



Electric Power Steering for Forklift

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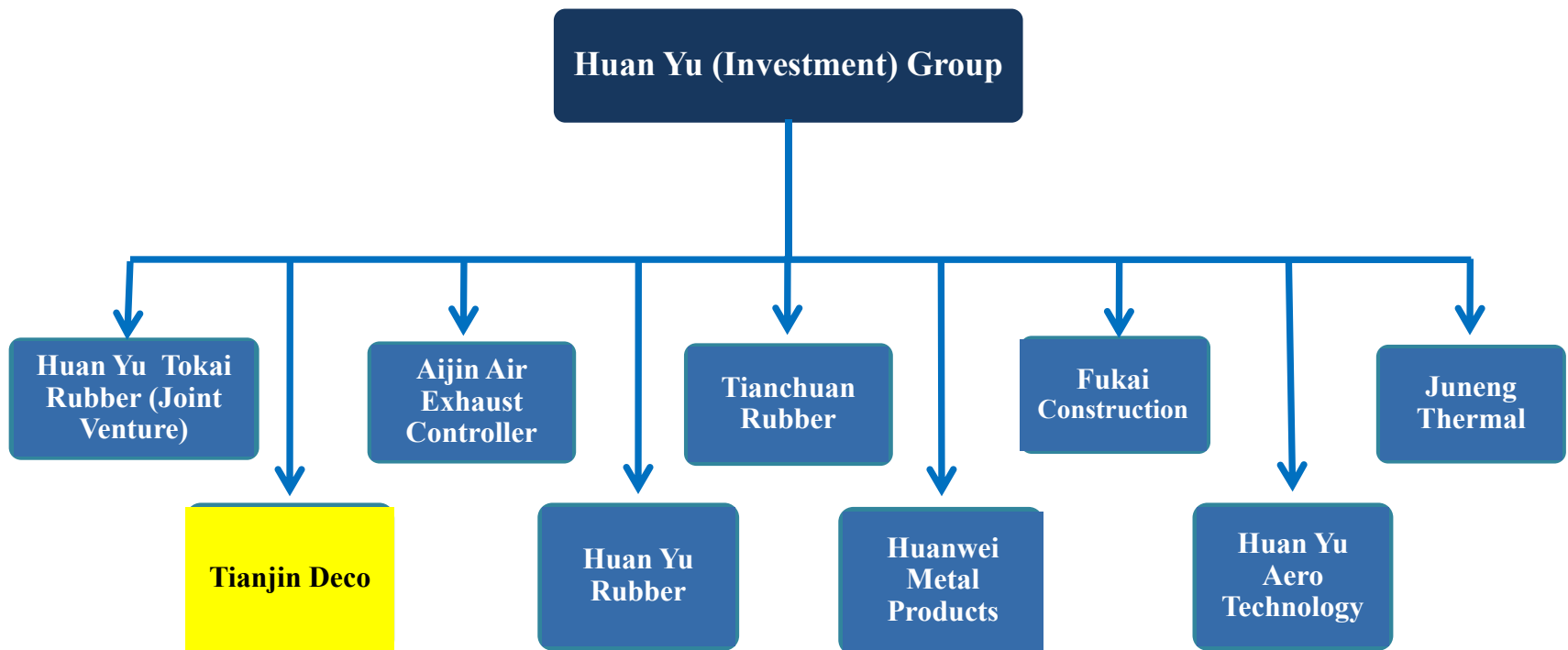
