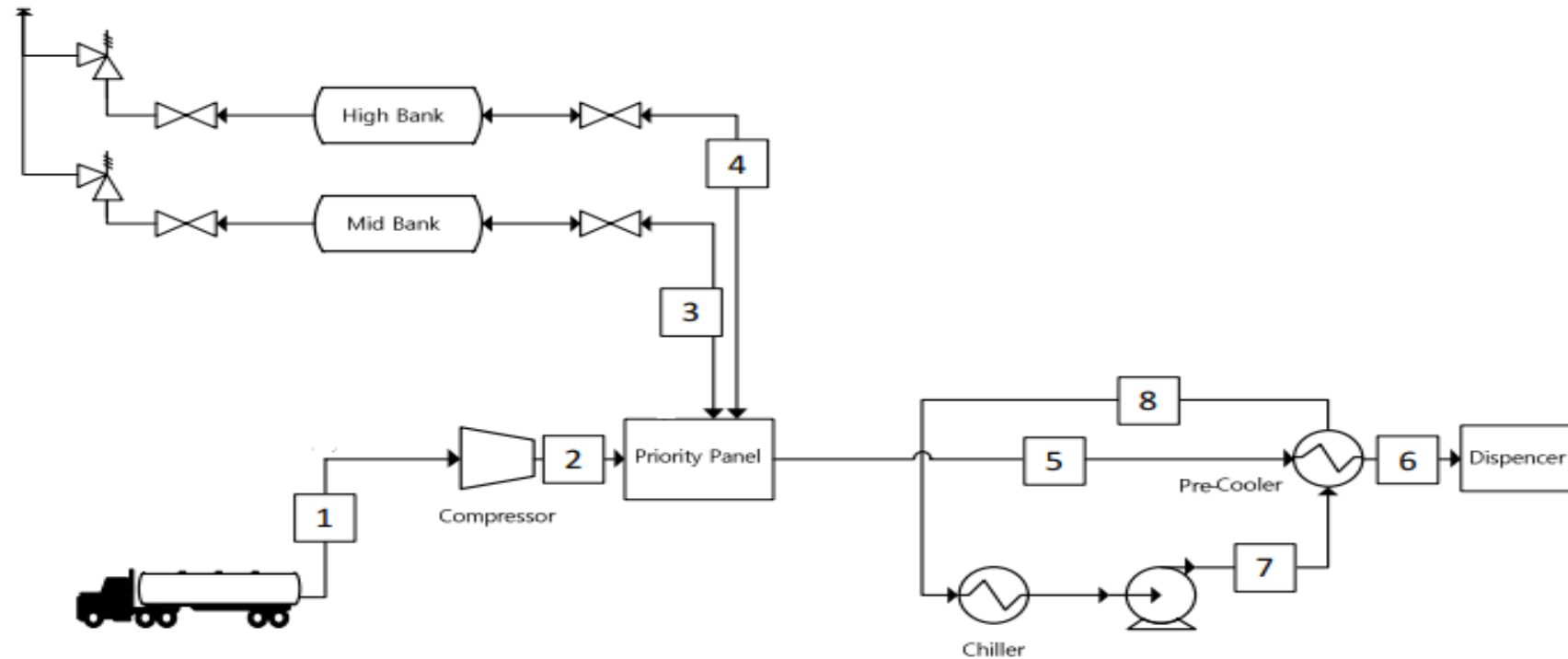




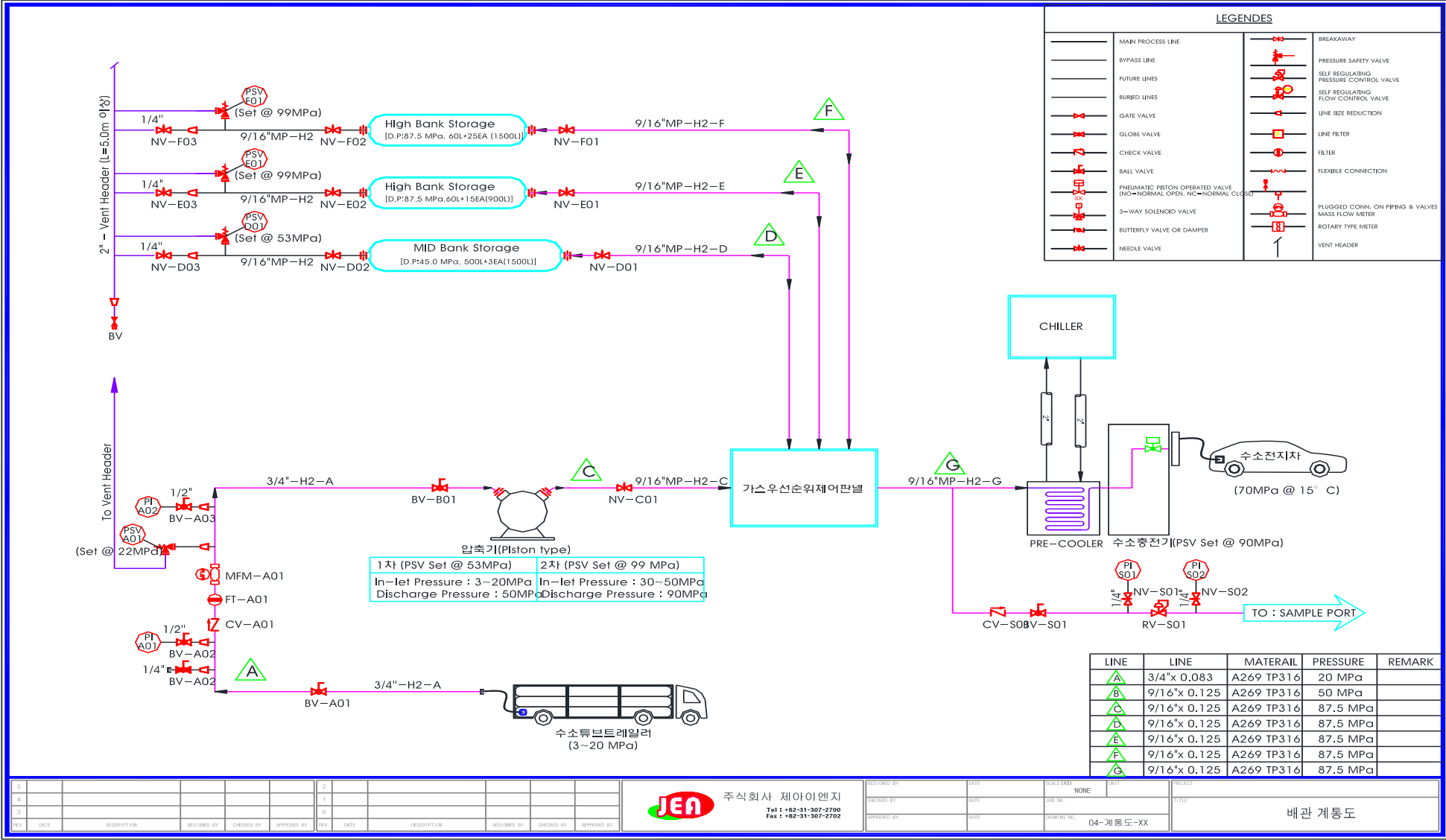
## 가스 압축식 수소충전소



## < Process Flow Diagram >

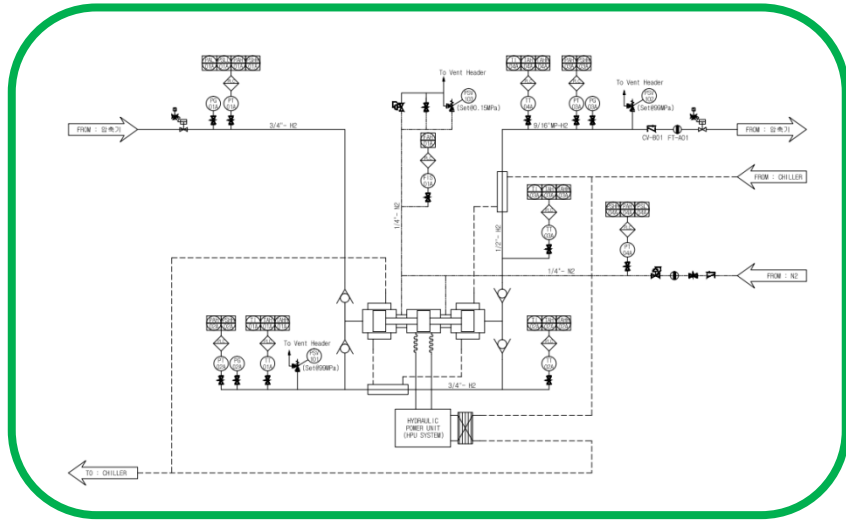


Stream No.		1	2	3	4	5	6	7	8
Fluid		H <sub>2</sub>	H <sub>2</sub>	H <sub>2</sub>	H <sub>2</sub>	H <sub>2</sub>	H <sub>2</sub>	R507	R507
Flow rate	kg/min	0.84	0.84	0.84	< 3.6	< 3.6	< 3.6	-	-
Temp.	°C	20	< 40	< 40	< 40	< 40	-40~-33	-50	< -33
Press.	MPa	3~30	87.5	< 50	< 87.5	70	70	0.3	0.3

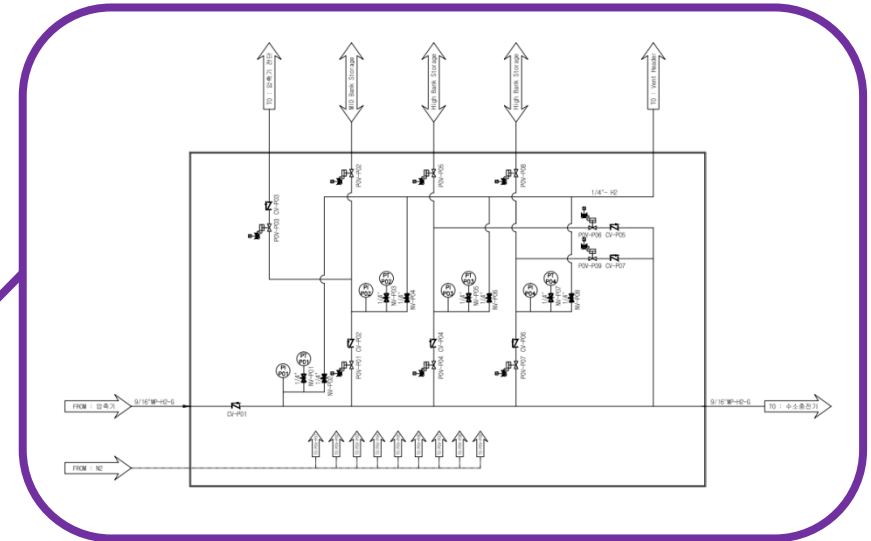
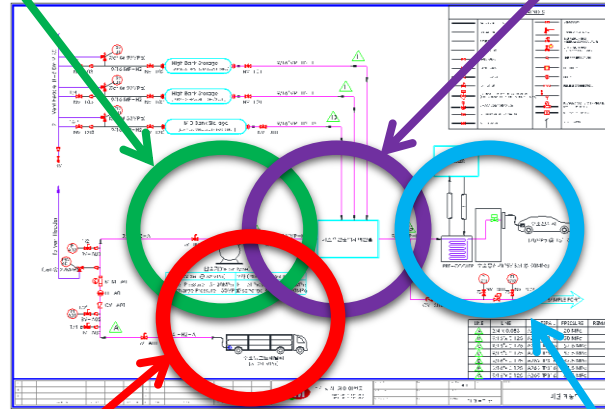




