

MINI machine line

10 interchangeable winding heads and 5 interchangeable roller tables enable to apply the correct machine solution for your specific winding application.

Model MINI-Basic

Mini machine for small cores

The MINI-BASIC is a very good value machine with an user friendly controller. The machine is designed for mass production of small toroidal cores. It is easy to set up the machine and it has the approved RUFF

modular system with several different winding heads and tables. Typical winding jobs for this machines are: SMD-coils, small coils, small filters and transformers.

Capability ranges

wire Ø	0,05 – 1 mm
finished core OD	3 - 51 mm
finished core ID	up from 1 mm
finished core H	max. 25 mm
controller	N.C. SIAX 110L - LCD Display
motor	roller tables with stepper motor winding heads with servo motor
machine size	approx. 400 x 500 mm
machine wight	approx. 40 kg
supply voltages	1 Ph 230 V, 16 A



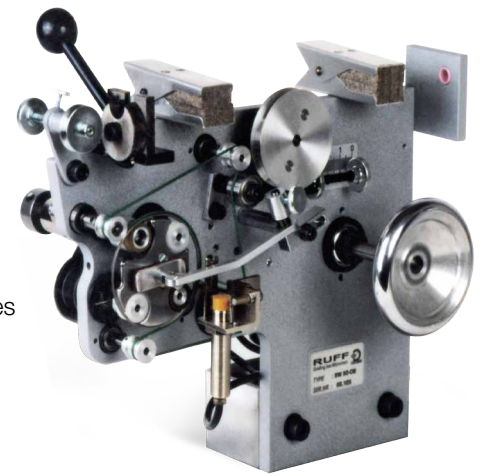
10 interchangeable heads for the Model MINI-Basic

2 direct heads	RW 35-D-RO	RW 35-D-RI	
3 miniatur heads	RW 35-MINI	RW 45-MINI	RW 60-MINI
3 multisystem heads	RW 75-MINI	RW 100-MINI	RW 200-MINI
2 side slider heads	RW 10-SIMPLE	RW 20-SIMPLE	
5 interchangeable tables	RW 111-DMINI RW 111-XMINI	RW 111-MINI RW 111-VXMINI	RW 111-VMINI

Miniatur heads for the MINI models

The miniature winding heads are designed for winding fine wires onto very small cores. The heads work with the professional and problem free RUFF belt winding system. Very precision hi tech magazines enable you to wind down to the smallest final core ID. The required wire tension for your specific application can be controlled with a very practical wire tension calibration device. The wind-

ing heads are designed for instant change over from flat belt to round belt system and features a large range of flat and round belts. The patented winding heads RW 35-DI-RO and RW 35 DI-RI are designed for ISDN applications such as R4 cores with small no. of turns and fine wires.



winding head data	winding head				winding head				winding head				direct winding heads (max. wire length = 0,5 m)			
	RW 35-MINI				RW 45-MINI				RW 60-MINI				RW 35-DI-RO		RW 35-DI-RI	
	round belt		flat belt		round belt		flat belt		round belt		flat belt		round belt		flat belt	
	mm	inch/ AWG	mm	inch/ AWG	mm	inch/ AWG	mm	inch/ AWG	mm	inch/ AWG	mm	inch/ AWG	mm	inch/ AWG	mm	inch/ AWG
wire range	0,06-0,10	38-42½	0,11-0,2	32-37	0,06-0,10	38-42½	0,11-0,3	30-37	0,06-0,11	34½-42½	0,12-0,6	22½-37	0,06-0,12	37-42½	0,1-0,2	32-38
magazine diameter	35	1,4	35	1,4	45	1,8	45	1,8	60	2,4	60	2,4	35	1,4	35	1,4
finished core OD	3,0-6,0	0,118-0,236	3,0-6,0	0,118-0,236	5-10	0,138-0,393	5-10	0,138-0,393	5-14	0,2-0,55	5-14	0,2-0,55	3,0-6,0	0,118-0,236	3,0-6,0	0,118-0,236
finished core ID	1,3	0,05	1,0	0,04	1,4	0,06	1,4	0,06	1,6	0,062	1,6	0,062	1,0	0,04	1,0	0,04
finished core height	5	0,20	5	0,20	8	0,30	8	0,30	10	0,39	10	0,39	5	0,20	5	0,20
max. winding speed rpm	1000		1000		1200		1200		1500		1300		1800		1800	
compatible roller tables	RW 111-MINI, RW 111-XMINI		RW 111-MINI, RW 111-XMINI		RW 111-MINI, RW 111-XMINI		RW 111-MINI, RW 111-XMINI		RW 111-MINI, RW 111-XMINI		RW 111-MINI, RW 111-XMINI		RW 111-D		RW 111-D	