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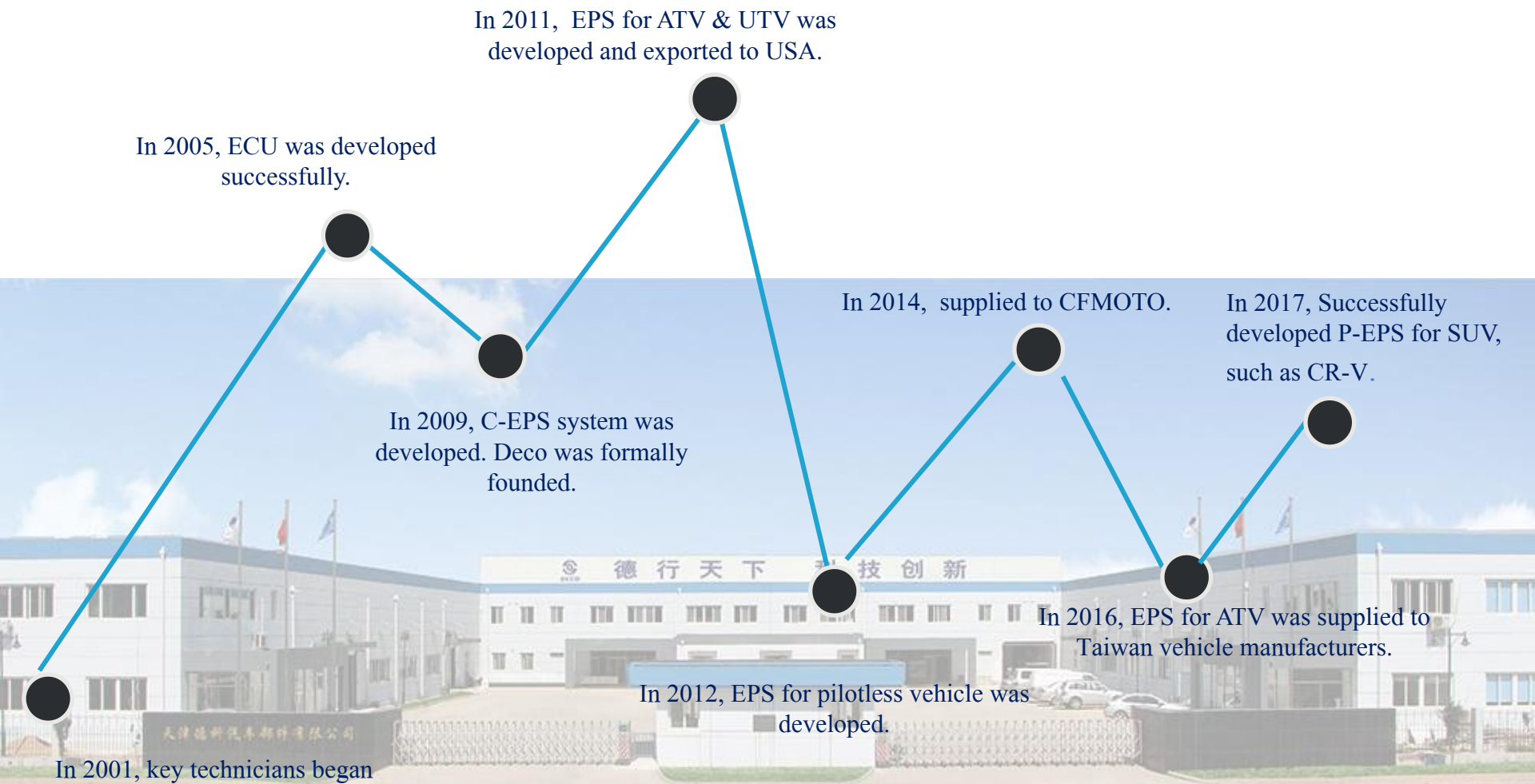


