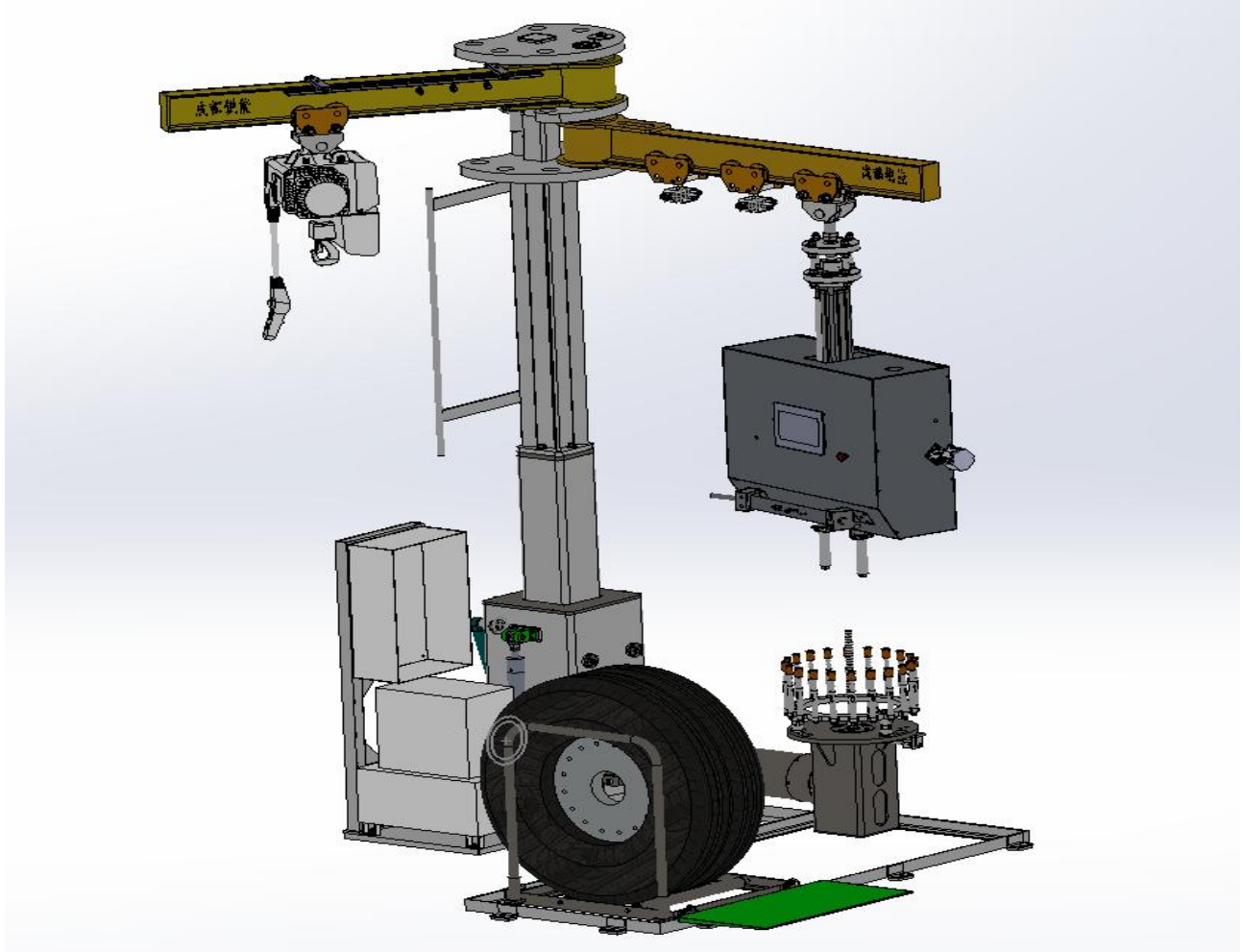




成都锐能科技有限公司
CHENGDU RUINENG TECHNOLOGY CO.,LTD

General Purpose Aircraft Hub Torque Machine

TYPE: RN - LJJ2001



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Product Overview:

The aircraft hub torque machine is designed according to the CMM maintenance manual for the front and rear wheels of aircraft tires. It is used to accurately control the torque output device when removing and assembling tire bolts. It can meet the test of hub torque of various civil aviation models. The detailed list is as follows:

NO.	Name	Package Number	CMM	Model
1	Nose wheel	3-1531-1	32-41-13	A320
2	Main wheel	C20195162	32-47-46	A320
3	Main wheel	C20500100	32-42-15	A320
4	Main wheel	3-1692-1	32-41-26	A320NEO
5	Nose wheel	3-1596	32-41-89	A330
6	Main wheel	2612201-2/-3	32-41-12	A330
7	Main wheel	3-1546	32-41-75	A330
8	Nose wheel	3-1659	32-41-40	A350
9	Main wheel	3-1678/-1	32-41-41	A350
10	Nose wheel	3-1438	32-40-32	B737-3/4/500
11	Nose wheel	3-1619 S294W522-360	32-40-45	B737-300



12	Main wheel	2606671-2	32-40-09	B737-300
13	Main wheel	3-1439-5/-6	32-40-31	B737-300
14	Main wheel	3-1666 S294W512-381	32-40-60	B737-300
15	Nose wheel	3-1710 10-62237-60	32-42-33	B737-MAX
16	Main wheel	3-1674 S277A016-351	32-42-28	B737-MAX
17	Nose wheel	10-62237-12	32-40-48	B737NG
18	Nose wheel	2607825-2	32-40-10	B737NG
19	Nose wheel	3-1559	32-40-51	B737NG
20	Nose wheel	C20637000	32-49-82	B737NG
21	Main wheel	2612301-2	32-40-12	B737NG
22	Main wheel	2612311-1	32-40-14	B737NG
23	Main wheel	2615001-1	32-40-16	B737NG
24	Main wheel	3-1557	32-40-49	B737NG
25	Main wheel	3-1558	32-40-50	B737NG
26	Main	C20626200	32-49-83	B737NG



	wheel			
27	Main wheel	C20633000 S277A016-551	32-49-80	B737NG
28	Main wheel	2603561/-3/-4/-5/-7/-9/-10/-11 /-12/-13/-14/-15/-16/-50/-51/-5 2	32-45-01	B747-200
29	Main wheel	3-1479/-1/-2 60B10062-21/22	32-45-02	B747-400
30	Nose wheel	3-1670 S168U400-330	32-44-70	B747-800
31	Main wheel	3-1664 S168U300-330	32-44-64	B747-800
32	Nose wheel	3-1423-1/-2	32-40-24	B757-200
33	Nose wheel	S160N010-30/-31	32-40-22	B757-200
34	Main wheel	S160N020-6 AHA1648	32-42-82	B757-200
35	Main wheel	3-1618 S294W512-380	32-40-44	B777
36	Nose wheel	2611205-2 294W522-220	32-47-06	B777-200
37	Main wheel	2611201-1 S294W511-260	32-47-01	B777-200
38	Main wheel	2611811-1	32-47-05	B777-200
39	Nose wheel	3-1648	32-44-48	B787
40	Nose	C20598000 S685Z001-590	32-49-63	B787



	wheel			
41	Main wheel	3-1644	32-49-82	B787
42	Main wheel	3-1645	32-44-45	B787
43	Main wheel	C20600100 S685Z001-561	32-49-64	B787
44	Main wheel	C20649000 S685Z001-570	32-49-75	B787-9
45	Nose wheel	5010598-1	32-46-27	CRJ-200
46	Main wheel	90001200-1 (0B9R9)	32-41-32	CRJ900
47	Nose wheel	5013640	32-46-30	CRJ-900
48	Nose wheel	3-1551	32-49-04	EMB145
49	Nose wheel	3-1662	32-49-08	EMB145
50	Main wheel	3-1641	32-49-05	EMB145
51	Nose wheel	90000581/-1	32-49-19	ERJ190
52	Main wheel	90002317-1/2	32-49-28	ERJ190

Technical indicators:

1. Torque output range: 60-540nm (accuracy: $\pm 2\%$ reading)
2. Torque shaft center distance range: 210-570mm(adjustable)
3. Telescopic capacity of sleeve components :70mm

