


厦门大学机器人队

先期培训 · 线路



厦门大学机器人队

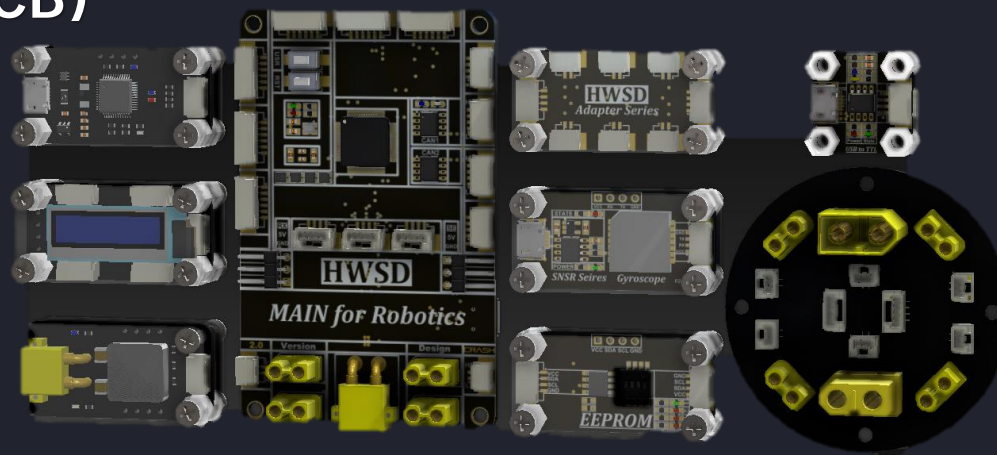
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- 电路组件
 - 气路组件
 - 电路布线
 - 气路布置

The background features a blue technical drawing on a grid. It includes two circular diagrams at the top, a rectangular diagram in the middle, and a larger mechanical assembly at the bottom. A small text box in the middle reads: "The M7000 Accessories Kit includes several items and a terminal block, creating a complete production system driven by four independent robots." The title "先期培训 · 线路" is in white and "电路组件" is in blue.

先期培训 · 线路 电路组件

电路组件

■ 电路板 (PCB)



