

Tank Capacitors and DC Filter Capacitors

for Induction Heating Machine and Melting Furnace

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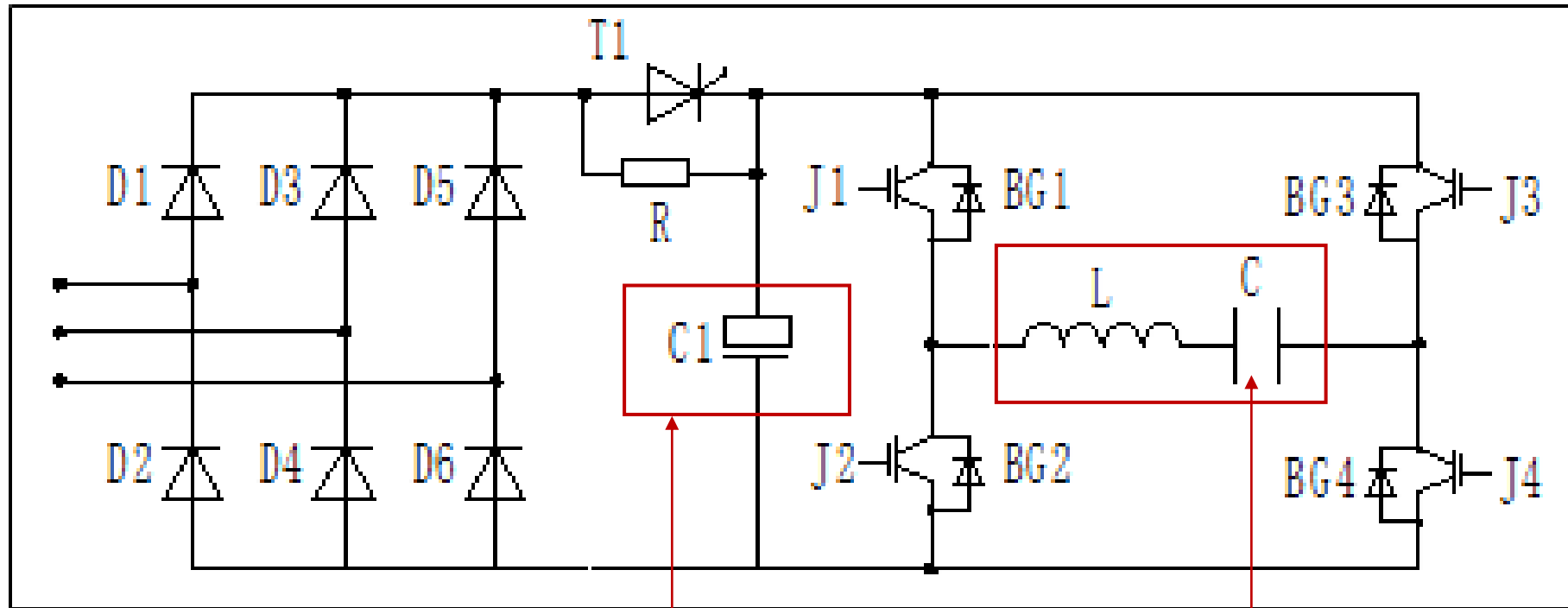


www.ty-induction.com



1. Tank or Resonant Capacitors used in Induction Heating Machine work as an energy storage component in LC oscillation circuit. They are connected in series or in parallel with Induction coil to generate high frequency alternating current. The capacitance and number of capacitors depends on the power and frequency of induction equipment as well as the quality factor.
2. DC Filter Capacitors also work as an energy storage component as well as filter part in DC circuit of Induction Heating Equipment

.Below is a typical circuit: **IGBT based LC Series Resonant Circuit**



C 1: DC Filter Capacitor **C:** Tank Capacitor / Resonant Capacitor

Tank Capacitors are used in Induction Heating Machine



Resonant Capacitors used in Induction Heating Machine 1000kw

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Tank Capacitors for Induction Heating & Melting

Product Description

Tank capacitors are also known as resonant capacitors. Typically, they are water-cooled with a polypropylene film (dielectric) sandwiched between high-purity aluminum foils (electrodes). These windings are flattened and assembled into a package for soldering and electrical connections. The entire assembly is under a very high vacuum where it is impregnated with a non-PCB electrical grade insulating oil. There are high thermal conductivity copper pipes inside the aluminum shell to facilitate the flow of cooling water. Effective heat dissipation is critical to achieve the desired capacitor operating temperature and life expectancy.