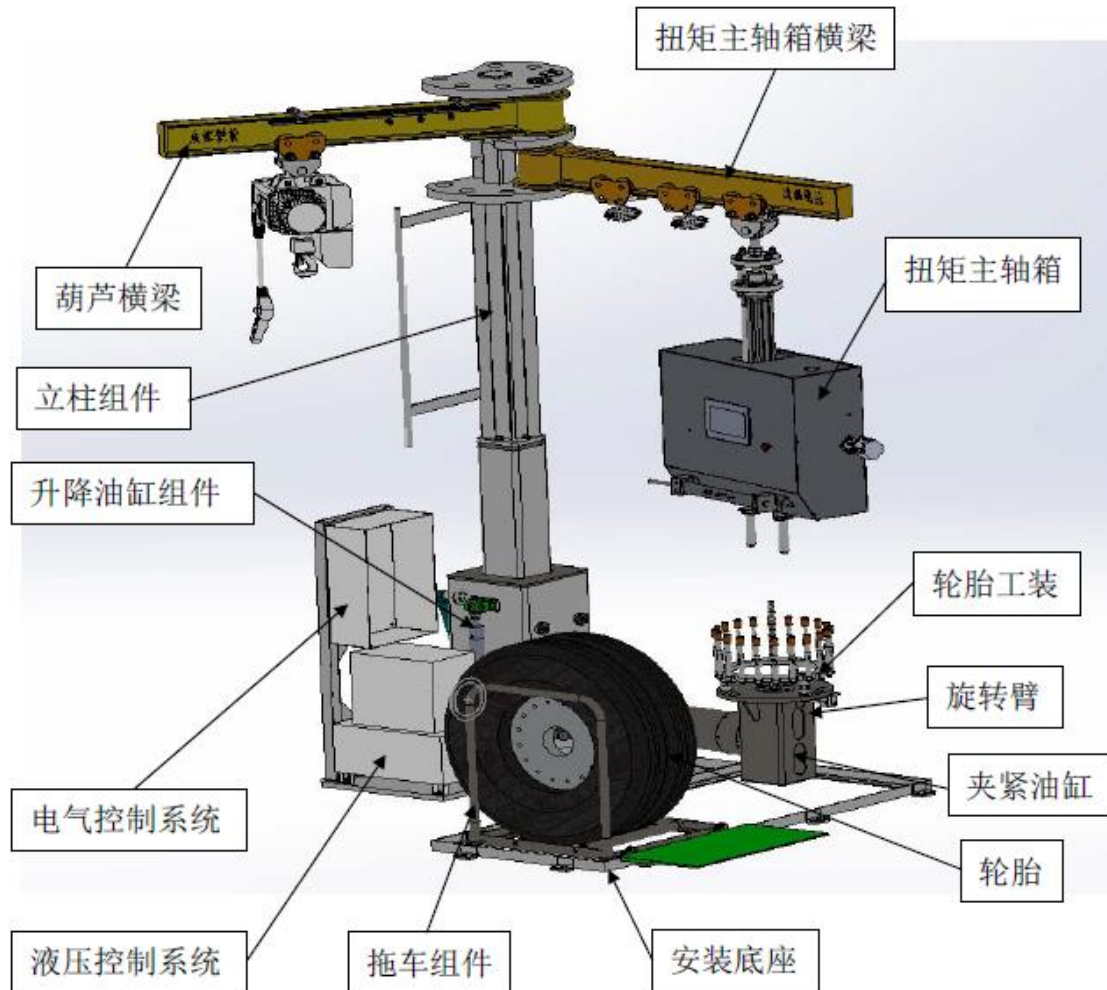


4. Power supply: 380V/50HZ 3 phase
5. Air source: 0.7mpa/Max
6. Cable length: 15m
7. Control computer: standard or specified by customer
8. Control PLC: Siemens
9. Torque output shaft layout: double shafts are tightened at the same time to improve working efficiency by 2 times.
10. Hydraulic pressure: 12Mpa/ Max.
11. Tire diameter: $\phi 381\text{mm} \sim \phi 1524\text{mm}$
12. Hydraulic working pressure: Max10Mpa
13. Hydraulic working medium: L-HM46
14. Spindle box stroke :500mm
15. Distance from center of spindle box to center of lifting arm :1270mm
16. Weight of spindle box: about 120kg
17. Lifting stroke of lifting arm :500mm
18. Rotation Angle of rotation arm :90°
19. Manual hoist load :300Kg
20. Length of equipment: about 2500mm
21. Width of equipment: about 2100mm
22. Height of equipment: about 3500mm
23. Total weight of equipment: about 1400kg