电路组件

- 连接线
- 线规：AWG
- 常用AWG16、20、26

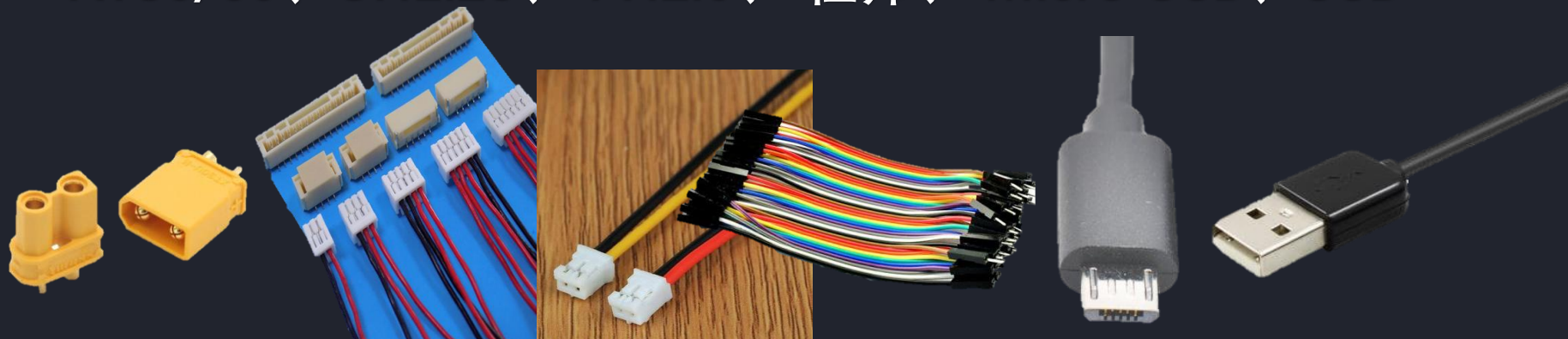


AWG	外径		截面积 (mm ²)	电阻值 (W/km)	正常电流 (A)	最大电流 (A)
	公制mm	英制inch				
4/0	11.68	0.46	107.22	0.17	423.200	482.566
3/0	10.4	0.4096	85.01	0.21	335.544	382.614
2/0	9.27	0.3648	67.43	0.26	266.158	303.495
1/0	8.25	0.3249	53.49	0.33	211.120	240.736
1	7.35	0.2893	42.41	0.42	167.389	190.870
2	6.54	0.2576	33.62	0.53	132.716	151.333
3	5.83	0.2294	26.67	0.66	105.249	120.013
4	5.19	0.2043	21.15	0.84	83.477	95.187
5	4.62	0.1819	16.77	1.06	66.175	75.458
6	4.11	0.162	13.3	1.33	52.488	59.851
7	3.67	0.1443	10.55	1.68	41.645	47.487
8	3.26	0.1285	8.37	2.11	33.025	37.657
9	2.91	0.1144	6.63	2.67	26.175	29.846
10	2.59	0.1019	5.26	3.36	20.767	23.680
11	2.3	0.0907	4.17	4.24	16.453	18.761
12	2.05	0.0808	3.332	5.31	13.057	14.889
13	1.82	0.072	2.627	6.69	10.368	11.822
14	1.63	0.0641	2.075	8.45	8.218	9.370
15	1.45	0.0571	1.646	10.6	6.521	7.436
16	1.29	0.0508	1.318	13.5	5.161	5.885
17	1.15	0.0453	1.026	16.3	4.104	4.680
18	1.02	0.0403	0.8107	21.4	3.248	3.704
19	0.912	0.0359	0.5667	26.9	2.578	2.939
20	0.813	0.032	0.5189	33.9	2.048	2.335
21	0.724	0.0285	0.4116	42.7	1.625	1.852
22	0.643	0.0253	0.3247	54.3	1.280	1.460
23	0.574	0.0226	0.2588	68.5	1.022	1.165
24	0.511	0.0201	0.2047	89.4	0.808	0.921
25	0.44	0.0179	0.1624	114.6	0.641	0.731
26	0.404	0.0159	0.1281	143	0.506	0.577

电路组件

■ 电路接头

■ XT30/60、GH1.25、PH2.0、杜邦、Micro USB、USB





The background features technical blueprints of a robotic welding system. At the top, there are two circular diagrams showing the layout of a robotic head with multiple torches. Below these, a rectangular diagram shows a control panel or interface. At the bottom, a larger diagram shows a robotic arm with a welding torch, labeled 'ROBOSHARC SYSTEM'. A small text box in the middle left reads: 'The ROBOSHARC Accessories Kit includes several cables and a terminal block, creating a complete production system driven by four independent robots.'

先期培训 · 线路 气路组件

气路组件

- 气瓶
- 高压：20MPa，200个大气压
- 高压气瓶需要配备恒压阀
- 低压：0.8MPa，8个大气压



气路组件

- 气管
- 外径：直径8、6、4mm
- 颜色：橙、蓝、黑、透明
- 材料：聚氨酯（PU）



气路组件

- 气动接头
- 螺纹+生料带防止漏气
- 生料带材料
- 聚四氟乙烯 (PTFE)



JPC
螺纹直通



JPCF
内螺纹直通



JPL
L型三通



JPLF
L型内螺纹



JPLL
加长L型



JPB
T正型三通



JPD
T侧型三通



JPX
Y型三通



JSL
L型节流阀



JPH
外六角接头



JLSA
管道阀



JPU
直通



JPV
L型三通



JPY
Y型三通



JPE
T型三通



JPM
隔板直通



JPZA
十字四通



JPK
五通



JPG
直通变径



JPW
Y三通变径



JPEG
T三通变径



JPKG
五通变径



The background features a blue technical drawing on a grid. It includes two circular diagrams at the top, a rectangular diagram in the middle, and a detailed mechanical assembly at the bottom. A small text box in the middle reads: "The M7000 Accessories Kit includes several items and a terminal block, creating a complete production system driven by four independent motors." The text "M7000" is visible on the mechanical assembly.

先期培训 · 线路 电路布线

电路布线

- 基本要求：静态连接完善+动态连接稳定
- 系统分析：结构位移+结构旋转+结构振动
- 事故：接触不良+掉线+短路
- 理线：电工胶+扎带+3M胶+缠绕管+拖链



The background features technical blueprints of a robotic welding system. At the top, there are two circular diagrams showing the layout of a robotic head with multiple torches. Below these, on the left, is a rectangular diagram of a control cabinet with four mounting points. To its right, a small text box reads: "The M7000 Accessories Kit includes several items and a terminal block, creating a complete production system driven by four independent robots." At the bottom, a larger diagram shows a robotic arm with a torch assembly, with the "MITSUBISHI ELECTRIC" logo visible on its side.

先期培训 · 线路 气路布置

气路布置

- 气路布置的规范性要求比电路布置更加严格!
- 气路一般与电路一起布置形成线束
- 接触不良（电路）->漏气（气路）
- 短路起火（电路）->过压爆破（气路）



感谢观看

自强不息 止于至善