Magazine data base with wire length in meters: for wire length in feet, multiply by factor 3,28

magazine type	final hole		0,05	0,06	0,071	0,08	0,09	0,1	0,112	0,125	0,132	0,15	0,18	0,2	0,25	0,3	0,355	0,4	0,5	0,6	0,71	0,8	0,9	1,0	mm	
	mm	inch	44	42½	41	40	39	38	37	36	35½	34½	33	32	30	28½	27	26	24	22½	21	20	19	18	AWG	
35-MINI																										
0,8	1,0	0,039	2,4	1,68	1,2	0,96	0,72	0,56	0,48	0,4																
0,9	1,2	0,047	3,0	2,1	1,5	1,2	0,9	0,7	0,6	0,5	0,4															
1,0	1,4	0,055	3,6	2,5	1,7	1,4	1,1	0,9	0,7	0,6	0,5	0,4														
1,1	1,5	0,059	5,6	3,9	2,7	2,2	1,7	1,4	1,1	0,9	0,8	0,6	0,4	0,3												
45-MINI																										
1,0	1,4	0,055		2,7	1,9	1,5	1,2	1,0	0,8	0,68	0,61	0,4														
1,1	1,5	0,059		3,3	2,3	1,8	1,4	1,2	1,0	0,8	0,7	0,5	0,4													
1,2	1,6	0,062		4,4	3,1	2,5	2,0	1,6	1,3	1,0	0,9	0,7	0,5	0,4												
1,3	1,7	0,066		5,1	3,6	2,9	2,3	1,9	1,5	1,2	1,1	0,9	0,6	0,5	0,35											
1,4	1,8	0,070		7,4	5,2	4,2	3,3	2,7	2,2	1,8	1,6	1,2	0,9	0,7	0,5	0,3										
1,5	1,9	0,074		8,3	5,9	4,7	3,8	3,1	2,5	2,0	1,8	1,4	1,0	0,8	0,57	0,4										
1,6	2,0	0,078		9,3	6,5	5,3	4,2	3,4	2,8	2,3	2,0	1,6	1,1	0,9	0,6	0,45										
1,7	2,1	0,082		12,3	8,7	7,0	5,5	4,6	3,7	3,0	2,7	2,1	1,5	1,2	0,8	0,5										
1,8	2,2	0,086		15,6	11	8,9	7,0	5,8	4,7	3,8	3,4	2,7	1,9	1,6	1,0	0,7										
60-MINI																										
1,2	1,6	0,06	6,9	4,8	3,3	2,7	2,1	1,7	1,4	1,1	0,9	0,7														
1,3	1,7	0,063	8,2	5,8	4,0	3,2	2,6	2,1	1,7	1,4	1,2	1														
1,4	1,8	0,07	9,6	6,3	4,4	3,6	2,7	2,3	1,8	1,5	1,3	1,1														
1,5	1,9	0,071	13,7	9,6	6,8	5,4	4,3	3,6	2,9	2,3	2,1	1,6	1,2	0,9												
1,6	2	0,075	15,4	11,2	7,9	6,3	5,0	4,1	3,4	2,7	2,4	1,8	1,3	1,1												
1,7	2,1	0,079	18,9	13,2	9,3	7,5	5,9	4,9	4,0	3,2	2,9	2,3	1,6	1,3	0,8											
1,8	2,2	0,083	24,7	19,2	13,5	10,9	8,7	7,2	5,8	4,7	4,2	3,3	2,4	1,9	1,2	0,9										
1,9	2,3	0,086	28,8	20,2	14,3	11,5	9,1	7,5	6,1	4,9	4,4	3,5	2,5	2,0	1,3	0,98	0,71									
2,0	2,4	0,095	35,7	25,8	18,2	14,7	11,7	9,6	7,8	6,3	5,7	4,5	3,2	2,6	1,7	1,2	0,9	0,7								
2,5	2,9	0,111	66	50,5	35,7	28,8	22,8	18,9	15,3	12,4	11,2	8,8	6,3	5,2	3,4	2,4	1,7	1,3	0,9	0,6						
2,8	3,2	0,126	98	75	52	42	33	28	22	17	15	12	9	7,5	5	3,5	2,3	2	1,3	0,9						