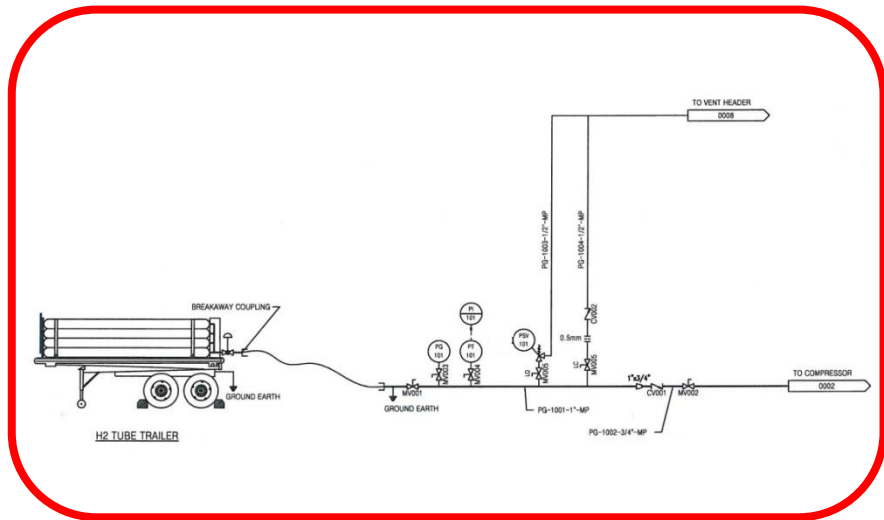
# 수소충전소 상세 P&ID



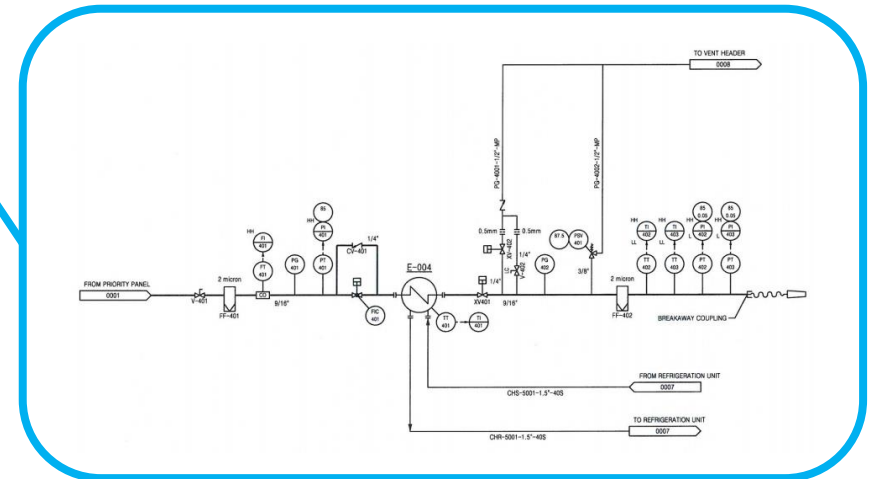
Compressor



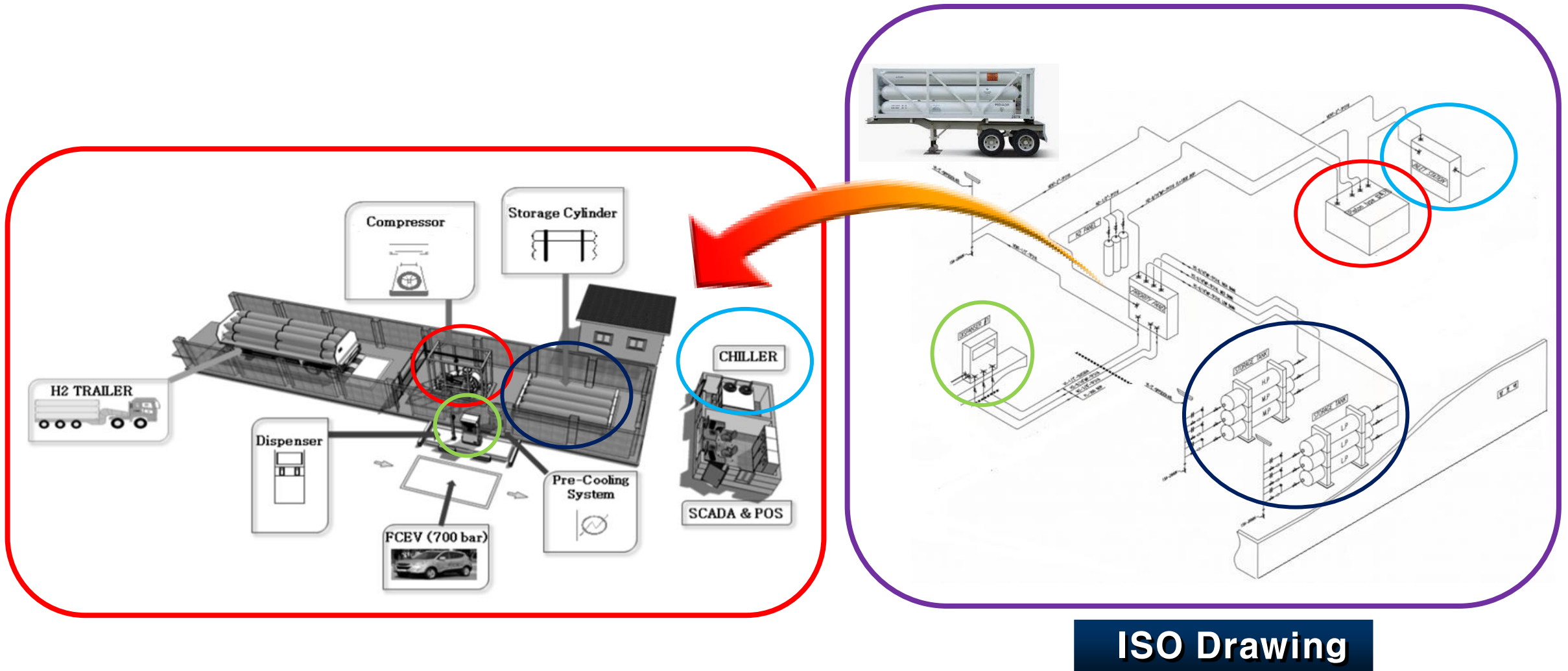
P/Panel

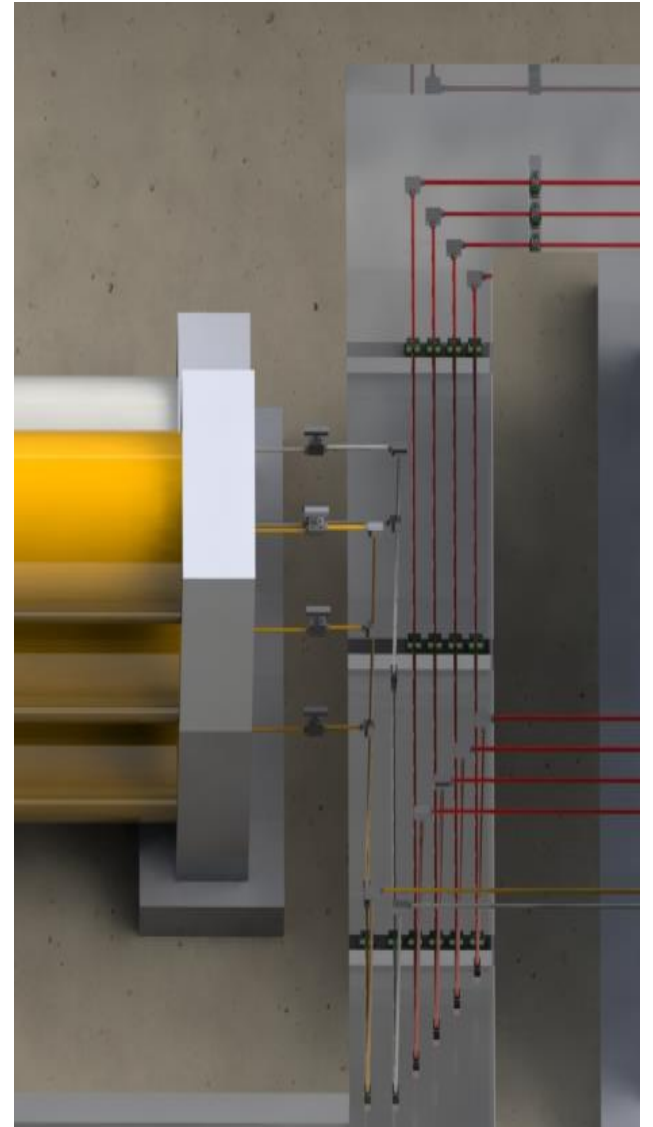
