

SUNVIM 孚日电机
—Electric Motor—

三相同步磁阻电动机

Three-phase synchronous reluctance motor



山东孚日电机科技有限公司
SHANDONG SUNVIM MOTOR CO., LTD.

产品简介

Product Presentation



SCZ系列同步磁阻电机是我公司研发的超高效电动机产品，采用新型助磁同步磁阻电机技术设计制造的全封闭、自扇风冷超高效三相助磁同步磁阻电动机。能效符合国标一级能效要求（IEC标准：IE5），具有体积小，效率高，起动转矩大，噪声振动低等特点。

电机内部不含稀土永磁材料，结构简单、稳定可靠。采用标准的中小型异步电动机机壳，安装尺寸符合IEC标准，易安装替换。是一种高效节能，节约稀土资源的高效电机驱动解决方案。可用于驱动各种通用机械设备，如风机、水泵、空压机、纺织机械等，满足各种工业自动化领域设备驱动需求。根据应用场景，SCZ系列同步磁阻系列电机可提供多种安装方式和多种冷却方式设计，实现客户个性化定制需求。

SCZ series synchronous reluctance motor is a super high efficiency TEFC motor developed by our company. It is designed with new magnetic-assisted synchronous reluctance motor technology. The efficiency comply to New GB 1 and IEC IE5 standard. It has the characteristics of compact structure, high efficiency, high starting torque low noise and low vibration.

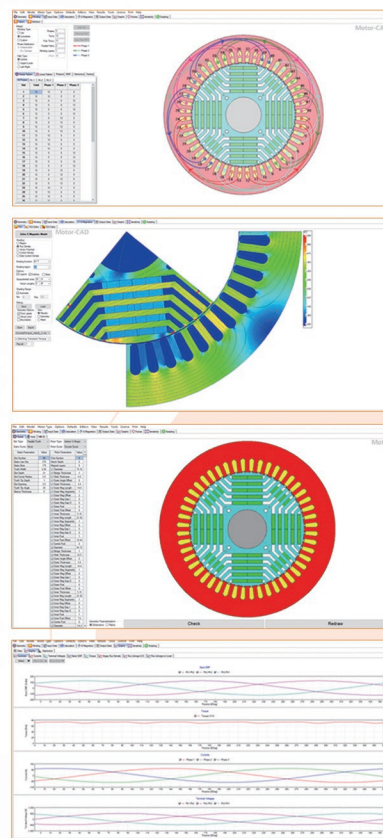
The motor does not contain magnet material of rare earth. The structure is more simple, stable and reliable. The house is the same as standard small and medium-sized asynchronous motor, and the dimension conforms to IEC standard. This makes it easy for installation and replacement. It is an efficient and energy-saving motor drive solution. It can be used to drive a variety of general mechanical equipment, such as fans, pumps, air compressors textile machinery and other industrial automatic drive system. SCZ series synchronous reluctance motors can offer a variety of installation methods and cooling methods, and provide different customization.

设计仿真

simulation design

使用专业的设计软件进行专业电机设计、电磁场有限元、振动噪音等分析等功能的综合设计与仿真。通过搭建科学、合理的电机磁路模型，电磁有限元模型，快速计算电磁，并结合实际运行的控制拓扑，模拟电机在各种控制策略下的运行特性。

The professional design software include motor design, finite element calculation, vibration and noise analysis and other comprehensive simulation. The building of scientific and reasonable motor magnetic circuit model, and electromagnetic finite element model assures a quick calculation of the electromagnetic. It can simulate the operation characteristics of motors in a variety of control systems with the combination of the actual control topology.



