



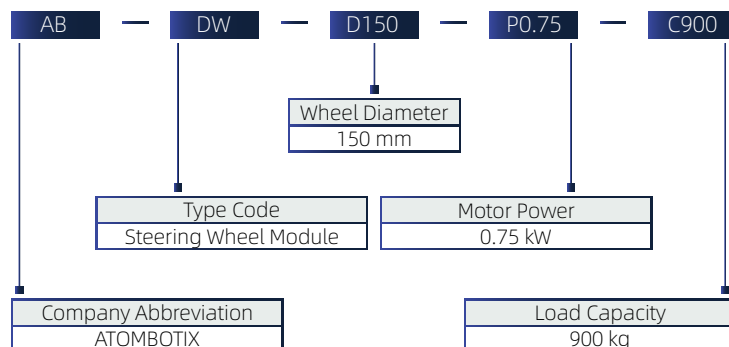
Horizontal Steering Drive Wheel Module



Overview

The horizontal steering wheel drive unit is an integrated module for AGVs and AMRs, combining driving and steering functions to enable flexible movements such as traveling, turning, and in-place rotation. Its horizontal motor layout reduces installation height, making it ideal for low-profile vehicle designs.

Model Nomenclature



Key Feature

 <p>Low installation height</p> <p>Horizontal structure design optimizes space utilization for compact vehicle layouts</p>	 <p>High maneuverability</p> <p>Supports omnidirectional movement and precise steering control</p>	 <p>Compact & integrated design</p> <p>Combines drive and steering functions into a single module</p>	 <p>Flexible configuration</p> <p>Wheel material (PU standard, rubber optional) and other parameters can be customized</p>
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Installation Layout



		Basic Information					Drive Motor		Steering Motor		
No.	Model	Wheel Diameter (mm)	Load Capacity (Polyurethane)	Load Capacity (Rubber)	Height (mm)	Rated Voltage (V)	Motor Power (W)	Motor Torque (N·m)	Motor Power (W)	Motor Torque (N·m)	Steering Angle (°)
1	AB-SW-D150-P0.4-C550	150	550	/	198	48	400	1.27	200	0.64	±140
2	AB-SW-D150-P0.75-C550	150	550	300	198	48	750	2.39	200	0.64	±140
3	AB-SW-D200-P0.75-C900	200	900	500	255	48	750	2.39	400	1.27	±140
4	AB-SW-D200-P1.0-C900	200	900	/	258	48	1000	3.18	400	1.27	±140
5	AB-SW-D200-P1.5-C900	200	900	/	258	48	1570	5	400	1.27	±140
6	AB-SW-D250-P1.5-C1200	250	1200	/	317	48	1570	5	750	2.39	±140
7	AB-SW-D250-P3.0-C1200	250	1200	/	317	48	3000	9.55	750	2.39	±140
8	AB-SW-D300-P1.5-C2200	300	2200	1200	381	48	1570	5	750	2.39	±140
9	AB-SW-D300-P2.5-C2200	300	2200	1200	381	48	2500	7.96	750	2.39	±140
10	AB-SW-D300-P3.0-C2500	300	2500	1200	381	48	3000	9.55	750	2.39	±140
11	AB-SW-D400-P5.5-C4000	400	4000	2000	512	72	5500	17.5	2350	7.5	±140
12	AB-SW-D500-P7.5-C5700	500	5700	/	600	72	7500	36	2350	7.5	±140



Basic Information		
Wheel Diameter(mm)	150	
Wheel Material	Polyurethane	Rubber
Load Capacity(kg)	550	/
Height(mm)	198	
Rated Voltage(V)	48	
Suspension	None	
Maintenance Method	Refer to maintenance manual	
Maintenance Interval	Refer to maintenance manual	

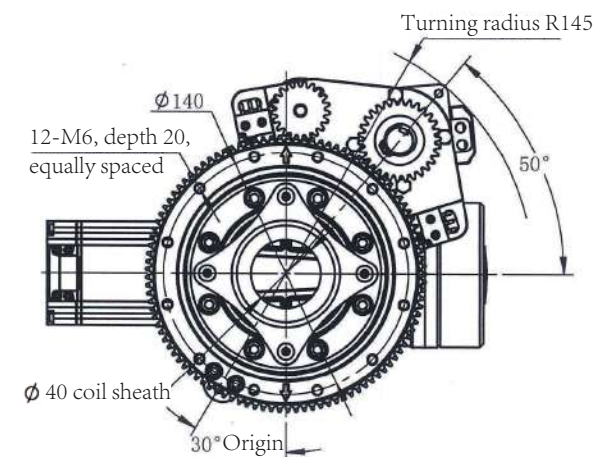
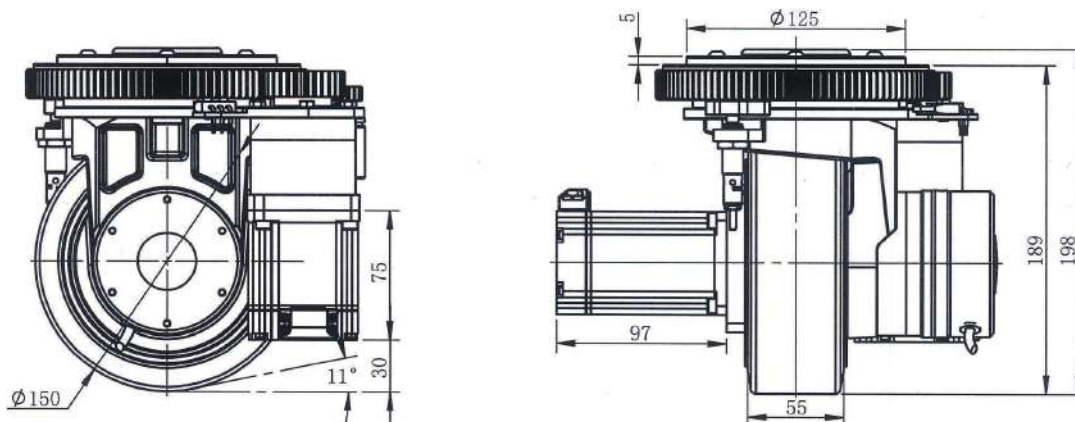
Drive Unit	
Motor Model	SMC60S-0040-30MAK-5DSU
Rated Motor Power(W)	400
Rated Motor Speed(rpm)	3000
Rated Motor Torque(N·m)	1.27
Built/in Encoder Type	Incremental magnetic encoder
Encoder Performance	/
Gear Ratio	20
Traction Force(N)	322
Travel Speed(m/min)	70.65
Brake Type	Electromagnetic brake
Brake Torque(N·m)	4
External Safety Encoder	Optional

Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/ position Switch
SMC60S/0020/30QAK/5DSU	200	3000	0.64	Incremental magnetic encoder	/	35	122.5	145	±140	Yes	5A125/250VAC	IME12/02BN OZW2K



AB-SW-D150-P0.4-C550

NO. 1



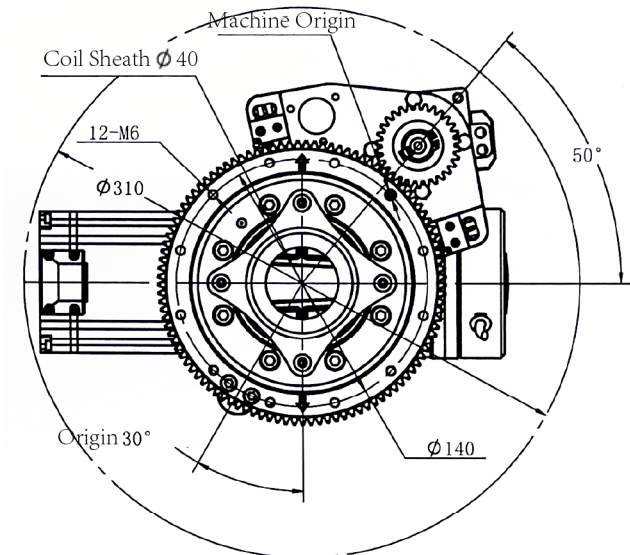
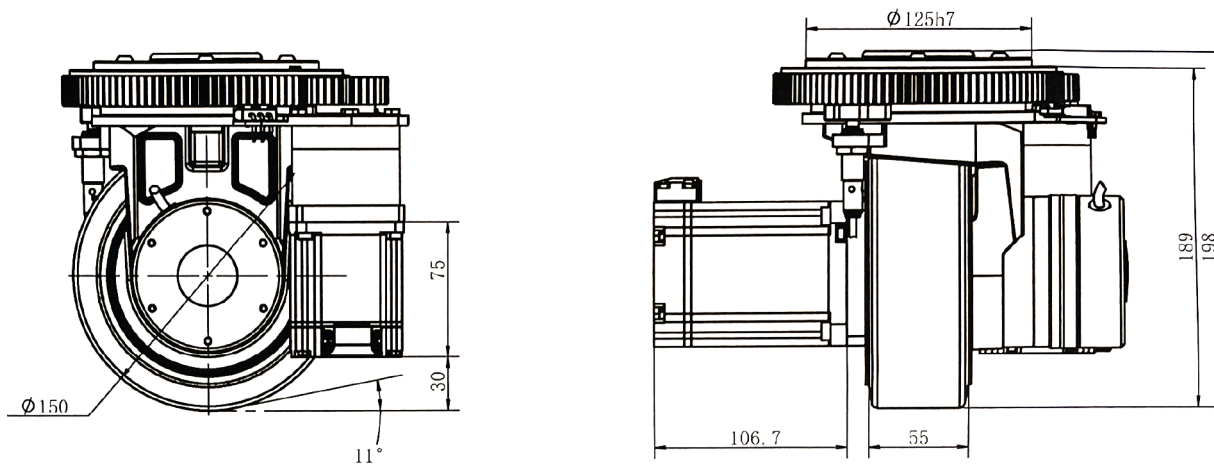
Basic Information				Drive Unit									
Wheel Diameter(mm)	150			Motor Model	SMC80S-0075-30MAK-5DSU								
Wheel Material	Polyurethane	Rubber		Rated Motor Power(W)	750								
Load Capacity(kg)	550	300		Rated Motor Speed(rpm)	3000								
Height(mm)	198			Rated Motor Torque(N·m)	2.39								
Rated Voltage(V)	48			Built/in Encoder Type	Incremental magnetic encoder								
Suspension	None			Encoder Performance	/								
Maintenance Method	Refer to maintenance manual			Gear Ratio	20								
Maintenance Interval	Refer to maintenance manual			Traction Force(N)	605								
				Travel Speed(m/min)	70.65								
				Brake Type	Electromagnetic brake								
				Brake Torque(N·m)	4								
				External Safety Encoder	Optional								
Steering Unit													
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/position Switch	
SMC60S/0020/30QAK/5DSU	200	3000	0.64	Incremental magnetic encoder	/	35	122.5	310	±140	Yes	200E06W1/G9/OR/1M	PR12/2DN	



AB-SW-D150-P0.75-C550

NO. 2

* Wheel material: Polyurethane (PU) standard, Rubber (RB) optional.