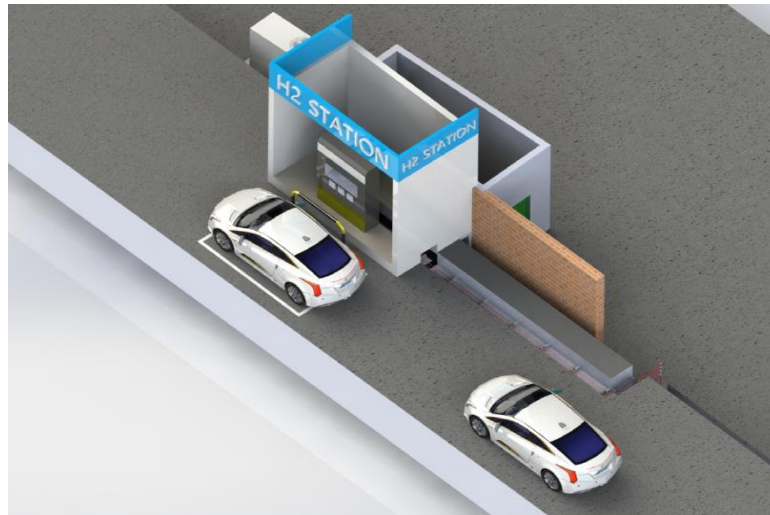
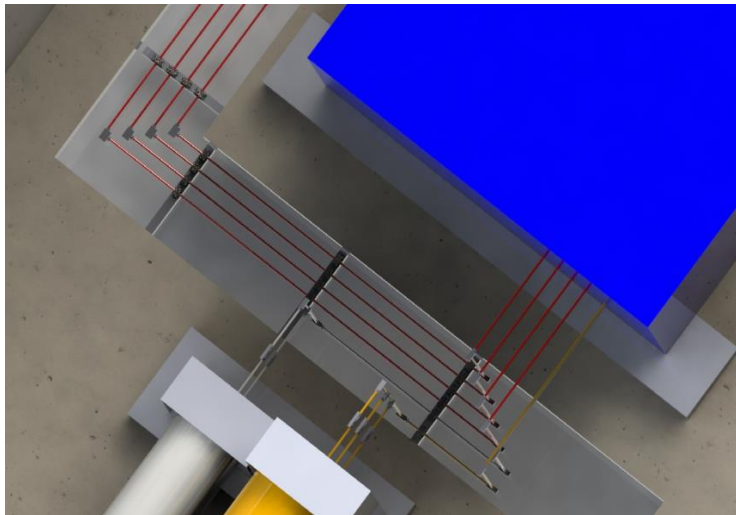
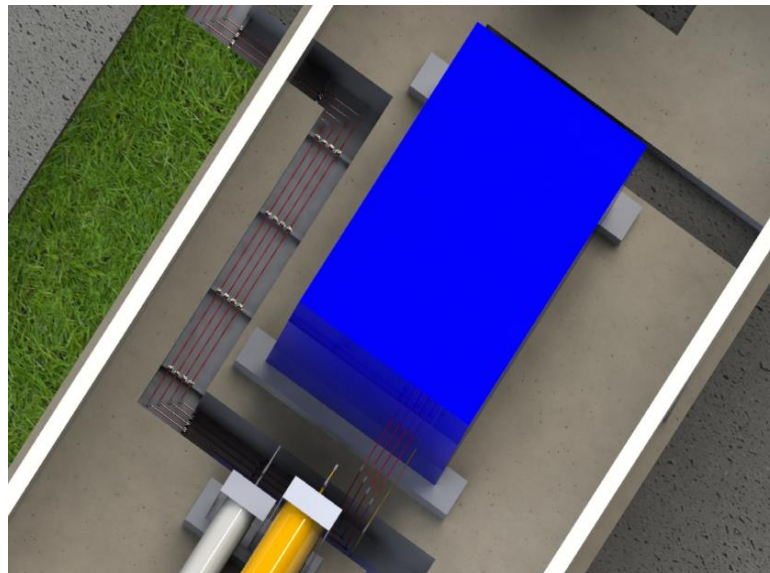
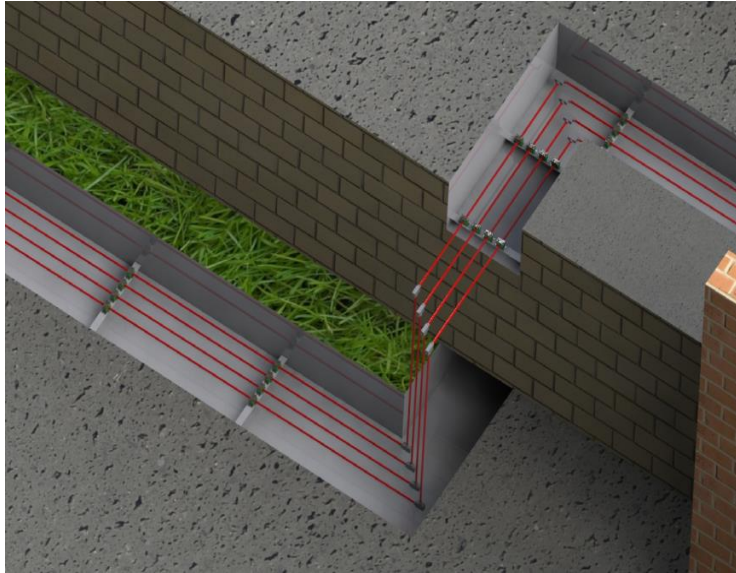