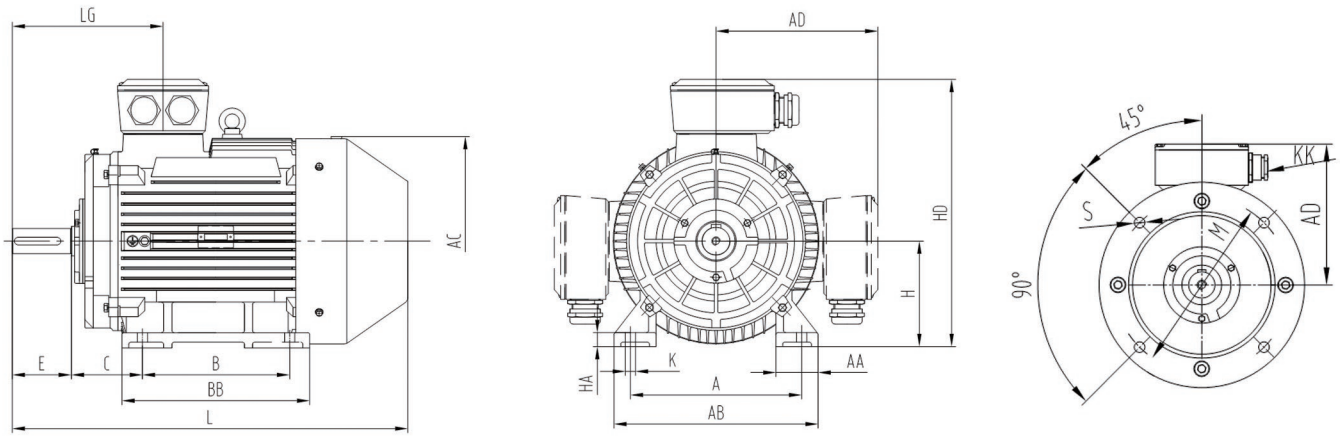
型号 Type	额定转速下的性能参数 Performance at nominal speed								
	额定功率 Output kW	能效等级 IEC class	效率 Efficiency %	功率因数 Power Factor COS ϕ	电流 Current	转矩 Torque	最大转矩/ 额定转矩 T_{01}/T_N	最大转速 Max Speed	控制器型号 Drive
					I_N/A	$T_N/N\cdot m$	NM	r/min	
SCZ4-132S1-30	5.5	IE4	90.9	0.88	10.0	17.5	1.5	3600	SD300-4T5.5B
SCZ4-132S2-30	7.5	IE4	91.7	0.88	13.5	23.9	1.5	3600	SD300-4T7.5B
SCZ4-160M1-30	11	IE4	92.6	0.89	19.6	35	1.5	3600	SD300-4T11B
SCZ4-160M2-30	15	IE4	93.3	0.89	26.5	47.8	1.5	3600	SD300-4T15B
SCZ4-160L-30	18.5	IE4	93.7	0.89	32.6	58.9	1.5	3600	SD300-4T18.5B
SCZ4-180M-30	22	IE4	94	0.89	38.6	70	1.5	3600	SD300-4T22
SCZ4-200L1-30	30	IE4	94.5	0.89	52.4	96	1.5	3600	SD300-4T30
SCZ4-200L2-30	37	IE4	94.8	0.89	64.4	118	1.5	3600	SD300-4T37
SCZ4-225M-30	45	IE4	95	0.89	78.1	143	1.5	3600	SD300-4T45
SCZ4-250M-30	55	IE4	95.3	0.89	95.2	175	1.5	3600	SD300-4T55
SCZ4-280S-30	75	IE4	95.6	0.89	129.4	239	1.5	3600	SD300-4T75
SCZ4-280M-30	90	IE4	95.8	0.89	155.0	287	1.5	3600	SD300-4T90
SCZ4-315S-30	110	IE4	96	0.89	189.0	350	1.5	3600	SD300-4T110
SCZ4-315M-30	132	IE4	96.2	0.89	226.4	420	1.5	3600	SD300-4T132
SCZ4-315L1-30	160	IE4	96.3	0.89	274.1	509	1.5	3600	SD300-4T160
SCZ4-315L2-30	200	IE4	96.5	0.89	341.9	637	1.5	3600	SD300-4T200