Who is Deco?

Deco is one subsidiaries of Tianjin HuanYu (Investment) Group Corporation. Our group member produce products of metal stampings, electric power steering system ,catalytic converters and others.



Who is Deco?



What does Deco offer?



EPS



ATV



EPS



UTV



C-EPS



Electric Vehicle



P-EPS



Medium Passenger Vehicle



RB-EPS



Pickup Truck



EPS

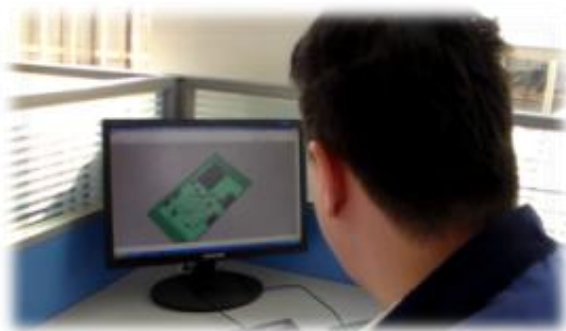
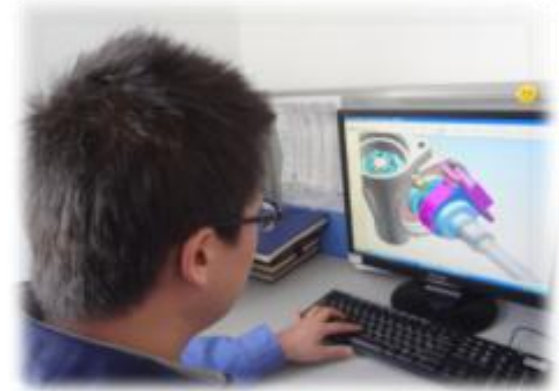


Forklift



What does Deco offer?

- Complete power steering system design according to vehicle's unique requirements.
- Offer solutions for EPS system problems.



- ECU and sensor design according to different EPS system.
- ECU control program edit according to vehicle's requirements.



What does Deco offer?

Parameters of EPS for Forklift



Proposal 1



Proposal 2

Performance

| | | | | |
|---------------------|--------|--------|---------|--------|
| Input torque | < 21Nm | | | < 21Nm |
| Ratio | 21: 1 | | | 21:1 |
| Motor Power | 380W | 420W | 650W | 450W |
| Motor Output torque | 4Nm | 3.1Nm | 6.3Nm | 4Nm |
| EPS Output torque | < 80Nm | < 65Nm | < 112Nm | < 80Nm |

| | | | | |
|-----------------------------|-------------|--|--|----------------|
| Sensor Type | Non-Contact | | | Non-Contact |
| Waterproof Rating | IP67 | | | IP67 |
| Motor Rated Voltage | 24V | | | 24V |
| Motor Type | DC brush | | | PMSM brushless |
| Sensor Power Supply Voltage | 5V | | | 5V |
| Working Temperature | -40-+85°C | | | -40-+85°C |

ECU Parameters

| | | | | |
|-----------------------|-----|--|--|-----|
| Power Supply Voltage | 12V | | | 12V |
| Input Current | 40A | | | 25A |
| Vehicle Speed Control | Yes | | | Yes |



Why is EPS system better for Forklift ?