T/T → Compressor



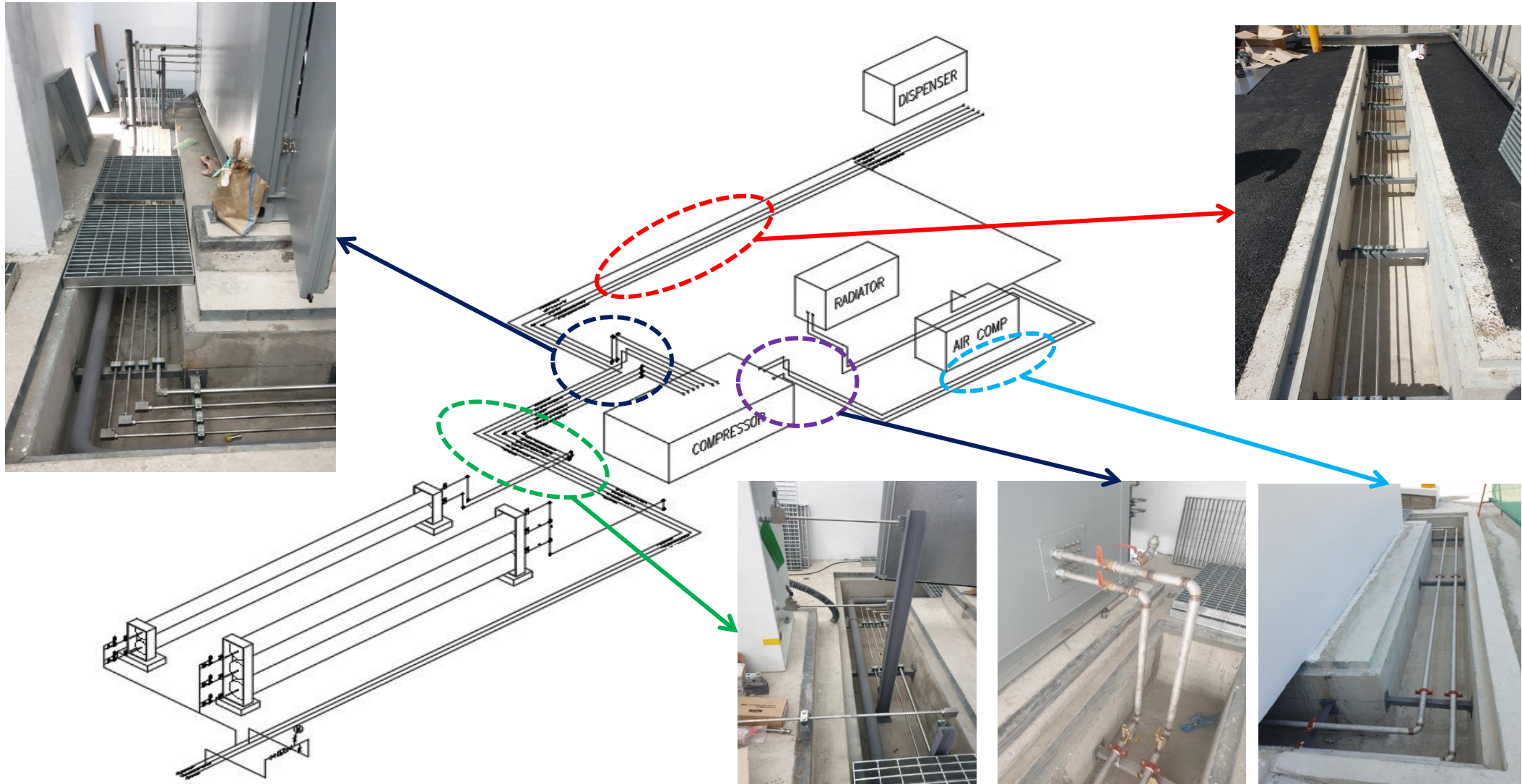
P/Panel → Dispenser







## 수소충전소 시공 현장(예시)



## 장비반입 현장 설치 공사





# Coning & Threading Tool Machine

수소 충전소를 위한 전용 TOOL MACHINE

*Maxpro Technologies*  
Coning and Threading Machine

Efficient, single ended operation makes the  
**MAXPRO TECHNOLOGIES CONING  
AND THREADING MACHINE**  
the NEW  
"state of the art" technology.





# Valves & Fittings for Ultra High-Pressure Hydrogen Gas

**SUS316 Standard (Possible to make by the ASTM A479 316/316L also)**  
**SUH660 available also**  
Please refer to the material list of each valve equipment for parts.



Korea-Japan

**MAXIMATOR®**  
 Maximum Pressure.

Germany



USA



USA

A tall, white, tapered lighthouse stands on a grassy hill. At its base is a small, white, single-story building with a dark roof and two chimneys. The foreground is filled with dry, brown grass. The sky is a mix of blue and orange, with wispy clouds, suggesting a sunset or sunrise. A semi-transparent white banner with a blue border is positioned across the middle of the image, containing the title text.