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Basic Information				Drive Unit									
Wheel Diameter(mm)	200			Motor Model	SMC80S-0075-30MAK-5DSU								
Wheel Material	Polyurethane	Rubber		Rated Motor Power(W)	750								
Load Capacity(kg)	900	500		Rated Motor Speed(rpm)	3000								
Height(mm)	255			Rated Motor Torque(N·m)	2.39								
Rated Voltage(V)	48			Built/in Encoder Type	Incremental magnetic encoder								
Suspension	None			Encoder Performance	/								
Maintenance Method	Refer to maintenance manual			Gear Ratio	21								
Maintenance Interval	Refer to maintenance manual			Traction Force(N)	477								
				Travel Speed(m/min)	88.65								
				Brake Type	Electromagnetic brake								
				Brake Torque(N·m)	8								
				External Safety Encoder	Optional								

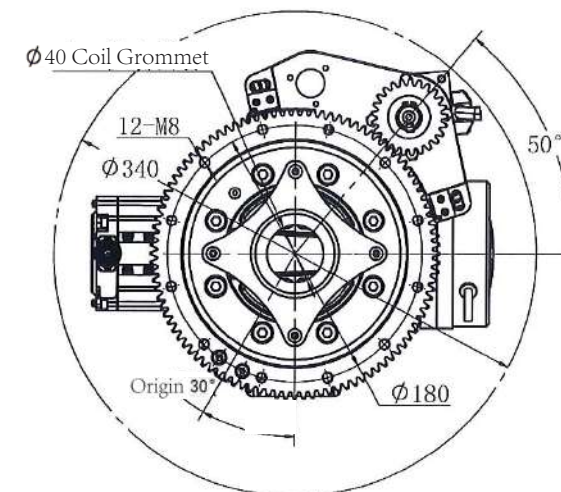
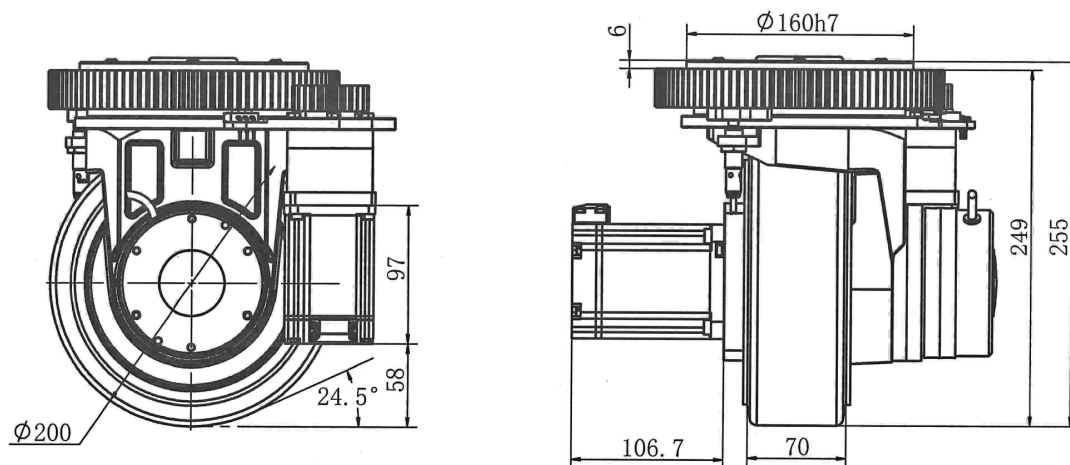
Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/position Switch
SMC60S/0040/30QAK/5DSU	400	3000	1.27	Incremental magnetic encoder	/	35	140	170	±140	Yes	200E06W1/G9/OR/1M	PR12/2DN



AB-SW-D200-P0.75-C900

NO. 3

* Wheel material: Polyurethane (PU) standard, Rubber (RB) optional.