Belt data base: list of different round belt lengths for the magazines

round belt type	belt length for RW 35-MINI	belt length for RW 45-MINI	belt length for RW 60-MINI
round short red belt (e.g. thicker wires)	280 mm	325 mm	365 mm
round standard green belt	300 mm	350 mm	400 mm
round long yellow belt (e.g. thinner wires)	315 mm	365 mm	430 mm

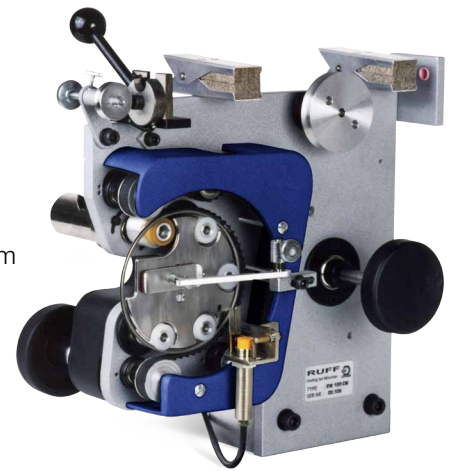
Belt data base: list of flat and round belts for the magazines

winding head type	RW 35-MINI				RW 45-MINI										RW 60-MINI										inch	
magazine type	0,8	0,9	1,0	1,1	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,5	2,8		
flat belts	width 8 mm																									0,315
	length 346 mm	x	x	x	x																					13,622
	width 8 mm																									0,315
	length 372 mm					x	x	x	x	x	x	x	x													14,646
	width 9,5 mm																									0,374
	length 480 mm														x	x	x	x	x	x	x	x	x	x	x	18,897
round belts diameter	Ø 1,0 mm			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x						0,03937	
	Ø 1,5 mm									x	x	x	x	x				x	x	x	x	x	x	x	0,05905	
	Ø 2,0 mm									x	x	x	x	x				x	x	x	x	x	x	x	0,07874	
	Ø 2,5 mm																						x	x	0,09842	

Multisystem winding heads for the MINI models

The multisystem winding heads are designed for winding wire sizes from 0,05 to 1,0 mm onto small and medium cores. Each head incorporate three different proven winding system: round belt system, flat belt system and side slider system. This enables

you to select the correct winding system for your specific winding application and offers you maximum flexibility at a minimum of cost. Typical applications are EMI filters and primary winding of small power transformers.



winding head data	winding head RW 75-MINI						winding head RW 100-MINI						winding head RW 200-MINI					
	round belt		flat belt		side slider		round belt		flat belt		side slider		round belt		flat belt		side slider	
	mm	inch/AWG	mm	inch/AWG	mm	inch/AWG	mm	inch/AWG	mm	inch/AWG	mm	inch/AWG	mm	inch/AWG	mm	inch/AWG	mm	inch/AWG
wire range	0,06-0,15	34½-42½	0,15-0,71	21-34½	0,05-0,25	30-44	0,07-0,15	34½-41	0,15-0,71	21-34½	0,05-0,355	27-44	0,125-0,25	30-36	0,25-1,0	18-36	0,08-0,71	21-40
magazine diameter	75	3,0	75	3,0	75	3,0	92	3,7	92	3,7	99	3,9	145	5,7	145	5,7	150	
finished core OD	5-25	0,2-1,57	5-25	0,2-1,57	5-25	0,2-1,57	5-35	0,2-1,38	5-35	0,2-1,38	8-35	0,3-1,38	16-51	0,63-2,01	16-51	0,63-2,01	16-51	0,63-2,01
finished core ID	1,7	0,067	1,7	0,067	4,5	0,177	2,2	0,087	2,4	0,094	5,0	0,196	5,0	0,196	5,0	0,196	7,0	0,276
finished core height	13	0,51	13	0,51	13	0,51	20	0,79	20	0,79	20	0,79	25	0,98	25	0,98	25	
max. winding speed rpm	1800		1800		1800		1800		1800		2000		1000		1000		1600	
compatible roller tables	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	RW 111-MINI RW 111-VMINI RW 111-XMINI RW 111-VXMINI	