## II. 수소충전소 주요부품 기술개발 현황

HYDRO-PAC

USA

**Hofer**  
NEUMAN & ESSER GROUP

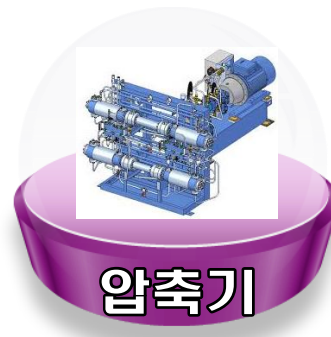
Germany

**Linde**

Germany

**pdC**  
MACHINES.COM

USA



**nel**

Norway

**GTC**

Korea

THE POWER OF IDEAL  
**한국유수압**

Korea

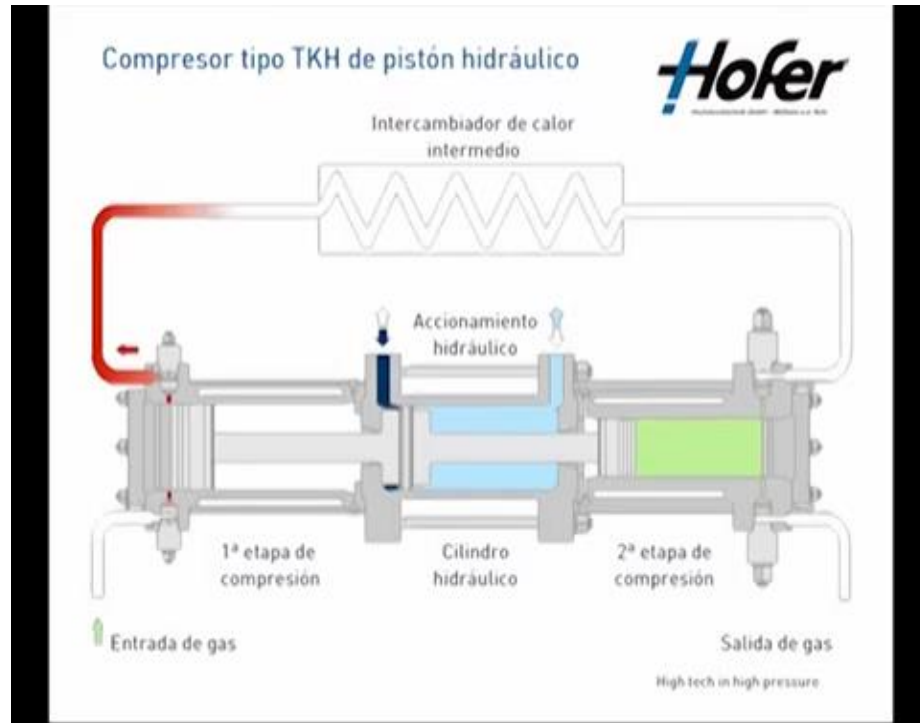
**KwangShin**  
Dependable Compressors

Korea

**Haskel**

Ireland





피스톤 방식



다이어프램 방식



Canada

nel

Norway



Germany

**TATSUNO**  
In Innovation, In Reliable Services

Japan



**HYOSUNG** HEAVY INDUSTRIES

Korea

**KwangShin**  
Dependable Compressors

Korea

**샘찬에너지(주)**

Korea

Technology Corporation  
**Valmax**

Korea



Korea



Germany



Korea



UK



USA



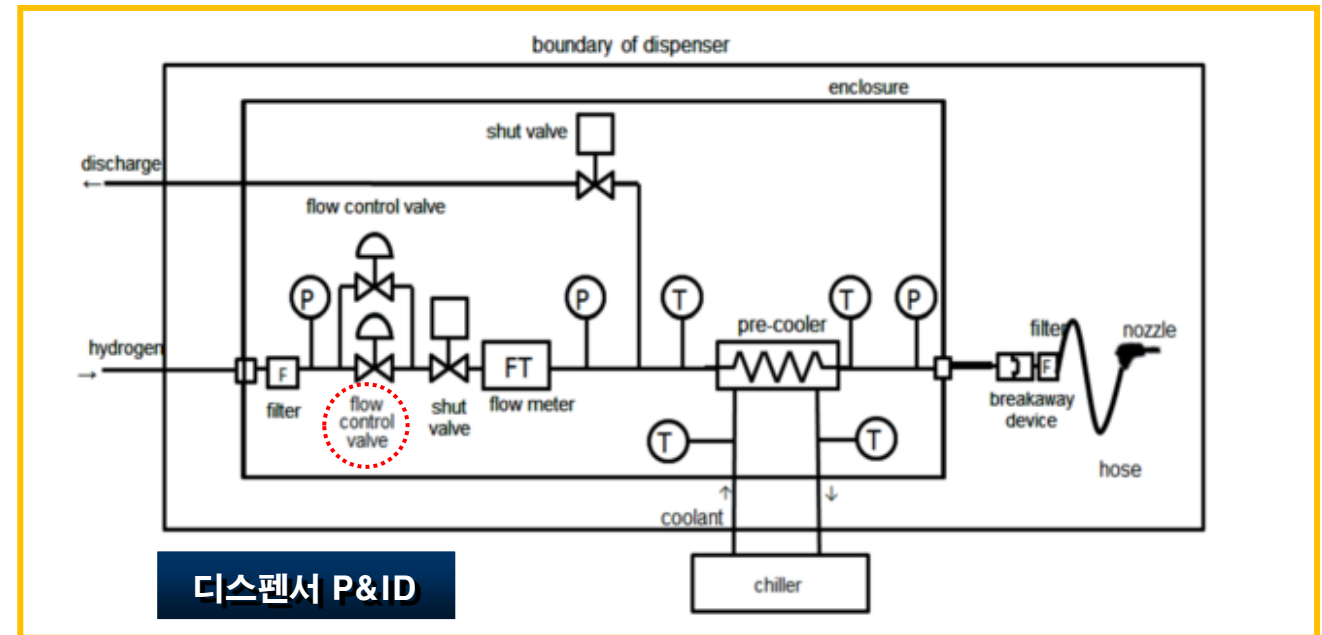
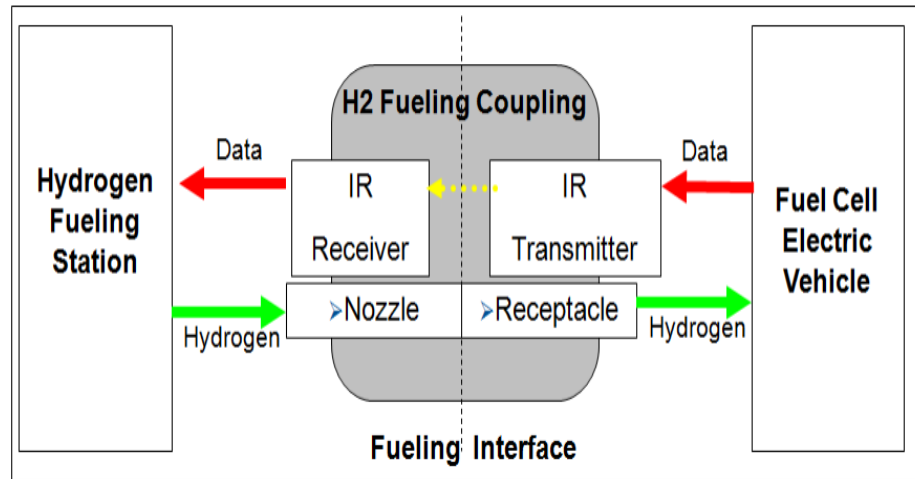
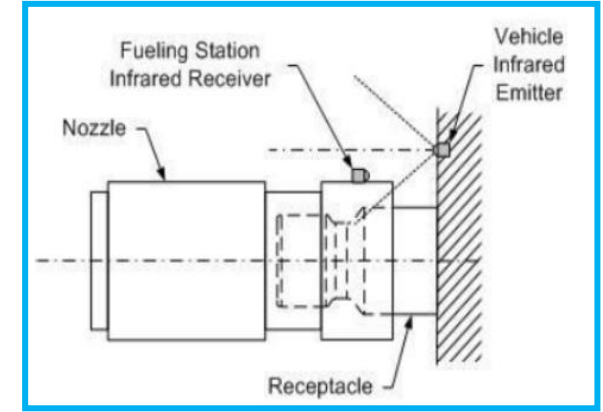
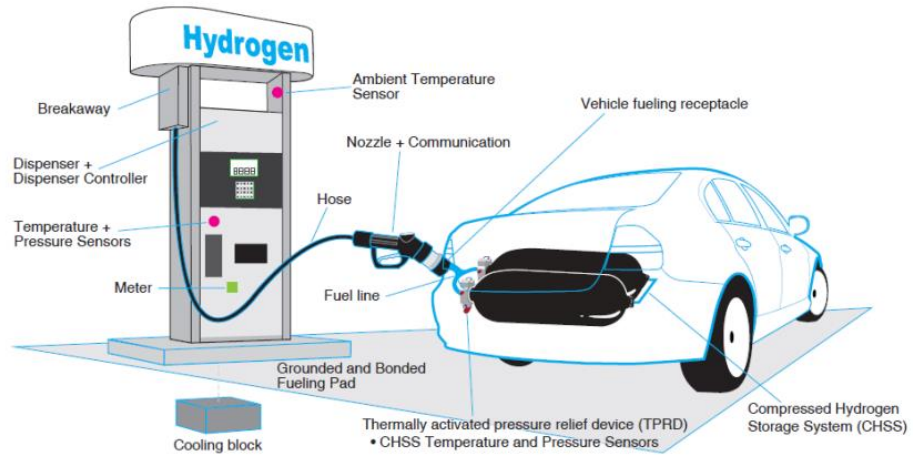
Germany