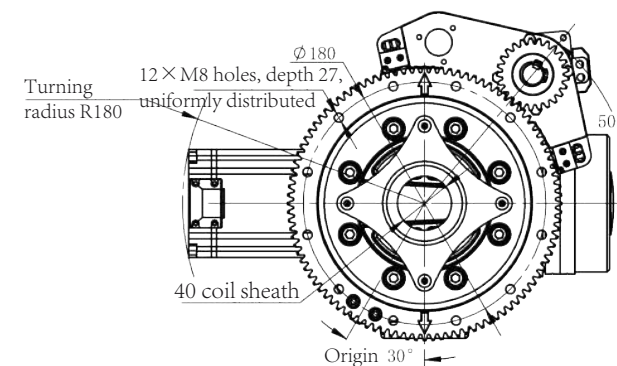
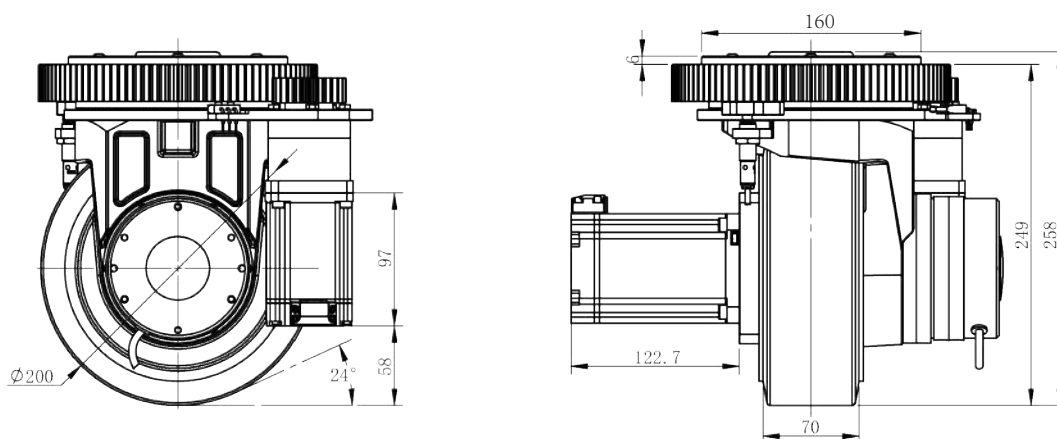


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Basic Information				Drive Unit									
Wheel Diameter(mm)	200			Motor Model	SMC805-0100-30MAK-5DSU								
Wheel Material	Polyurethane	Rubber		Rated Motor Power(W)	1000								
Load Capacity(kg)	900	/		Rated Motor Speed(rpm)	3000								
Height(mm)	258			Rated Motor Torque(N·m)	3.18								
Rated Voltage(V)	48			Built/in Encoder Type	Incremental magnetic encoder								
Suspension	None			Encoder Performance	/								
Maintenance Method	Refer to maintenance manual			Gear Ratio	21								
Maintenance Interval	Refer to maintenance manual			Traction Force(N)	640								
				Travel Speed(m/min)	88.65								
				Brake Type	Electromagnetic brake								
				Brake Torque(N·m)	8								
				External Safety Encoder	Optional								

Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/position Switch
SMC605/0040/30QAK/5DSU	400	3000	1.27	Incremental magnetic encoder	/	35	140	180	±140	Yes	5A125/250V AC	IME12/02BN OZW2K


AB-SW-D200-P1.0-C900
NO. 4


Basic Information		
Wheel Diameter(mm)	200	
Wheel Material	Polyurethane	Rubber
Load Capacity(kg)	900	/
Height(mm)	258	
Rated Voltage(V)	48	
Suspension	None	
Maintenance Method	Refer to maintenance manual	
Maintenance Interval	Refer to maintenance manual	

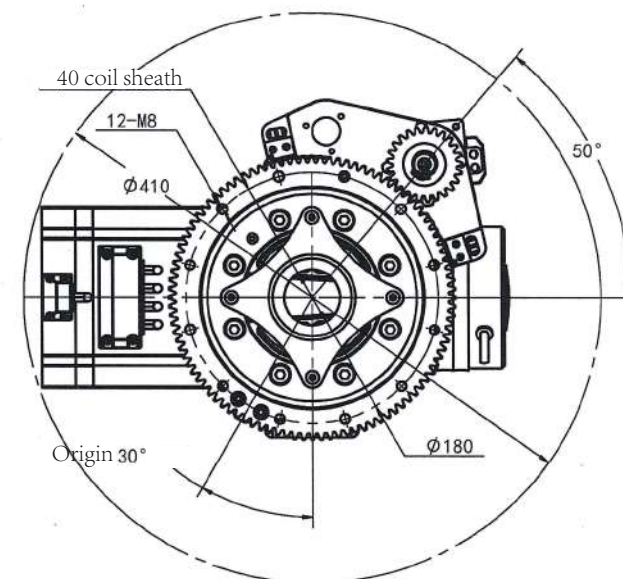
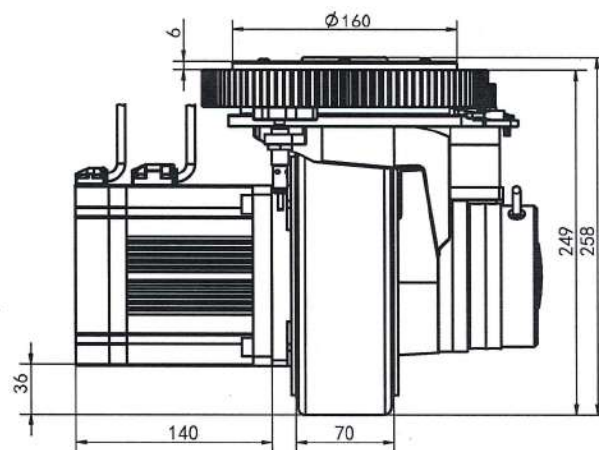
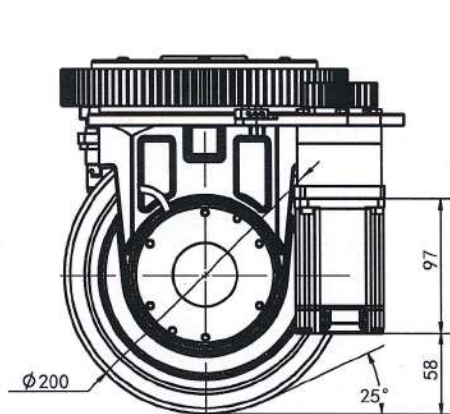
Drive Unit	
Motor Model	SMC130D-0150-30WAK-4DSH
Rated Motor Power(W)	1570
Rated Motor Speed(rpm)	3000
Rated Motor Torque(N·m)	5
Built/in Encoder Type	Incremental magnetic encoder
Encoder Performance	/
Gear Ratio	21
Traction Force(N)	880
Travel Speed(m/min)	88.65
Brake Type	Electromagnetic brake
Brake Torque(N·m)	8
External Safety Encoder	Optional

Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/ position Switch
SMC60S/0040/30QAK/5DSU	400	3000	1.27	Incremental magnetic encoder	/	35	140	205	±140	Yes	200E06W1/G9/OR/1M	PR12/2DN



AB-SW-D200-P1.5-C900

NO. 5



Basic Information		
Wheel Diameter(mm)	250	
Wheel Material	Polyurethane	Rubber
Load Capacity(kg)	1200	/
Height(mm)	317	
Rated Voltage(V)	48	
Suspension	None	
Maintenance Method	Refer to maintenance manual	
Maintenance Interval	Refer to maintenance manual	

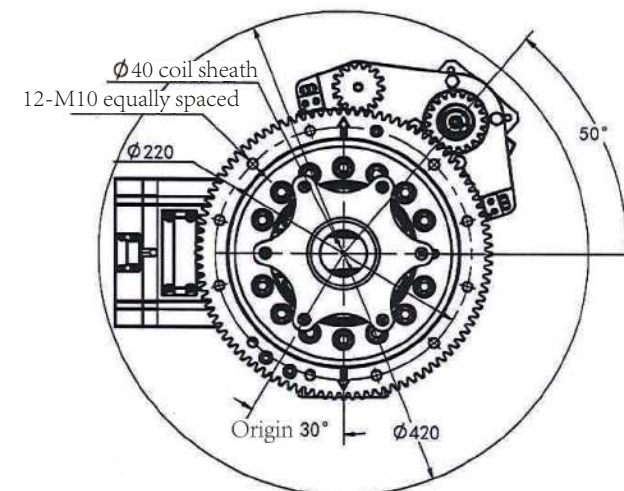
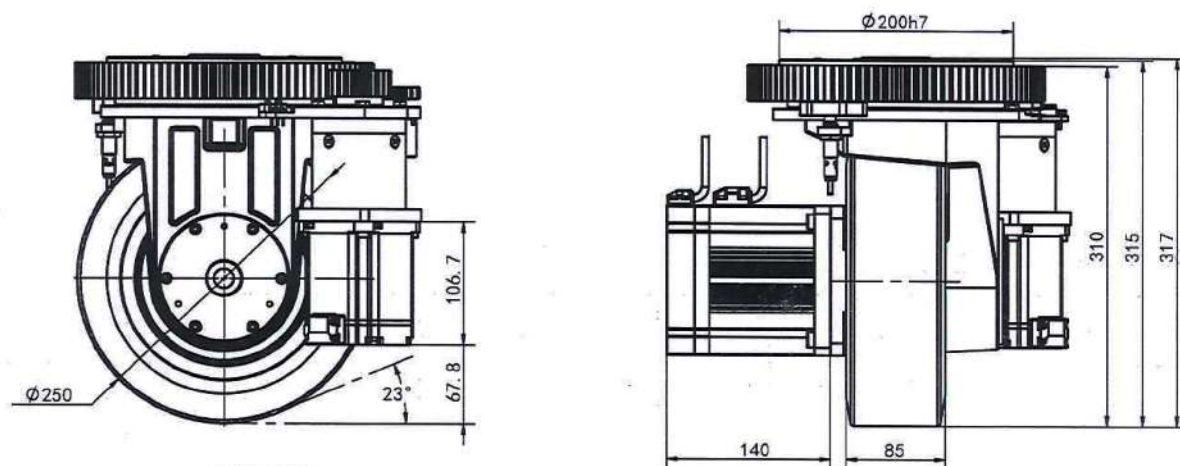
Drive Unit	
Motor Model	SMC130D-0150-30WAK-4DSH
Rated Motor Power(W)	1570
Rated Motor Speed(rpm)	3000
Rated Motor Torque(N·m)	5
Built/in Encoder Type	Incremental magnetic encoder
Encoder Performance	/
Gear Ratio	21
Traction Force(N)	756
Travel Speed(m/min)	110.82
Brake Type	Electromagnetic brake
Brake Torque(N·m)	/
External Safety Encoder	Optional

Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/ position Switch
SMC80S/0075/30QAK/5DSU	750	3000	2.39	Incremental magnetic encoder	/	50	250	210	±140	Yes	200E06W1/G9/OR/1M	PR12/2DN