TY Induction is a global supplier of water cooled and air cooled capacitors to the induction heating and melting industries with a wide range of capacitors up to 5000 volts, 100khz and 4800 amps. Our manufacturing facility utilizes a state of the art fully automatic winding machine located in a clean room. Precisely controlled winding and assembly environments provide the highest quality and reliability. All capacitors are electrically tested and build leak tested. This 100% testing combined with our analytical data evaluation system allows for continuous process improvement. These measures provide the lowest leak and electrical failure rates in the industry. Our capacitors are ISO 9001-2008 and CE certified.

Product Scope:

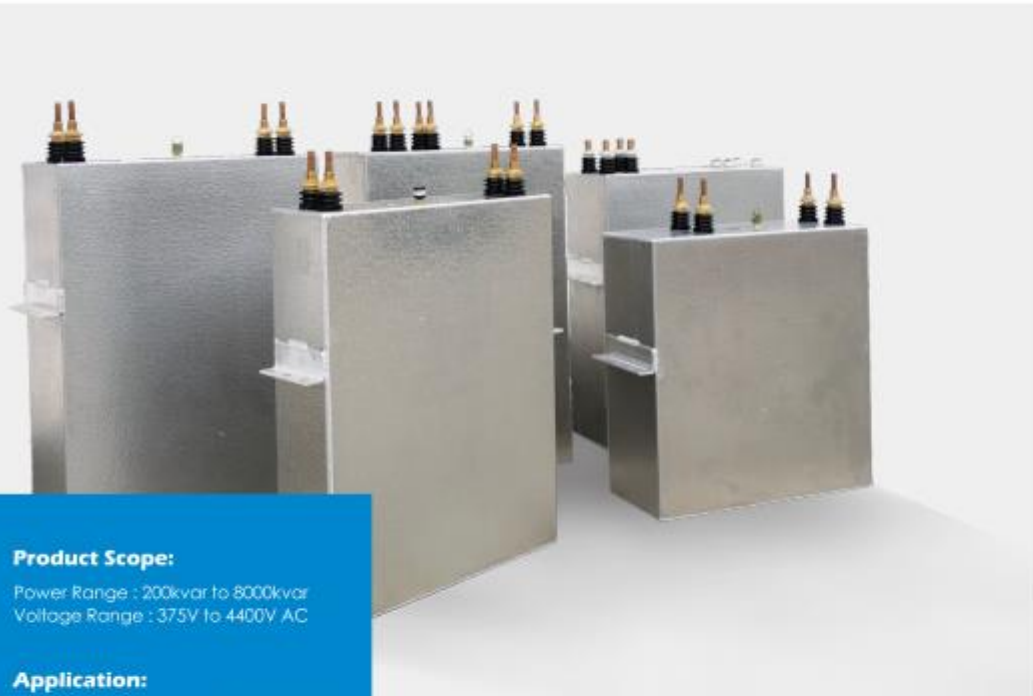
Power Range : 200kvar to 8000kvar
Voltage Range : 375V to 4400V AC

Application:

The capacitors are applicable for indoor use and intended to be used for power factor correction in induction heating, melting, stirring or casting furnaces; also for tune special furnace circuits.