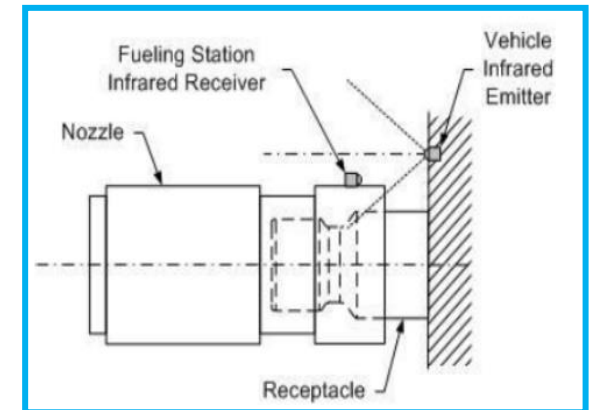
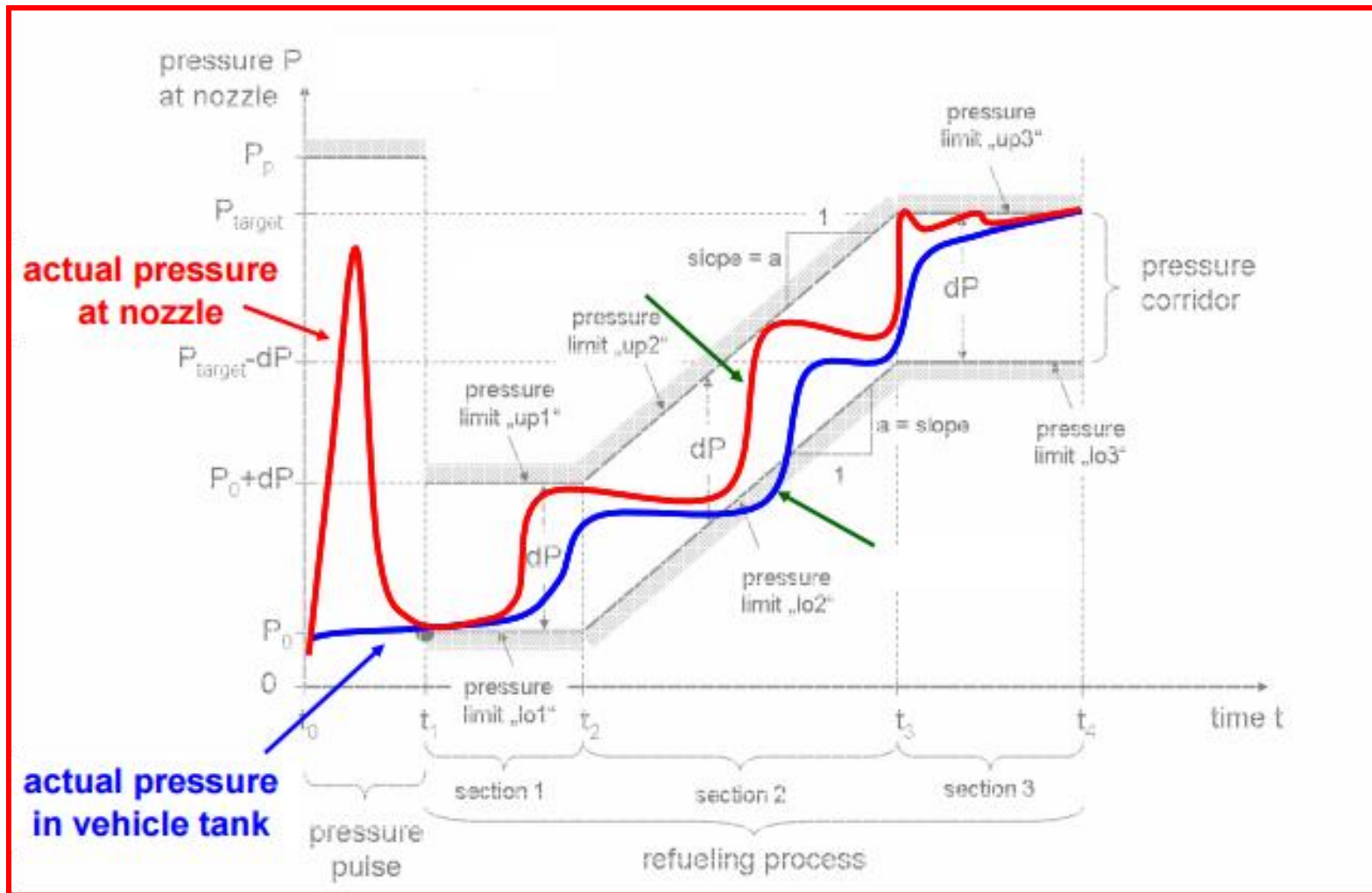