AB-SW-D250-P1.5-C1200

NO. 6

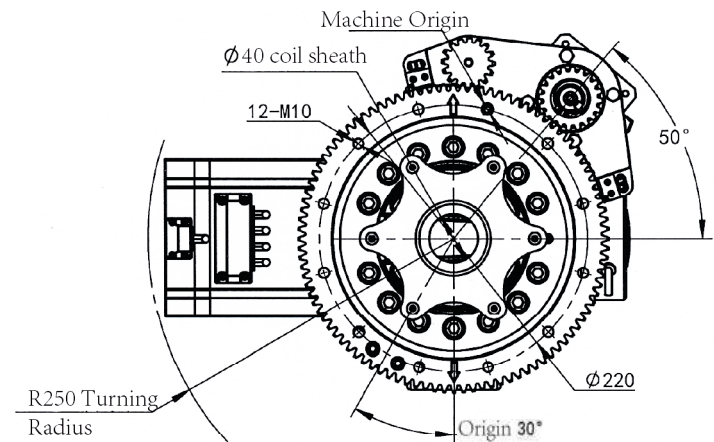
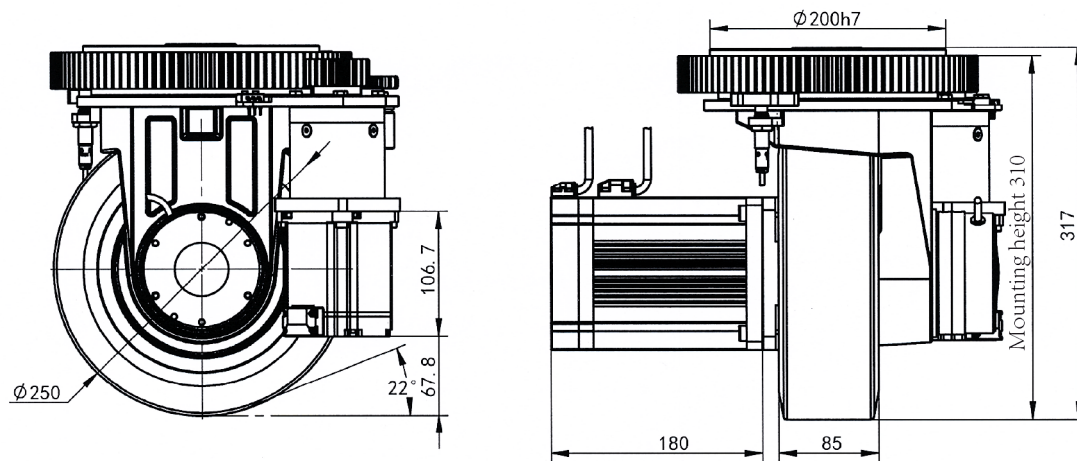


Basic Information		
Wheel Diameter(mm)	250	
Wheel Material	Polyurethane	Rubber
Load Capacity(kg)	1200	/
Height(mm)	317	
Rated Voltage(V)	48	
Suspension	None	
Maintenance Method	Refer to maintenance manual	
Maintenance Interval	Refer to maintenance manual	

Drive Unit	
Motor Model	SMC130D-0300-30WAK-4DSH
Rated Motor Power(W)	3000
Rated Motor Speed(rpm)	3000
Rated Motor Torque(N·m)	9.55
Built/in Encoder Type	Incremental magnetic encoder
Encoder Performance	/
Gear Ratio	21
Traction Force(N)	1440
Travel Speed(m/min)	110.82
Brake Type	Electromagnetic brake
Brake Torque(N·m)	8
External Safety Encoder	Optional



Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/ position Switch
SMC80S/0075/30QAK/5DSU	750	3000	2.39	Incremental magnetic encoder	/	35	175	250	±140	Yes	200E06W1/G9/OR/1M	PR12/2DN