SCZ5-132S1-30	5.5	IE5	92.6	0.88	11	17.5	1.5	3600	SD300-4T5.5B
SCZ5-132S2-30	7.5	IE5	93.3	0.88	15.4	23.9	1.5	3600	SD300-4T7.5B
SCZ5-160M1-30	11	IE5	94	0.89	21.6	35	1.5	3600	SD300-4T11B
SCZ5-160M2-30	15	IE5	94.5	0.89	29.4	47.8	1.5	3600	SD300-4T15B
SCZ5-160L-30	18.5	IE5	94.9	0.89	36.5	58.9	1.5	3600	SD300-4T18.5B
SCZ5-180M-30	22	IE5	95.1	0.89	43.2	70	1.5	3600	SD300-4T22
SCZ5-200L1-30	30	IE5	95.5	0.89	58	96	1.5	3600	SD300-4T30
SCZ5-200L2-30	37	IE5	95.8	0.89	70.6	118	1.5	3600	SD300-4T37
SCZ5-225M-30	45	IE5	93	0.89	88.5	143	1.5	3600	SD300-4T45
SCZ5-250M-30	55	IE5	96.2	0.89	104.8	175	1.5	3600	SD300-4T55
SCZ5-280S-30	75	IE5	96.5	0.89	141	239	1.5	3600	SD300-4T75
SCZ5-280M-30	90	IE5	96.6	0.89	168	287	1.5	3600	SD300-4T90
SCZ5-315S-30	110	IE5	96.8	0.89	204	350	1.5	3600	SD300-4T110
SCZ5-315M-30	132	IE5	96.9	0.89	244	420	1.5	3600	SD300-4T132
SCZ5-315L1-30	160	IE5	97	0.89	300	509	1.5	3600	SD300-4T160
SCZ5-315L2-30	200	IE5	97.2	0.89	375	637	1.5	3600	SD300-4T200