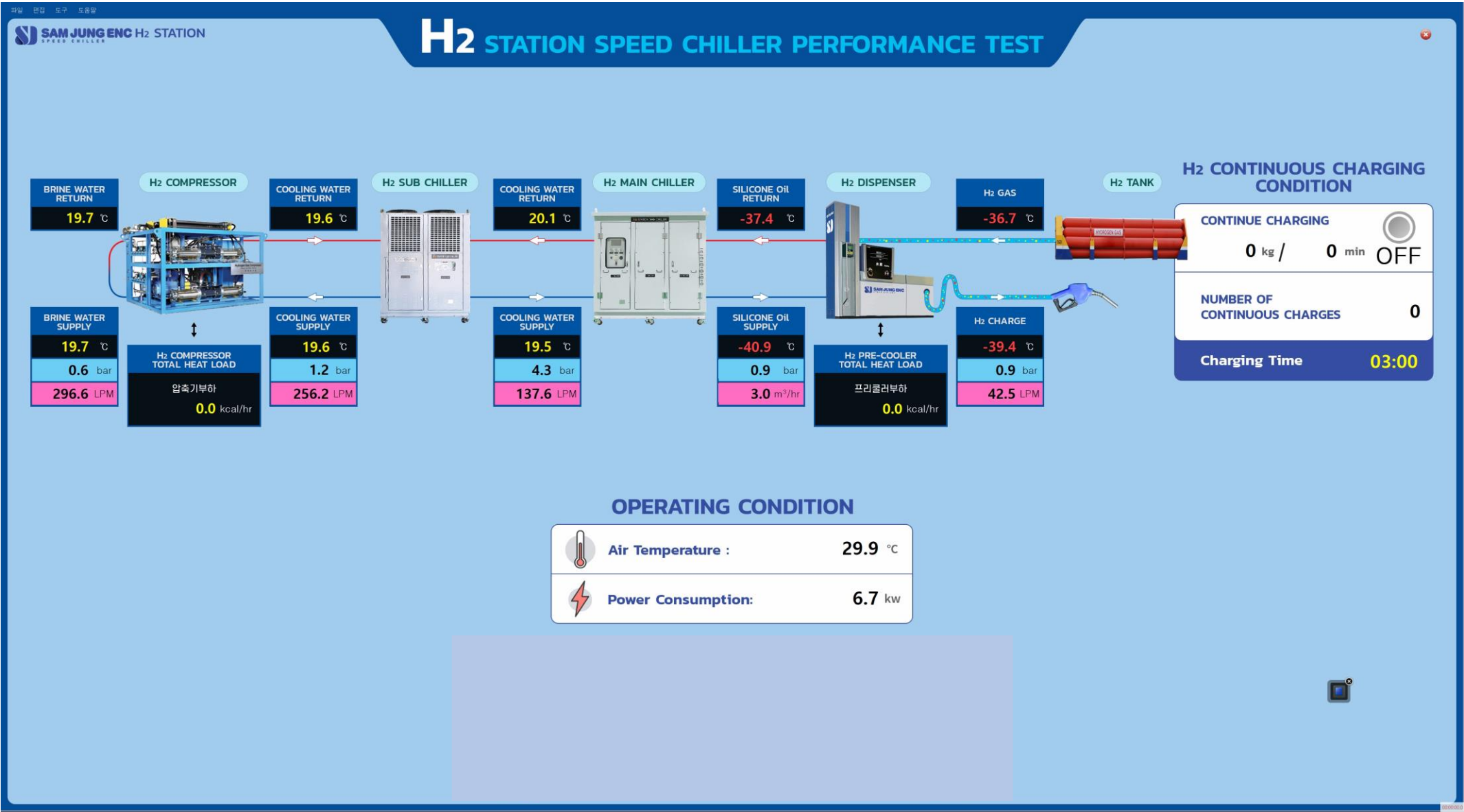
Ireland



# 충전 프로토콜(SAE J2601 & SAE J2799)







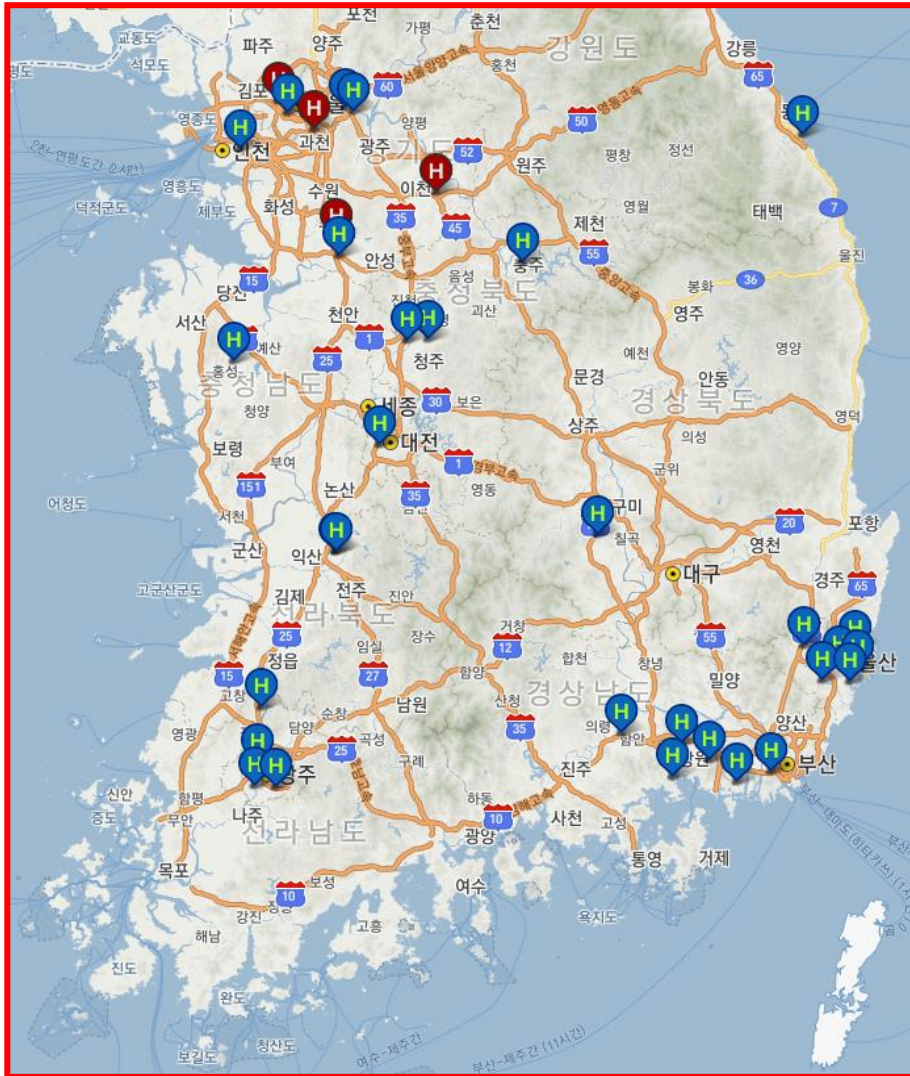


A wide-angle, high-altitude photograph of Earth from space. The image shows a vast expanse of the planet's surface, with a prominent curved horizon line. A bright, glowing light source, likely the sun, is visible on the left side, creating a strong lens flare and illuminating the scene. The Earth's surface is a mix of dark blue oceans and green landmasses, with some white patches indicating snow or ice. The overall atmosphere is a deep, clear blue.

### III. 국내외 수소충전소 건설현황

# 국내 수소충전소 설치 운영현황

(2020. 8 기준)



H2KOREA 자료제공

지역

운영상태

상호

상태

☒ 운영중
 ☐ 보수중

☐ 지도 화면 내 검색
 

조회

검색결과 총 33건

상호

매암수소충전소(생산차)

주소

울산 남구 장생포고래로 29번길 5

연락처

070-4421-1688

상호

옥동수소복합충전소

주소

울산 남구 남부순환도로 465

연락처

052-265-5540

상호

경동수소복합충전소

주소

울산 북구 북부순환도로 1165

연락처

052-288-0610

상호

신일복합충전소

주소

울산 울주군 웅촌면 웅촌로 490

연락처

052-225-1500

상호

그린복합충전소

주소

울산 울주군 오사읍 오산

지역

운영상태

상호

상태

☐ 운영중
 ☒ 보수중

☐ 지도 화면 내 검색
 

조회

검색결과 총 4건

상호

삼암수소충전소

주소

서울 마포구 하늘공원로 108

연락처

02-3151-0336

상호

양재수소충전소

주소

서울 서초구 바우외로12길 73

연락처

02-2058-1351

상호

H안성수소충전소(서울방향)