Comparison of different steering systems

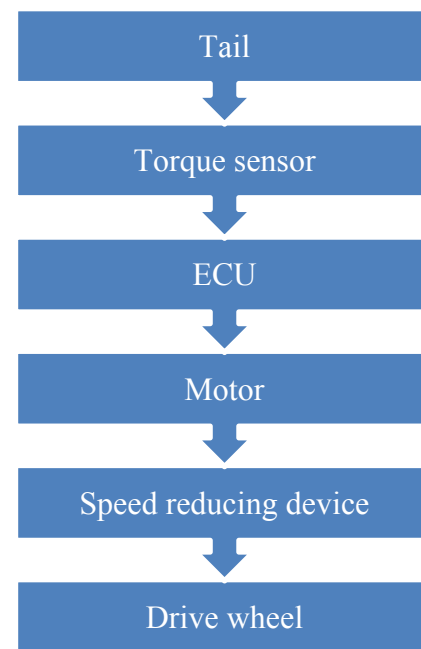
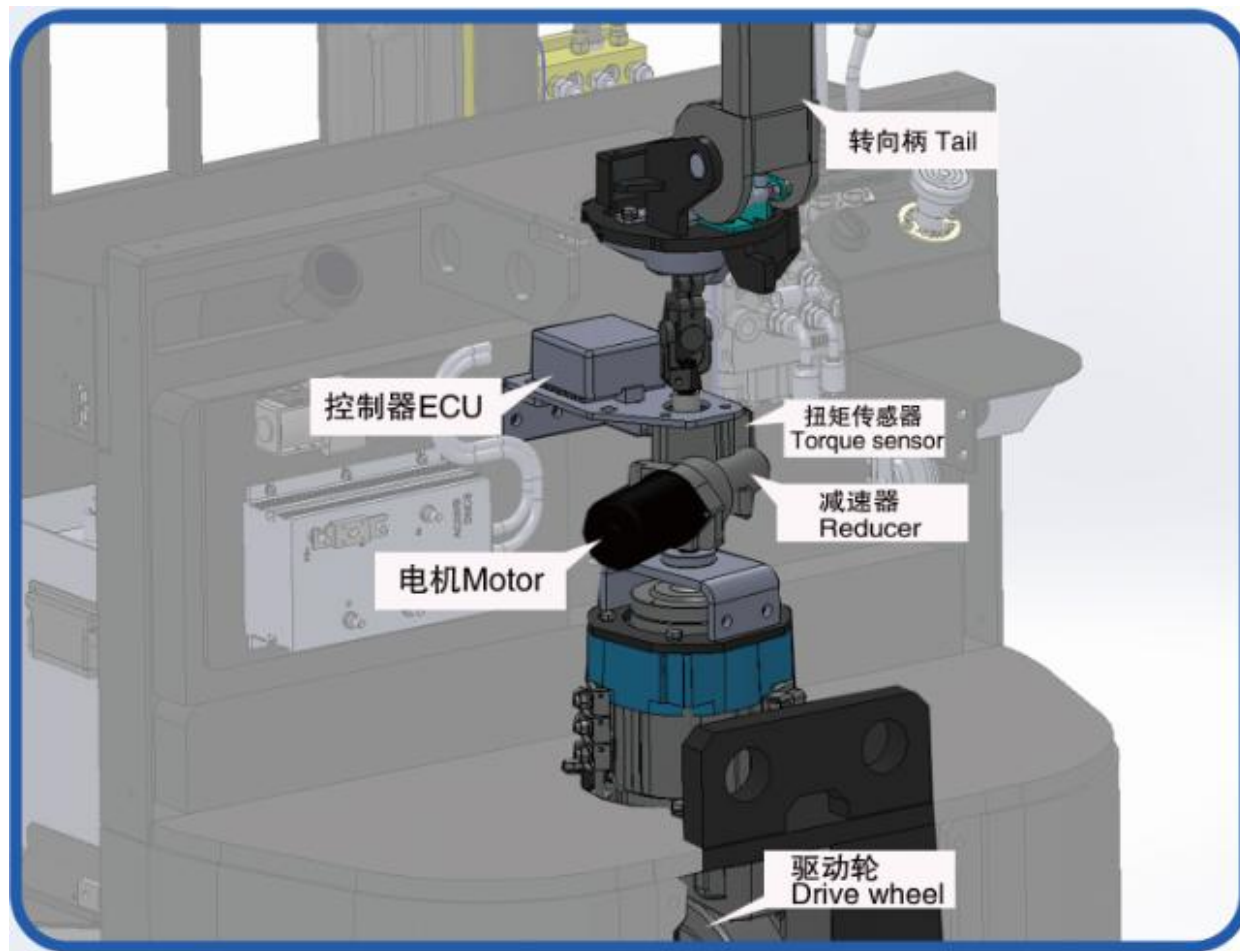
| Items | Mechanical | EPS | SBW EPS |
|--------------------------|---|--|---|
| Power Source of steering | Driver | Driver +Motor | Motor |
| Hand force | Heavy | Light | Light |
| Effectiveness | Low | High | High |
| Response | Fast | Fast | Slow |
| Steering feeling | --- | Assisting torque is subject to technical requirements and different truck speed. | Without damper, steering feel is poor; With a damper, driver feels better, but performance is highly influenced by the temperature. |
| Road feeling | The vibration of the road will be transmitted to tail directly. | Feedback from Road can be adjusted as required. | No feedback from road. |
| Safety | ---- | The driver can still steer mechanically when system fails. | The driver can't turn when system fails. |
| Cost | Low | Normal | High |

Why should you choose EPS system ?