型号 Type	额定转速下的性能参数 Performance at nominal speed								
	额定功率 Output kW	能效等级 IEC class	效率 Efficiency %	功率因数 Power Factor cosφ	电流 Current	转矩 Torque	最大转矩/ 额定转矩 T_o/T_N	最大转速 Max Speed	控制器型号 Drive
					I_N/A	$T_N/N\cdot m$	NM	r/min	
SCZ4-132S1-15	5.5	IE4	91.9	0.8	9.90	35	1.5	1800	SD300-4T5.5B
SCZ4-132M1-15	7.5	IE4	92.6	0.81	13.4	47.8	1.5	1800	SD300-4T7.5B
SCZ4-160M1-15	11	IE4	93.3	0.83	19.4	70	1.5	1800	SD300-4T11B
SCZ4-160L-15	15	IE4	93.9	0.84	26.4	95.5	1.5	1800	SD300-4T15B
SCZ4-180M-15	18.5	IE4	94.2	0.85	32.4	118	1.5	1800	SD300-4T18.5
SCZ4-180L-15	22	IE4	94.5	0.85	38.4	140	1.5	1800	SD300-4T22
SCZ4-200L1-15	30	IE4	94.9	0.89	52.1	191	1.5	1800	SD300-4T30
SCZ4-225S-15	37	IE4	95.2	0.85	64.1	236	1.5	1800	SD300-4T37
SCZ4-225M-15	45	IE4	95.4	0.85	77.8	287	1.5	1800	SD300-4T45
SCZ4-250M-15	55	IE4	95.7	0.86	94.8	350	1.5	1800	SD300-4T55
SCZ4-280S-15	75	IE4	96	0.87	128.9	478	1.5	1800	SD300-4T75
SCZ4-280M-15	90	IE4	96.1	0.88	154.5	573	1.5	1800	SD300-4T90
SCZ4-315S-15	110	IE4	96.3	0.89	188.4	700	1.5	1800	SD300-4T110
SCZ4-315M-15	132	IE4	96.4	0.89	225.9	840	1.5	1800	SD300-4T132
SCZ4-315L1-15	160	IE4	96.6	0.89	273.2	1019	1.5	1800	SD300-4T160
SCZ4-315L2-15	200	IE4	96.7	0.9	341.2	1273	1.5	1800	SD300-4T200
SCZ5-132S1-15	5.5	IE5	93.4	0.80	11.1	35	1.5	1800	SD300-4T5.5B
SCZ5-132M1-15	7.5	IE5	94	0.81	15.2	47.8	1.5	1800	SD300-4T7.5B
SCZ5-160M1-15	11	IE5	93	0.83	21	70	1.5	1800	SD300-4T11B
SCZ5-160L-15	15	IE5	95.1	0.84	29.5	95.5	1.5	1800	SD300-4T15B
SCZ5-180M-15	18.5	IE5	95.3	0.85	36.5	118	1.5	1800	SD300-4T18.5
SCZ5-180L-15	22	IE5	95.5	0.85	42.5	140	1.5	1800	SD300-4T22
SCZ5-200L1-15	30	IE5	95.9	0.89	57.6	191	1.5	1800	SD300-4T30
SCZ5-225S-15	37	IE5	96.1	0.85	72	236	1.5	1800	SD300-4T37
SCZ5-225M-15	45	IE5	96.3	0.85	87	287	1.5	1800	SD300-4T45
SCZ5-250M-15	55	IE5	96.5	0.86	105.5	350	1.5	1800	SD300-4T55
SCZ5-280S-15	75	IE5	96.7	0.87	138.1	478	1.5	1800	SD300-4T75
SCZ5-280M-15	90	IE5	96.9	0.88	166	573	1.5	1800	SD300-4T90
SCZ5-315S-15	110	IE5	97	0.89	208	700	1.5	1800	SD300-4T110
SCZ5-315M-15	132	IE5	97.1	0.89	249	840	1.5	1800	SD300-4T132
SCZ5-315L1-15	160	IE5	97.2	0.89	300	1019	1.5	1800	SD300-4T160
SCZ5-315L2-15	200	IE5	97.4	0.9	374	1273	1.5	1800	SD300-4T200