Quality Assurance System:

ISO 9001:2008 ,CE



Induction Heating & Melting Capacitors

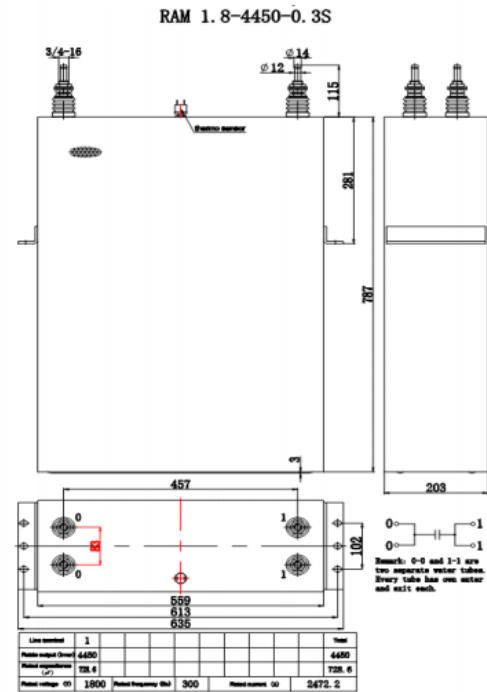
Construction:

Dielectric material: Polypropylene film
 Aluminum case, Side board 2mm, Cover and Base 3mm. Live or Dead case on request.
 Terminals material: Copper
 Insulation Oil: PEPE or C101 for high frequency capacitors ; Rapeseed oil for DC capacitors (Non-PCB, Environmentally friendly, non-toxic biodegradable)
 Mounting position: Vertically or Horizontal with proper support for the weight of the capacitor.

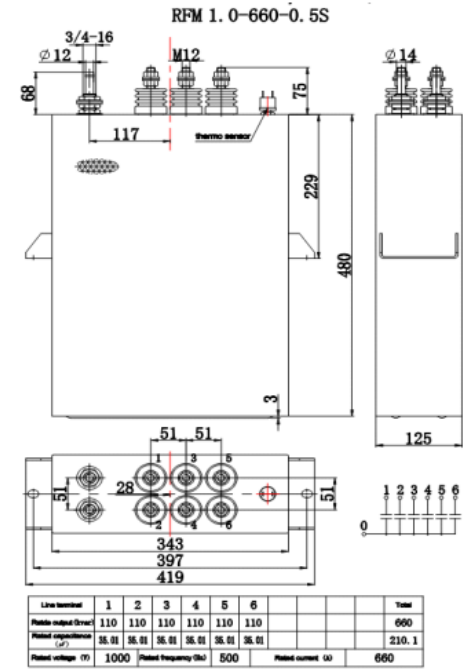
Technical Data and Limit Values:

Standards :	GB/T 3984.1-2004 / IEC 60110-1:1998
Location:	Indoor use, no more than 1000m altitude.
Ambient air temperature:	-20/+50° C
Capacitance tolerance:	-5 / +10 %
Over- voltage:	Rated voltage x 1.05 (12h per day)
Over- current:	Rated current x 1.15
Cooling methods:	water cooling
Water flow rate:	6L/min
Max. inlet water temperature:	30° C
Max. outlet water temperature:	45° C
Pressure switch (on request):	Normal close (NC) type
Discharge device (on request):	Less than 75V in 3min