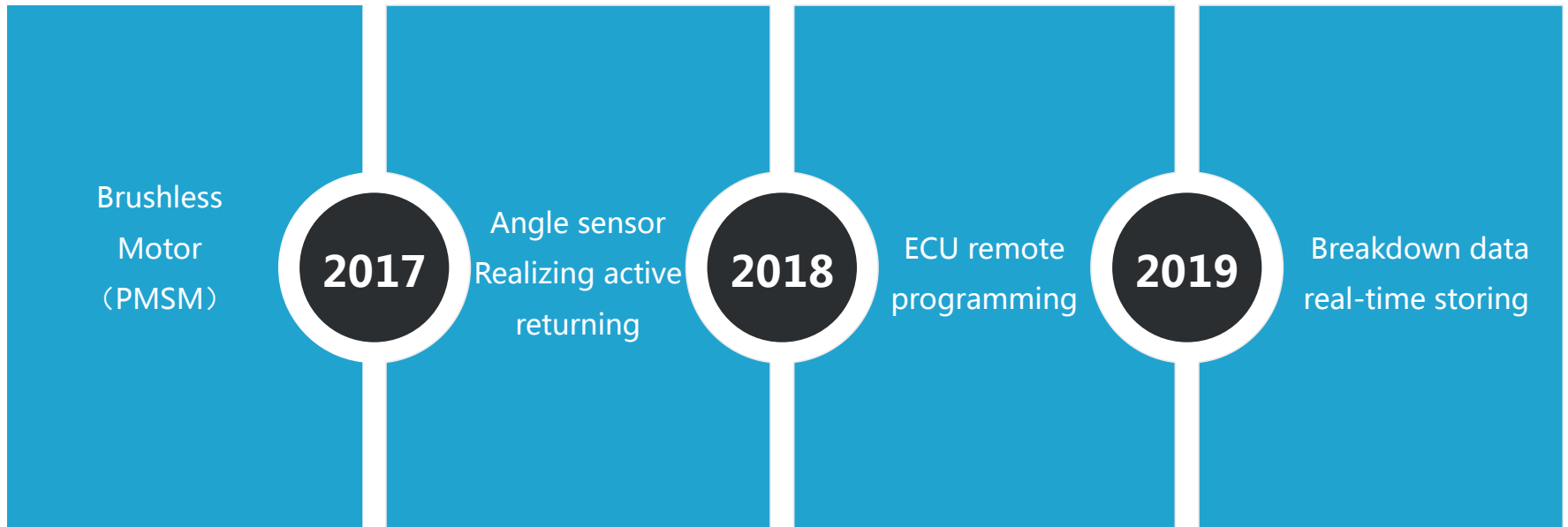
- Make the truck safer to drive --- By CAN communication, EPS can offer different torque ratios when the moving forward and backward, ensures safer driving. Can also help the truck to decrease the speed to avoid rollover when steering at small turning radius or under excessive speed.
- Make the steering system safer—The mechanical steering will still work when EPS fails.
- Accurate control – When driving in small space, the driver can control the steering precisely to increase the operability of the truck.
- Good anti-interference ability --buffer the impact of the road surface on the steering system with the speed reducer.
- Adjustable assistance--The output assistance can be adjusted according to different requirements and vehicle speed.
- Easy to install and maintain-- Integral design simplifies installation process and saves space. No need for periodical maintenance.
- Wider working temperature – can work under working temperature of -40-+85°C.
- High compatibility—EPS can be applied to different trucks with different steering requirements by adjusting control software only.
- Energy saving - The motor only works when steering. Static power consumption is very low.
- Environment friendly - No hydraulic oil leakage problem.



How EPS system works in Forklift?



In the future



We can work together to increase the steering safety and comfort of your vehicle.



Thank you for your
attention!



Let's start to know each other.

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