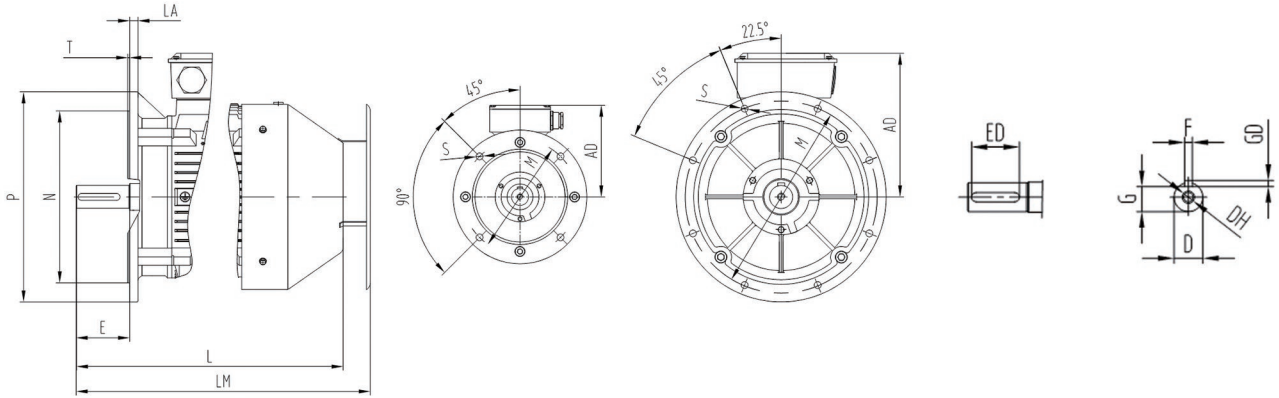
型号 Type	额定转速下的性能参数 Performance at nominal speed								
	额定功率 Output kW	能效等级 IEC class	效率 Efficiency %	功率因数 Power Factor cosφ	电流 Current	转矩 Torque	最大转矩/ 额定转矩 T_o/T_N	最大转速 Max Speed	控制器型号 Drive
					I_N/A	$T_N/N\cdot m$	NM	r/min	
SCZ4-132S1-10	3	IE4	88.6	0.71	5.6	29	1.5	1200	SD300-4T3.0B
SCZ4-132M1-10	4	IE4	89.5	0.72	7.4	38	1.5	1200	SD300-4T5.5B
SCZ4-132M2-10	5.5	IE4	90.5	0.72	10.0	53	1.5	1200	SD300-4T5.5B
SCZ4-160M1-10	7.5	IE4	91.3	0.76	13.6	72	1.5	1200	SD300-4T7.5B
SCZ4-160L-10	11	IE4	92.3	0.77	19.7	105	1.5	1200	SD300-4T11B
SCZ4-180L-10	15	IE4	92.9	0.8	26.6	143	1.5	1200	SD300-4T15
SCZ4-200L1-10	18.5	IE4	93.4	0.8	32.7	177	1.5	1200	SD300-4T18.5
SCZ4-200L2-10	22	IE4	93.7	0.81	38.7	210	1.5	1200	SD300-4T22
SCZ4-225M-10	30	IE4	94.2	0.82	52.5	287	1.5	1200	SD300-4T30
SCZ4-250M-10	37	IE4	94.5	0.83	64.6	353	1.5	1200	SD300-4T37
SCZ4-280S-10	45	IE4	94.8	0.83	78.3	430	1.5	1200	SD300-4T45
SCZ4-280M-10	55	IE4	95.1	0.84	95.4	525	1.5	1200	SD300-4T55
SCZ4-315S-10	75	IE4	95.4	0.84	129.7	716	1.5	1200	SD300-4T75
SCZ4-315M-10	90	IE4	95.6	0.85	155.3	860	1.5	1200	SD300-4T90
SCZ4-315L1-10	110	IE4	95.8	0.85	189.4	1051	1.5	1200	SD300-4T110
SCZ4-315L2-10	132	IE4	96	0.86	226.8	1261	1.5	1200	SD300-4T132
SCZ5-132S1-10	3	IE5	90.6	0.71	6.4	29	1.5	1200	SD300-4T3.0B
SCZ5-132M1-10	4	IE5	91.4	0.72	8.3	38	1.5	1200	SD300-4T5.5B
SCZ5-132M2-10	5.5	IE5	92.2	0.72	11.3	53	1.5	1200	SD300-4T5.5B
SCZ5-160M1-10	7.5	IE5	92.9	0.76	14.5	72	1.5	1200	SD300-4T7.5B
SCZ5-160L-10	11	IE5	93.7	0.77	21.3	105	1.5	1200	SD300-4T11B
SCZ5-180L-10	15	IE5	94.3	0.8	29.5	143	1.5	1200	SD300-4T15
SCZ5-200L1-10	18.5	IE5	94.6	0.8	35.5	177	1.5	1200	SD300-4T18.5
SCZ5-200L2-10	22	IE5	94.9	0.81	42	210	1.5	1200	SD300-4T22
SCZ5-225M-10	30	IE5	95.3	0.82	57.6	287	1.5	1200	SD300-4T30
SCZ5-250M-10	37	IE5	95.6	0.83	68.8	353	1.5	1200	SD300-4T37
SCZ5-280S-10	45	IE5	95.8	0.83	86.6	430	1.5	1200	SD300-4T45
SCZ5-280M-10	55	IE5	96	0.84	107.5	525	1.5	1200	SD300-4T55
SCZ5-315S-10	75	IE5	96.3	0.84	147	716	1.5	1200	SD300-4T75
SCZ5-315M-10	90	IE5	96.5	0.85	165.6	860	1.5	1200	SD300-4T90
SCZ5-315L1-10	110	IE5	96.6	0.85	206.2	1051	1.5	1200	SD300-4T110
SCZ5-315L2-10	132	IE5	96.8	0.86	244.5	1261	1.5	1200	SD300-4T132