Bulk Design

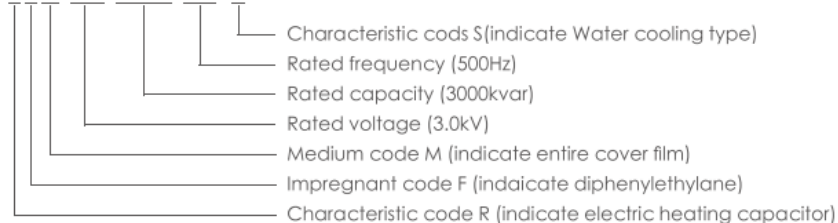


Vernier Design



RFM 3.0-3000-0.5 S

Explanation of Part Numbers



Product list


TYPE	UN	CN	FN	QN	IN	Dimension
	(V)	(UF)	(HZ)	(VAR)	(A)	L*W*H(mm)
RFM0.6-97.92-10S	600	4.3	10000	97.92	163.2	170*140*155
RFM0.6-1388-0.3S	600	2045	300	1388	2313.33	559*191*787
RFM0.8-1200-3S	800	99.5	3000	1200	1500	343*130*330
RFM0.8-1412-10S	800	35.1	10000	1412	1765	343*105*330
RFM0.8-1500-10S	800	37.3	10000	1500	1875	343*105*330
RFM1.1-1650-3S	1100	72.3	3000	1650	1500	343*105*330
RFM0.75-1875-0.667S	750	795.4	667	1875	2500	343*159*680
RFM0.8-840-40S	800	5.22	40000	840	1050	395*105*225
RFM0.8-1000-8S	800	31.1	8000	1000	1250	343*105*178
RFM0.8-1900-1S	800	472.5	1000	1900	2375	343*159*445
RFM0.9-1250-10S	900	24.56	10000	1250	1388.9	335*125*200
RFM1.0-1200-3S	1000	63.7	3000	1200	1200	343*105*330
RFM1.0-1200-9.6S	1000	19.9	9600	1200	125	343*105*330
RFM1.0-1105-100S	1000	1.759	100000	1105	1105	336*126*300
RFM1.0-2000-0.5S	1000	637	500	2000	2000	559*191*330
RAM1.0-4800-1.2S	1000	637	1200	4800	4800	559*203*711
RFM1.1-1650-3S	1100	72.3	3000	1650	1500	343*105*330
RFM1.1-2750-0.3S	2750	1205.7	300	2750	2500	559*191*525
RFM1.2-1200-10S	1200	13.3	10000	1200	1000	343*105*178
RFM1.25-965-0.1S	1250	985	100	965	772	559*203*711
RFM1.25-1200-1.2S	1250	40.7	1200	1200	960	343*105*229
RFM1.25-1200-3S	1250	40.7	3000	1200	960	343*105*229
RFM1.25-1200-25S	1250	4.9	25000	1200	960	343*156*362
RFM1.25-2000-1.2S	1250	169.8	1200	2000	1600	343*133*387
RFM1.25-2500-15S	1250	17.0	15000	2500	2000	343*133*387
RFM1.25-2600-3S	1250	88.3	3000	2600	2080	343*155*330
RFM1.25-2600-10S	1250	26.5	10000	2600	2080	343*105*330

TYPE	UN	CN	FN	QN	IN	Dimension
	(V)	(UF)	(HZ)	(VAR)	(A)	L*W*H(mm)
RFM1.25-2900-0.3S	1250	985	300	2900	2321	559*203*711
RFM1.25-3000-1S	1250	305.6	1000	3000	2400	343*159*508
RFM1.25-3000-3S	1250	101.9	3000	3000	2400	343*130*343
RFM1.25-3000-10S	1250	30.6	10000	3000	2400	343*133*330
RFM1.25-4200-0.5S	1250	856	500	4200	3360	559*203*711
RFM1.5-2333-3S	1500	55.0	3000	2333	1555	343*105*330
RFM1.5-7200-1.2S	1250	424.4	1200	7200	5760	559*159*546
RFM1.8-3000-15S	1800	9.8	15000	3000	1667	559*130*387
RFM1.8-3000-35S	1800	4.2	35000	3000	1667	343*130*387
RFM1.8-4000-0.3S	1800	650	300	4000	2222.22	559*203*787
RFM1.8-4320-1.2S	1800	176.8	1200	4320	2400	330*153*670
RFM1.8-5167-1.8S	1800	141	1800	5167	2870.6	343*200*615
RFM1.8-6000-0.35S	1800	589.8	350	6000	333.3	559*203*770
RFM1.8-4320-1.2S	1800	177	1200	4320	2400	599*152*343
RFM1.89-4763-1.2S	1890	176.8	1200	4763	2520	343*165*675
RFM2.0-3000-3S	2000	39.8	3000	3000	1500	343*130*330
RFM2.0-3016-30S	2000	3016	30000	3016	1508	343*130*387
RFM2.0-3214-0.25S	2000	511.5	250	3214	1607	559*203*711
RFM2.0-4000-0.3S	2000	531	300	4000	2000	559*191*711
RFM2.2-3960-3S	2200	43.4	3000	3960	1800	343*130*387
RFM2.2-2600-40S	2200	2.1	40000	2600	1182	343*130*387
RFM2.27-5464-30S	2270	5.625	30000	5464	2520	440*126*375
RFM2.4-1500-0.2S	2400	207	200	1500	625	343*159*711
RFM2.4-4300-0.4S	2400	173	400	4300	1042	343*159*711
RFM2.4-4300-0.3S	2400	396	300	4300	1791.66	559*203*813
RFM2.5-4780-0.5S	2500	244	500	4780	1912	559*191*711
RFM2.5-6000-0.3S	2500	509.3	300	6000	2400	559*191*787
RFM2.5-6000-1.5S	2500	101.9	1500	6000	2400	343*159*711