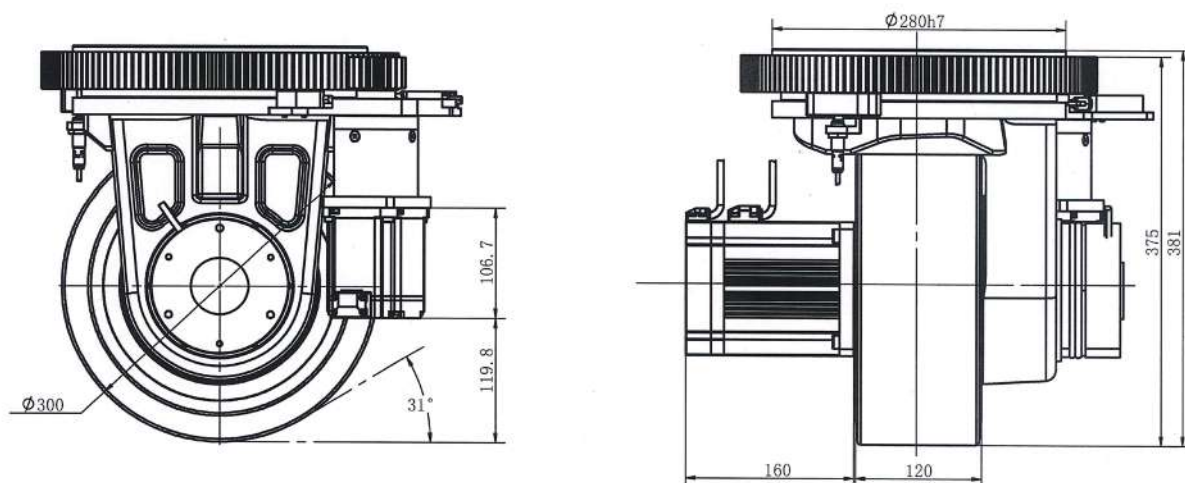


Basic Information				Drive Unit									
Wheel Diameter(mm)	300			Motor Model	SMC130D-0250-30WAK-4DSH-2								
Wheel Material	Polyurethane	Rubber		Rated Motor Power(W)	2500								
Load Capacity(kg)	2200	1200		Rated Motor Speed(rpm)	3000								
Height(mm)	381			Rated Motor Torque(N·m)	7.96								
Rated Voltage(V)	48			Built/in Encoder Type	Incremental magnetic encoder								
Suspension	None			Encoder Performance	/								
Maintenance Method	Refer to maintenance manual			Gear Ratio	48								
Maintenance Interval	Refer to maintenance manual			Traction Force(N)	2292								
				Travel Speed(m/min)	58.8								
				Brake Type	Electromagnetic brake								
				Brake Torque(N·m)	/								
				External Safety Encoder	Optional								

Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/ position Switch
SMC80S/0075/30QAK/5DSU	750	3000	2.39	Incremental magnetic encoder	/	35	236.25	245	±140	Yes	XCMD2102L1	PR12/2DN


AB-SW-D300-P2.5-C2200
NO. 8

* Wheel material: Polyurethane (PU) standard, Rubber (RB) optional.


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Basic Information		
Wheel Diameter(mm)	300	
Wheel Material	Polyurethane	Rubber
Load Capacity(kg)	2500	1200
Height(mm)	381	
Rated Voltage(V)	48	
Suspension	None	
Maintenance Method	Refer to maintenance manual	
Maintenance Interval	Refer to maintenance manual	

Drive Unit	
Motor Model	SMC130D-0300-30WAK-4DSH-2
Rated Motor Power(W)	3000
Rated Motor Speed(rpm)	3000
Rated Motor Torque(N·m)	9.55
Built/in Encoder Type	Incremental magnetic encoder
Encoder Performance	/
Gear Ratio	48
Traction Force(N)	2750
Travel Speed(m/min)	58.8
Brake Type	Electromagnetic brake
Brake Torque(N·m)	16
External Safety Encoder	Optional

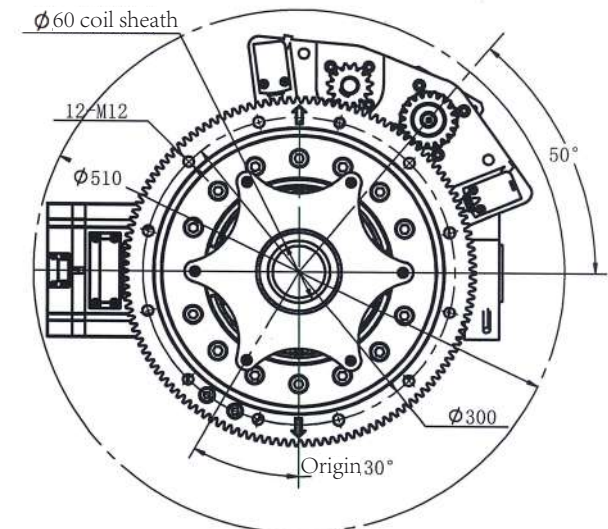
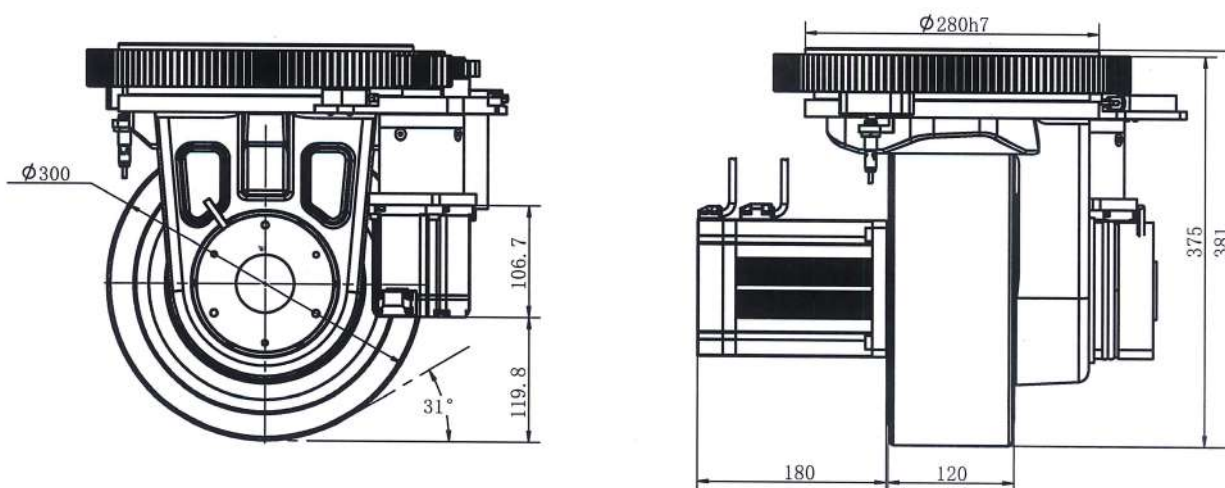
Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/position Switch
SMC80S/0075/30QAK/5DSU	750	3000	2.39	Incremental magnetic encoder	/	35	236.25	255	±140	Yes	XCMD2102L1	IME12/02BP5Z2K



AB-SW-D300-P3.0-C2500

NO. 9

* Wheel material: Polyurethane (PU) standard, Rubber (RB) optional.