B3 外形及安装尺寸 Dimensions Mount B3



机座号 Frame	转速 Speed	中心高 H	底脚安装 Foot Mounting				轴伸 Shaft Extension							底脚尺寸 Foot Size				整机外形尺寸 Overall dimensions							
			A	B	C	D	E	ED	F	G	GD	DH	HA	AA	AB	BB	AC	AD	HD	LA	LG	L	LM	KK	
132S	1000~3000	132	216	140	89	38	80	56	10	33	8	M12*28	16	52	265	220	275	225	355	13	167	485	535	M32*1.5	
132M	1000~3000	132	216	178	89	38	80	56	10	33	8	M12*28	16	52	265	258	275	225	355	13	167	525	575	M32*1.5	
160M	1000~3000	160	254	210	108	42	110	80	12	37	8	M16*36	19	65	320	325	330	265	425	15	268	665	720	M40*1.5	
160L	1000~3000	160	254	254	108	42	110	80	12	37	8	M16*36	19	65	320	325	330	265	425	15	268	665	720	M40*1.5	
180M	1000~3000	180	279	241	121	48	110	80	14	42.5	9	M16*36	22	70	350	335	380	285	465	15	277	730	785	M40*1.5	
180L	1000~3000	180	279	279	121	48	110	80	14	42.5	9	M16*36	22	70	350	335	380	285	465	15	277	730	785	M40*1.5	
200L	1000~3000	200	318	305	133	55	110	90	16	49	10	M20*42	25	80	390	355	420	310	510	17	298	790	860	M50*1.5	
225S	1000~1500	225	356	286	149	60	140	100	18	53	11	M20*42	28	75	435	350	465	335	560	19	338	840	910	M50*1.5	
225M	3000	225	356	311	149	55	110	80	16	49	10	M20*42	28	75	435	375	465	335	560	19	338	865	935	M50*1.5	
225M	1000~1500	225	356	311	149	60	140	100	18	53	11	M20*42	28	75	435	375	465	335	560	19	338	865	935	M50*1.5	
250M	3000	250	406	349	168	60	140	100	18	53	11	M20*42	33	100	485	450	520	385	635	20	360	945	1025	M63*1.5	
250M	1000~1500	250	406	349	168	65	140	100	18	53	11	M20*42	33	100	485	450	520	385	635	20	360	945	1025	M63*1.5	
280S	3000	280	457	368	190	65	140	100	18	53	11	M20*42	35	100	550	490	570	415	695	22	344	990	1080	M63*1.5	
280S	1000~1500	280	457	368	190	75	140	100	20	67.5	12	M20*42	35	105	550	490	570	415	695	22	344	990	1080	M63*1.5	
280M	3000	280	457	419	190	65	140	100	18	58	11	M20*42	35	105	550	540	570	415	695	22	344	1045	1125	M63*1.5	
280M	1000~1500	315	457	419	190	75	140	100	20	67.5	12	M20*42	35	105	550	540	570	415	695	22	344	1045	1125	M63*1.5	
315S	3000	315	508	406	216	65	140	100	18	58	11	M20*42	45	125	630	515	650	490	805	24	417	1185	1285	M63*1.5	
315M	3000	315	508	457	216	65	140	100	18	58	11	M20*42	45	125	630	625	650	490	805	24	417	1295	1395	M63*1.5	
315L	3000	315	508	508	16	65	140	100	18	58	11	M20*42	45	125	630	625	650	490	805	24	417	1295	1395	M63*1.5	
315S	1000~1500	315	508	406	216	80	170	130	22	71	14	M20*42	45	125	630	515	650	490	805	24	417	1185	1315	M63*1.5	
315M	1000~1500	315	508	457	216	80	170	130	22	71	14	M20*42	45	125	630	625	650	490	805	24	417	1325	1425	M63*1.5	
315L	1000~1500	315	508	508	216	80	170	130	22	71	14	M20*42	45	125	630	625	650	490	805	24	417	1325	1425	M63*1.5	