TYPE	UN	CN	FN	QN	IN	Dimension
	(V)	(UF)	(HZ)	(VAR)	(A)	L*W*H(mm)
RFM2.8-4000-0.3S	2800	271	300	4000	1428.57	559*203*711
RFM2.8-4800-0.4S	2800	244	400	4800	1715	559*191*711
RFM2.8-7310-0.7S	2800	212	700	7310	2610.7	559*175*711
RFM2.8-8000-0.35S	2800	464	350	8000	2857.1	559*207*850
RFM3.0-1500-6S	3000	4.4	6000	1500	500	343*105*330
RFM3.0-3000-20S	3000	2.7	20000	3000	1000	343*130*387
RFM3.0-2000-50S	3000	0.7	50000	2000	666.66	343*156*330
RFM3.0-3900-6S	3000	11.5	6000	3900	1300	343*105*387
RFM3.0-3500-10S	3000	6.2	10000	3500	1167	343*156*400
RFM3.0-5350-0.3S	3000	315.4	300	5350	1783.33	559*203*787
RFM3.0-5900-0.5S	3000	209	500	5900	1980	559*191*610
RFM3.0-6000-0.5S	3000	212	500	6000	2000	559*203*591
RFM3.0-6000-0.3S	3000	353.6	300	6000	2000	559*191*787
RFM3.0-6921-1.2S	3000	102	1200	6921	2307	343*175*711
RFM3.0-7200-0.6S	3000	255	600	7200	2500	559*191*787
RFM3.0-7200-1.2S	3000	106.1	1200	7200	2400	335*200*715
RFM3.0-7804-1.2S	3000	115	1200	7804	2601	343*175*711
RFM3.0-13400-1.2S	3000	197.5	1200	13400	4466.7	559*203*787
RFM3.05-7500-0.7S	3050	183.3	700	7500	2459	559*175*711
RFM3.1-3950-0.25S	3100	261.8	250	3950	1274	559*178*711
RFM 3.3-3300-0.3S	3300	160.8	300	3300	1000	559*191*711
RFM 3.3-6160-0.5S	3300	180.1	500	6160	1866.66	559*203*711
RFM 3.3-7350-1.5S	3300	71.6	1500	7350	2227.27	343*159*711
RFM 3.5-7130-0.5S	3500	185.3	500	7130	2037	559*203*711
RFM 3.5-8333-0.5S	3500	217	500	8333	2381	559*209*711
RFM 4.0-6333-0.6S	4000	105	600	6333	1583.25	559*203*711
RFM 4.0-8333-0.5S	4000	166	500	8333	2083	559*203*711
RFM 4.4-7260-0.6S	4400	99.5	700	7260	1650	559*191*880
RFM 4.4-8515-0.5S	4400	140	500	8515	193.5	559*203*835
RFM5.0-10400-0.5S	5000	132.4	500	10400	2080	559*215*940



DC Filter Capacitors



Product Scope:

Power Range : up to 5000 μ F
Voltage Range : 450V to 1800V

Application:

These capacitors are designed for use on DC supplies and are intended to protect the network from momentary voltage spikes and surges and for filtering out AC ripple.

Quality Assurance System:

ISO 9001:2008 ,CE



Construction:

Dielectric material: metallized film

Aluminum case, Side board 2mm, Cover and Base 3mm. Live or Dead case on request.