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Basic Information		
Wheel Diameter(mm)	400	
Wheel Material	Polyurethane	Rubber
Load Capacity(kg)	4000	2000
Height(mm)	512	
Rated Voltage(V)	72	
Suspension	None	
Maintenance Method	Refer to maintenance manual	
Maintenance Interval	Refer to maintenance manual	

Drive Unit	
Motor Model	/
Rated Motor Power(W)	5500
Rated Motor Speed(rpm)	3000
Rated Motor Torque(N·m)	17.5
Built/in Encoder Type	Incremental magnetic encoder
Encoder Performance	/
Gear Ratio	36
Traction Force(N)	2366
Travel Speed(m/min)	104.6
Brake Type	Electromagnetic brake
Brake Torque(N·m)	60
External Safety Encoder	Optional

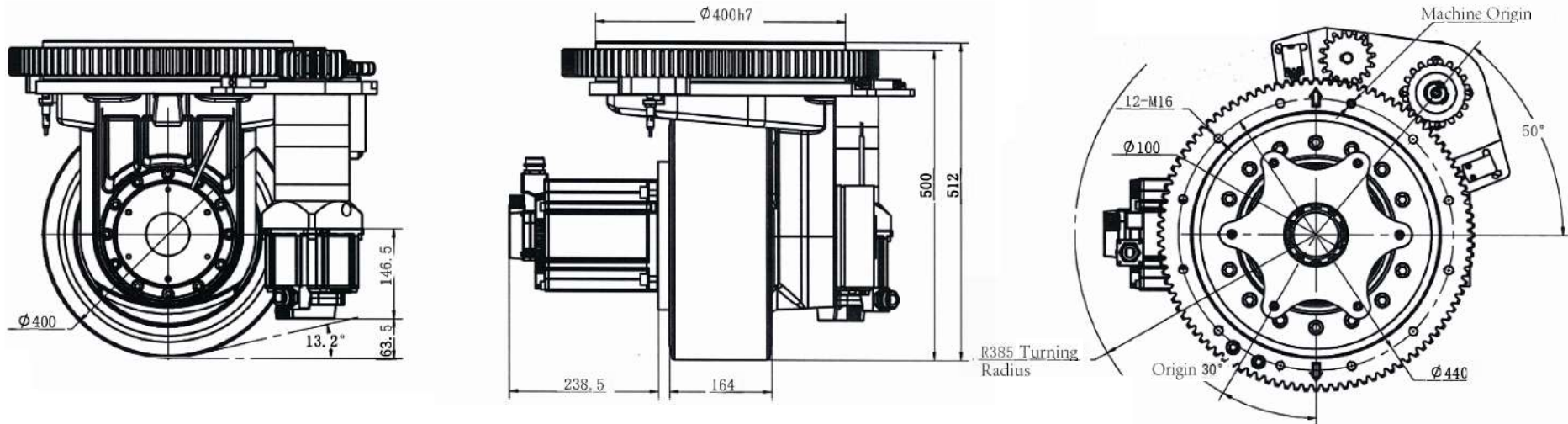


AB-SW-D400-P5.5-C4000

NO. 10

Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/ position Switch
/	2350	3000	7.5	Incremental magnetic encoder	/	125	625	385	±140	Yes	XCMD2102L 1	PR12/2DN

* Wheel material: Polyurethane (PU) standard, Rubber (RB) optional.



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Basic Information			Drive Unit	
Wheel Diameter(mm)	500		Motor Model	/
Wheel Material	Polyurethane	Rubber	Rated Motor Power(W)	7500
Load Capacity(kg)	5700	/	Rated Motor Speed(rpm)	3000
Height(mm)	600		Rated Motor Torque(N·m)	36
Rated Voltage(V)	72		Built/in Encoder Type	Incremental magnetic encoder
Suspension	None		Encoder Performance	/
Maintenance Method	Refer to maintenance manual		Gear Ratio	36
Maintenance Interval	Refer to maintenance manual		Traction Force(N)	4800
			Travel Speed(m/min)	87.2
			Brake Type	Electromagnetic brake
			Brake Torque(N·m)	60
			External Safety Encoder	Optional

Steering Unit												
Motor Model	Rated Motor Power(W)	Rated Motor Speed(rpm)	Rated Motor Torque(N·m)	Built/in Encoder Type	Encoder Performance	Gearbox Ratio	Total Steering Ratio	Max. Turning Radius(mm)	Steering Angle (°)	Mechanical Stop	Electronic Limit	Zero/position Switch
/	2350	3000	7.5	Incremental magnetic encoder	/	125	625	385	±140	Yes	XCMD2102L 1	/


AB-SW-D500-P7.5-C5700
NO. 11