B5 外形及安装尺寸 Dimensions Mount B5



机座号 Frame	转速 Speed	中心高 H	轴伸 Shaft Extension							法兰 Flange					整机外形尺寸 Overall dimensions							
			D	E	ED	F	G	GD	DH	M	N	P	S	T	AC	AD	HD	LA	LG	L	LM	KK
132S	1000~3000	132	38	80	56	10	33	8	M12*28	265	230	300	14.5	4	275	225	355	13	167	485	535	M32*1.5
132M	1000~3000	132	38	80	56	10	33	8	M12*28	265	230	300	14.5	4	275	225	355	13	167	525	575	M32*1.5
160M	1000~3000	160	42	110	80	12	37	8	M16*36	300	250	350	14.5	5	330	265	425	15	268	665	720	M40*1.5
160L	1000~3000	160	42	110	80	12	37	8	M16*36	300	250	350	18.5	5	330	265	425	15	268	665	720	M40*1.5
180M	1000~3000	180	48	110	80	14	42.5	9	M16*36	300	250	350	18.5	5	380	285	465	15	277	730	785	M40*1.5
180L	1000~3000	180	48	110	80	14	42.5	9	M16*36	300	250	350	18.5	5	380	285	465	15	277	730	785	M40*1.5
200L	1000~3000	200	55	110	90	16	49	10	M20*42	350	300	400	18.5	5	420	310	510	17	298	790	860	M50*1.5
225S	1000~1500	225	60	140	100	18	53	11	M20*42	400	350	450	18.5	5	465	335	560	19	338	840	910	M50*1.5
225M	3000	225	55	110	80	16	49	10	M20*42	400	350	450	18.5	5	465	335	560	19	338	865	935	M50*1.5
225M	1000~1500	225	60	140	100	18	53	11	M20*42	400	350	450	18.5	5	465	335	560	19	338	865	935	M50*1.5
250M	3000	250	60	140	100	18	53	11	M20*42	500	450	550	18.5	5	520	385	635	20	360	945	1025	M63*1.5
250M	1000~1500	250	65	140	100	18	53	11	M20*42	500	450	550	18.5	5	520	385	635	20	360	945	1025	M63*1.5
280S	3000	280	65	140	100	18	53	11	M20*42	500	450	550	18.5	5	570	415	695	22	344	990	1080	M63*1.5
280S	1000~1500	280	75	140	100	20	67.5	12	M20*42	500	450	550	18.5	5	570	415	695	22	344	990	1080	M63*1.5
280M	3000	280	65	140	100	18	58	11	M20*42	500	450	550	18.5	5	570	415	695	22	344	1045	1125	M63*1.5
280M	1000~1500	315	75	140	100	20	67.5	12	M20*42	500	450	550	18.5	5	570	415	695	22	344	1045	1125	M63*1.5
315S	3000	315	65	140	100	18	58	11	M20*42	600	550	660	24	6	650	490	805	24	417	1185	1285	M63*1.5
315M	3000	315	65	140	100	18	58	11	M20*42	600	550	660	24	6	650	490	805	24	417	1295	1395	M63*1.5
315L	3000	315	65	140	100	18	58	11	M20*42	600	550	660	24	6	650	490	805	24	417	1295	1395	M63*1.5
315S	1000~1500	315	80	170	130	22	71	14	M20*42	600	550	660	24	6	650	490	805	24	417	1185	1315	M63*1.5
315M	1000~1500	315	80	170	130	22	71	14	M20*42	600	550	660	24	6	650	490	805	24	417	1325	1425	M63*1.5
315L	1000~1500	315	80	170	130	22	71	14	M20*42	600	550	660	24	6	650	490	805	24	417	1325	1425	M63*1.5

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