Terminals material: Copper

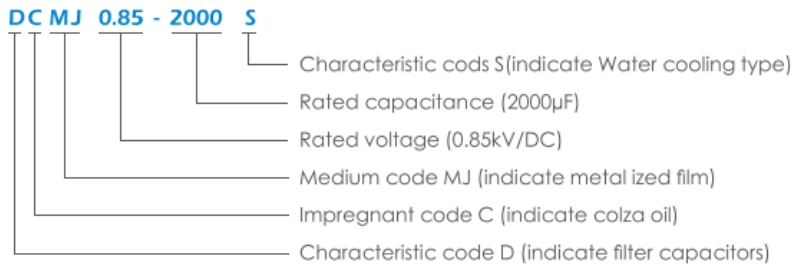
Insulation Oil: Rapeseed oil for DC capacitors (Non- PCB, Environmentally friendly, non-toxic biodegradable)

Mounting position: Vertically or Horizontal with proper support for the weight of the capacitor.

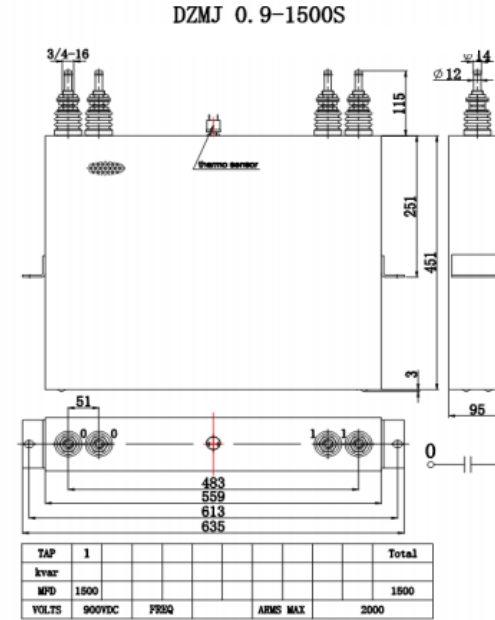
Technical Data and Limit Values:

Standards :	GB/T 12747 / IEC60831
Location:	Indoor use
Ambient air temperature:	-25/+50° C
Capacitance tolerance:	-5 / +10 %
Over- voltage:	Rated voltage x 1.0 (12h per day)
Over- current:	Rated current x 1.1
Cooling methods:	water cooling
Water flow rate:	6L/min
Max. inlet water temperature:	30° C
Max. outlet water temperature:	45° C
Pressure switch (on request):	Normal close (NC) type
Discharge device (on request):	Less than 75V in 3min

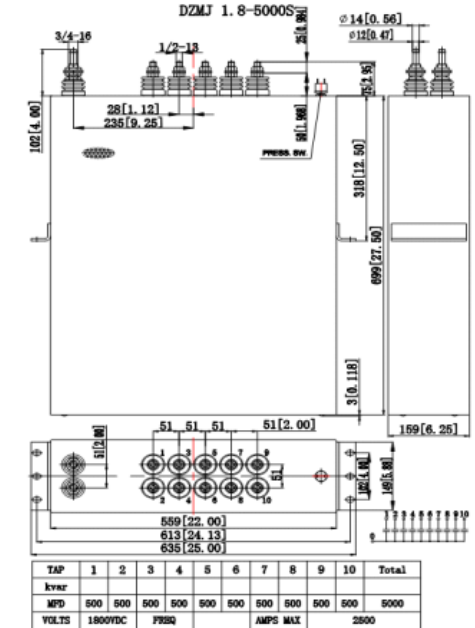
Explanation of Part Numbers



Bulk Design



Vernier Design



Product list

TYPE	UN	Kvar	Dimension
	(V)	Splits	L*W*H(mm)
DZMJ 1.8-5000S	1800	10	559*159*699
DZMJ 1.0-3240S	1000	1	559*140*640
DZMJ 0.9-1200S	900	6	343*159*559
DZMJ 0.9-1500S	900	1	559*95*451
DZMJ 0.9-1500S	900	5	559*130*590
DZMJ 0.9-3300S	900	8	419*124*673
DZMJ 0.9-5000S	900	10	559*137*591

