

구 매 규 격 서

COMMODITY DESCRIPTION

품목번호 Item No.	관세분류번호 HSK No.	정부물품분류번호(8자리) Korean Government Commodity Classification Code(eight-digit)	품 명 Description	단위 Unit	수량 Q'ty
1	-	-	4WD Chassis Dynamometer	System	1

I. 용도(End-user's Use)

1. The chassis dynamometer is designed to test both 2 wheel drive(2WD) and 4 wheel drive(4WD) with 2-axle vehicles. The system can be operated in the following control modes: Force control, Power control, Speed control, Acceleration Control, Road Load Simulation, Throttle pedal control, Manual control, Engine RPM control.
2. The chassis dynamometer is installed to a part of Vehicle Climatic Chamber(VCC) that can simulate the following environmental conditions: Temperature(-40°C~60°C), Humidity(5%~95% RH), Solar Simulation(max. 1,200W/m²), Wind Simulation(150kph). Therefore 4WD chassis dynamometer can be synchronized with VCC and be operated under above mentioned environmental conditions.
3. VCC is designed to conduct the following driving cycle test defined by the US Environmental Protection Agency(EPA) and the corresponding Korean regulations for the development of energy saving parts for the future vehicle. i.e. City Driving(FTP-75), Highway Driving(HWFET), Aggressive driving(SFTP US06) and optional air conditioning test(SFTP SC03). Therefore 4WD chassis dynamometer must be feasible for the above mentioned driving conditions including special application testing of vehicle HVAC system, engine cooling, defrost.

II. System Configuration

1. 4WD chassis dynamometer
 - AC motors (2 sets)
 - AC drive unit for AC motors
 - Two ABB ACS800 IGBT Regen Drive Cabinets
 - 4 Rollers and Roller set covering
 - Dynamometer calibration system
 - Interface for Vehicle Climatic Chamber control system
 - Interface for automatic ECU and TCU calibration system
 - Throttle actuator & brake pedal actuator
 - Stand alone Driver's aid package with wireless touchscreen interface
2. Others
 - System Installation

- Project management
- Inspection manual
- Training program
- Documentation

III Technical Specifications

1. Overall size (W x L x D):
approx. 7,000mm x 7,700mm x 1,700mm
2. Roller diameter:
1,219.2mm, should meet or exceed ANSI/ISO1940 G.5 for dynamic balance of roll
3. Distance between outer roller edges:
2,300mm ~2,700mm
4. Distance between inner roller edges:
800mm ~ 900mm
5. Max. axle load:
2,500kg or more
6. Max. speed:
250km/h
7. Base inertia per axle:
approx. 1,200kg
8. Inertia simulation range:
454kg ~ 3,500kg (4WD)
150kg ~ 3,500kg (2WD)
9. Nominal power in motoring mode1:
150kW @ $v \geq 92\text{km/h} < 189\text{km/h}$
10. Nominal power in generating mode1:
153kW @ $v \geq 92\text{km/h} < 200\text{km/h}$
11. Overload power 10s in motoring mode1:
228kW @ $v \geq 92\text{km/h} < 120\text{km/h}$
12. Overload power 10s in generating mode1:
258kW @ $v \geq 92\text{km/h} < 146\text{km/h}$
13. Nominal tractive force in motoring mode1:
5,870N @ $v < 92\text{km/h}$
14. Nominal tractive force in generating mode1:
5,987N @ $v < 92\text{km/h}$
15. Overload tractive force 10s in motoring mode1:
8,922N @ $v < 92\text{km/h}$
16. Overload tractive force 10s in generating mode1:
10,096N @ $v < 92\text{km/h}$
17. Tolerance of tractive force measurement:
 $\pm 0.1\%$ of full scale

18. Repeatability of force measurement:
±0.05% of full scale (typically < 0.03% of full scale)
19. Tolerance of tractive force control:
±0.2% of full scale
20. Tolerance of acceleration measurement:
<1% or 0.005m/s² whichever is bigger
21. Optical speed sensor resolution:
10,000 pulses/rev.
22. Tolerance of speed measurement:
±0.02km/h
23. Tolerance of speed control:
±0.03km/h
24. Speed synchronization of axles/rollers:
≤0.16km/h (typically ≤0.05km/h)
25. Tolerance of distance measurement:
±0.001m/m
26. Resolution of distance measurement:
100mm
27. Tolerance of time measurement:
±0.001%
28. Resolution of time measurement:
1ms Max. response time 100ms (typically <50ms)
29. Tolerance of base inertia verification:
±0.2% of demand base inertia
±13.6kg of each individual base inertia
30. Tolerance of inertia and road load simulation:
±1% of calculated value or ±9.8N whichever is bigger (but not better than force control)
31. Repeatability of inertia and road load simulation:
±0.5% of calculated value or (but not better than force control)
32. Parasitic friction compensation error:
±74,57W at any steady speed (typically <45W at any steady speed)
33. Temperature range:
-40°C ~ +60°C
34. Roller surface:
feasible for both durability and emission test
35. Automatic centering device:
Drive unit type: AC
Duration of jogging: approx. 15s
Max. axle load(in vehicle centering operation): 5 ton
Max. axle load(in vehicle lifting operation): 3 ton
36. Restraint system:

including pillars & chains

Max. force in driving direction: 50,000N/chain

37. Vehicle cooling fan

Max flow rate 53,000m³/h

Air speed over 130kph

III. Remarks

1. Inspection: Factory final inspection for 1 week, 2 peoples. All related cost will be included.
2. Training for equipment:
 - 1st : during inspection at factory.
 - 2nd : after installation at customer site.
 - 3rd : 2 months later from secondary training.
3. Technical support for application tests with chassis dynamometer
 - Type: engineering support & training program
 - Duration: 6 months from final acceptance(F.A.)
 - Application tests: HVAC, Cold start ability, Engine Cooling etc.
4. Delivery: FOB 8 months from contract date
- 5 Manual: 2 copies of operation in English and Korean
6. Warranty: 2 years after issued F.A.
7. Supplier should support all related utility connection. Supplier is responsible for all site work such as unloading from the truck, moving to the exact point, wiring to the distribution panelboard.
8. After installation, final test examination report should be submitted with a test check list.