주소

경기 안성시 경부고속도로 372-1

연락처

031-664-4096

상호

고속도로여주(강릉)수소충전소

주소

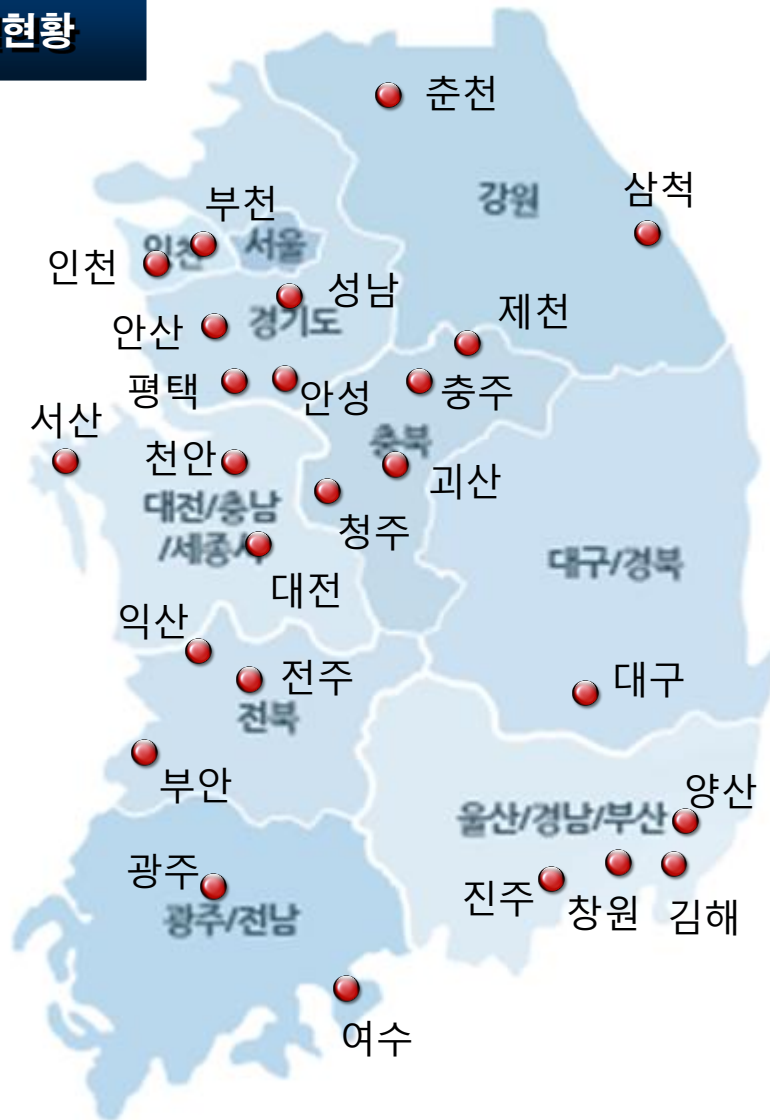
경기 여주시 가남읍 여주남로 722

연락처

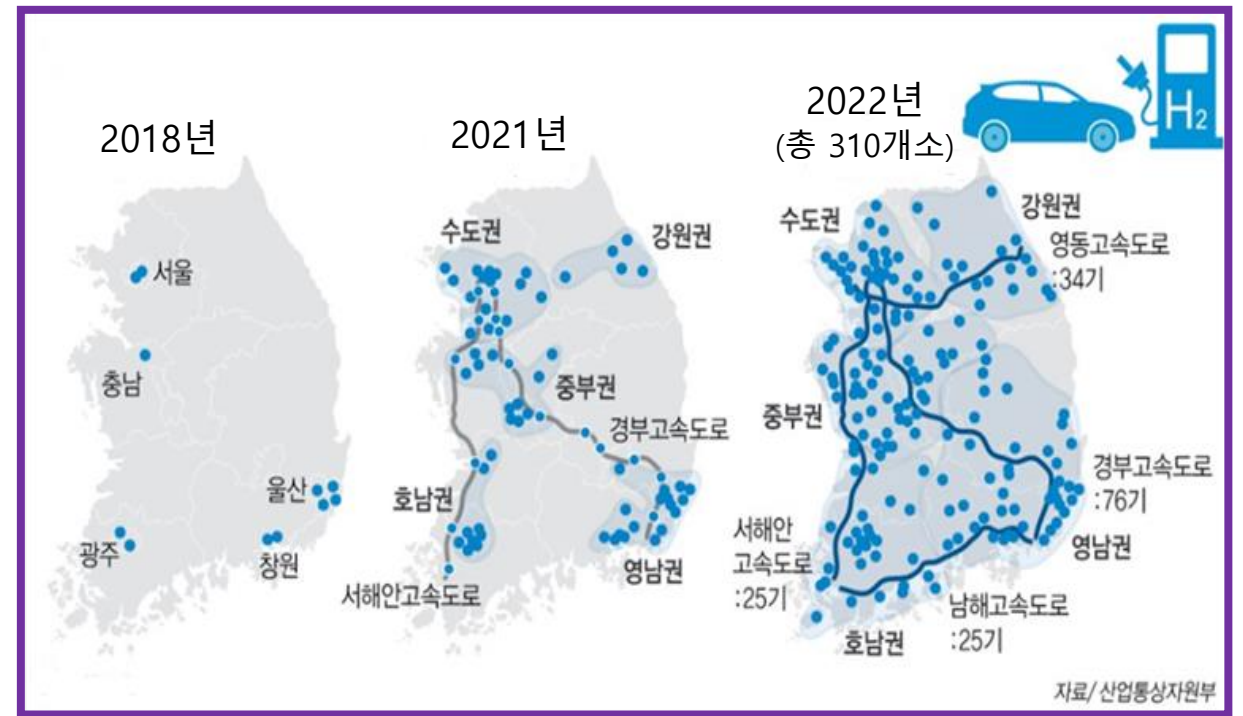
031-881-6130



## 2020년 건설현황

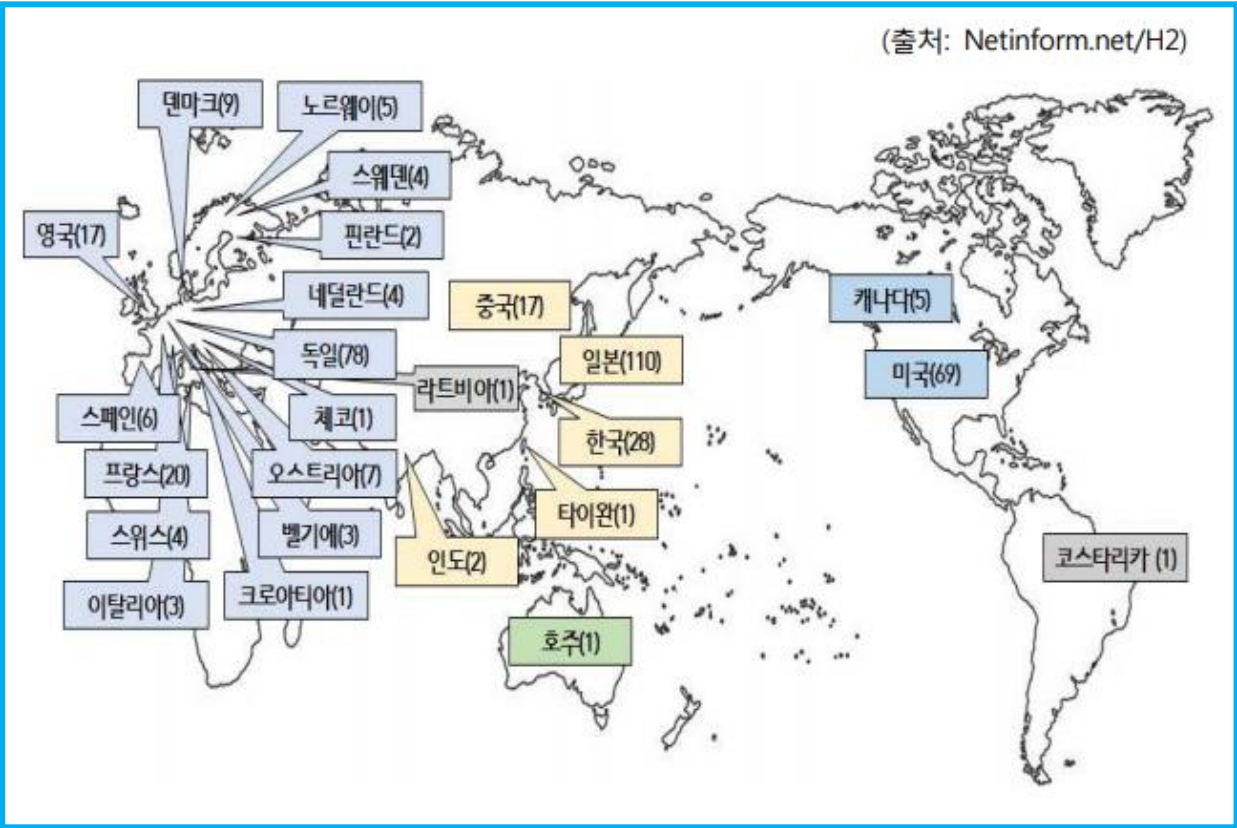


## 국내 보급 및 설치예정 현황





전세계 수소충전소 운영 현황(총 402기/2019. 7 기준)



주요국의 수소차 및 수소충전소 보급계획

구분		2022년	2030년
	수소차	4만대	80만대
	충전소	160개소	900개소
	수소차	10만대	100만대
	충전소	100개소	-
	수소차	5000대	100만대
	충전소	100개소	1000개소
	수소차	65만대('23)	180만대
	충전소	400개소('23)	1,000개소

(출처:대한석유협회)

# 감사합니다



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민 정기(이사/연구소장)

HP) 010-6737-6165

E-mail) kr1233878@naver.com