TYPE	UN	Kvar	Dimension
	(V)	Splits	L*W*H(mm)
DZMJ 0.9-5000S	900	1	559*137*591
DZMJ 0.9-6800S	900	2	559*146*457
DZMJ 0.9-7500S	900	8	559*137*508
DZMJ 0.9-10000S	900	8	559*146*686
DZMJ 0.75-600S	750	4	343*133*345
DZMJ 0.75-1500S	750	2	343*124*425
DZMJ 0.7-1200S	700	6	343*135*400

Production Line and Equipment

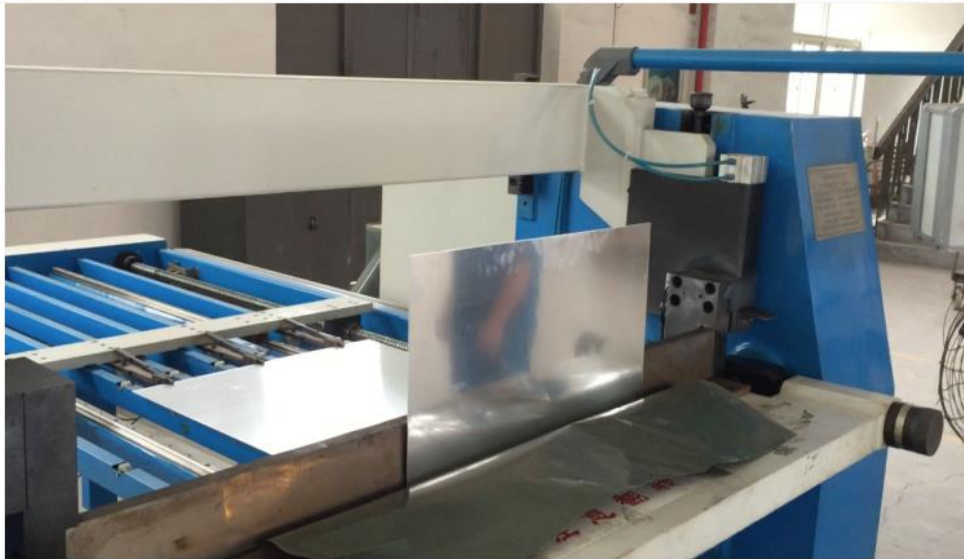
Auto Aluminum Foil Winding Machin



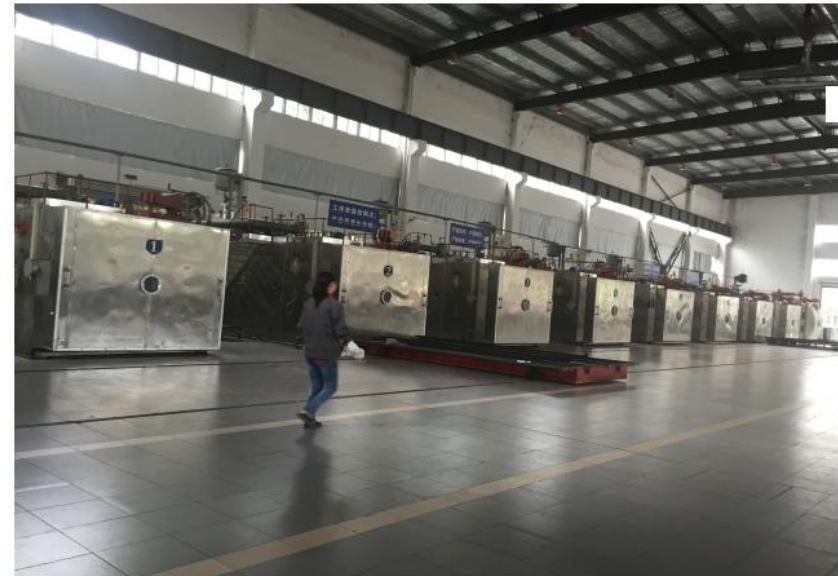
Assembly



Aluminum Case Auto Shaping Machine



Vacuum Tank



Capacitors out of Vacuum Tank



runtime test room 3

Vacuum Tank



Aluminum Case
Auto Welding Machine



Testing Room 1



Testing Room 2



Runtime Test Room