System composition and functions:

The equipment is mainly composed of mounting base, trailer assembly, lifting cylinder, clamping cylinder, rotary cylinder, lifting arm assembly, column assembly,

hoist beam assembly, torque spindle box beam assembly, upper and lower pressure plate assembly, torque spindle box assembly, hydraulic system, electrical control system and so on.



The installation base consists of pedal, rack, rack pressing plate, anchor bolt, and installation base plate, covering an area of 2480 x 2100mm.

The trailer assembly consists of a trailer frame, roller, drum 1 and drum 2. The trailer frame is welded from Angle steel and steel pipe. The roller is composed of roller body and bearing. Roller 1 and roller 2 are composed of roller shaft, roller and

bearing. Roller 1 bearing adopts common deep groove ball bearing, and the rotation direction is bidirectional. Roller 2 bearing is one-way bearing, the direction of rotation is one-way.

The operating temperature of the lifting cylinder assembly is -10° - 60° C, the operating speed is 8-300mm/S, and the operating pressure is 0.3-14mpa. The cylinder parameters are: cylinder diameter: 50mm, piston rod diameter: 25mm, stroke: 200mm. Under the condition of 70Kgf/cm³, the theoretical output is 1373Kgf on the thrust side and 1030kgf on the tension side.

The function of the column assembly is to support the hoist beam assembly, torque spindle box beam assembly, torque spindle box assembly and support the power supply signal line.

The function of hoist beam assembly is to support hoist, mainly composed of beam, wire frame, rotary seat, sports car, limit pin, hoist and so on. Parameters of hoist: rated load: 0.5t, lifting height; 6 meters, lifting speed 7.8 meters/min.

The function of torque spindle box beam assembly is to support the torque spindle box, which is mainly composed of beam, line clip, rotary seat, sports car, limit block, torque box bearing seat and so on.

Torque spindle box component is mainly composed of lift cylinder, cylinder oriented axis, a hood and a drive motor, preload adjustment knob, torque, torque shaft axis extension rod, manual handle, urgent stop switch, touch screen, guide shaft,



photoelectric sensor, the sensor, the small cylinder, linear bearings, grating ruler, spin around ball screw, handles, etc. The horizontal movement distance of the two torque shafts in the torque box is 210-570mm, which is driven by the servo motor. The rotary movement of the servo motor is changed into linear movement through the ball screw, and the torque shaft is driven to move horizontally on the left. The distance signal is detected by the grating ruler and the moving distance is controlled. The lifting cylinder controls the movement of the torque shaft in the vertical direction, and the movement stroke is 500mm, which is guaranteed by the lifting cylinder. Two torque shafts are equipped with a small cylinder, respectively, to control the relative displacement of the torque shaft itself, the displacement value of the torque shaft itself is a maximum of 70mm.

The tire assembly is mainly used to support and fix the tire to be loaded and unloaded, and fix the head of the tire to be loaded and unloaded bolt, so that the torque shaft of the torque machine can tighten the nut on the other side, and meet the requirements of the tire nut torque in the manual. When used, according to the number of tire bolts and bolt size specifications, need to choose different tire tooling components and the size of the sleeve used.

The rotating arm and lifting arm components are mainly composed of rotating arm, lifting arm, rotary cylinder and lifting cylinder. The function of the rotating arm is to install the tire to be assembled on the tooling assembly, and then rotate it to the station where the torque shaft works normally, and wait for the torque shaft to tighten the nut. The function of the lifting arm is to adapt to different tire thickness



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requirements, lifting the rotary arm to the appropriate position, so that the torque shaft can normally tighten the nut.