Magazine data base with wire length in meters: for wire length in feet, multiply by factor 3,28

magazine type	final hole		0,05	0,06	0,071	0,08	0,09	0,1	0,112	0,125	0,132	0,15	0,18	0,2	0,25	0,3	0,355	0,4	0,5	0,6	0,71	0,8	0,9	1,0	mm	
	mm	inch	44	42½	41	40	39	38	37	36	35 ½	34½	33	32	30	28½	27	26	24	22½	21	20	19	18	AWG	
round and flat 75-MINI																										
1,4	1,8	0,070	12,1	8,5	6,0	4,8	3,8	3,1	2,6	2,1	1,9	1,4														
1,5	1,9	0,074	17,4	12,2	8,6	6,9	5,5	4,5	3,7	3,0	2,7	2,1	1,5													
1,6	2,0	0,078	19,6	13,8	9,7	7,8	6,2	5,1	4,2	3,4	3,0	2,4	1,7	1,4												
1,7	2,1	0,082	24,0	16,8	11,9	9,6	7,6	6,3	5,1	4,1	3,7	2,9	2,1	1,7	1,1											
1,8	2,2	0,086	31,5	22,1	15,6	12,6	10,0	8,2	6,7	5,4	4,9	3,8	2,7	2,2	1,5	1,0										
1,9	2,3	0,090	36,8	25,8	18,2	14,7	11,7	9,6	7,8	6,3	5,7	4,5	3,2	2,6	1,7	1,2	0,9									
2,0	2,5	0,098	45,6	32,0	22,6	18,2	14,4	11,9	9,7	7,9	7,1	5,6	4,0	3,3	2,1	1,5	1,1	0,8								
2,5	3,0	0,118	95,5	67,0	47,4	38,2	30,3	25,0	20,4	16,5	14,9	11,7	8,4	6,9	4,5	3,2	2,3	1,8	1,2	0,8						
3,0	3,5	0,137	147	103	73,0	58,9	46,7	38,6	31,5	25,4	22,9	18,0	12,9	10,6	7,0	5,0	3,6	2,8	1,8	1,3	0,9					
round and flat 100-MINI																										
1,8	2,2	0,087			27	21	17	14	11	9	8	6														
2,0	2,5	0,098			42	34	25	19	18	14	13	10	7,2	6	4	2,9										
2,25	2,75	0,108			44	35	26	20	19	15	14	9,4	6,8	5,7	3,6	2,7	2,0	1,5								
2,5	3,0	0,118			70	57	45	37	30	24	22	17	12	10	6,8	4,8	3,5	2,6								
3,0	3,5	0,138				80	63	52	42	34	31	24	17	14,5	9,5	6,8	4,9	3,94	2,5							
3,5	4,5	0,177				120	95	77	63	51	46	36	25	21	14	10	7,2	6	4	2,6	1,3					
4,0	5,0	0,197				156	123	102	83	67	60	47	40	28	18	13	10,5	8	5	3,5	2,5					
4,5	5,5	0,217				185	148	122	99	80	72	57	41	37	22	18	11	10	7	5	3					
5,0	6,0	0,236				243	193	159	130	105	95	74	62	46	29	22	16,5	13	9	6	4,5					
side slider 100-MINI/10-SIMPLE																										
4,5-SG	5,0	0,2	166	116	82	66	52	43	35	28	25	20	14	12	7,9	5,6										
5-SG	5,5	0,216	211	148	104	84	67	55	45	36	32	25	18	15	10	7										
6-SG	7,0	0,276	260	185	130	110	84	80	56	45	41	35	23	22	15	10										
7-SG	8,0	0,315	368	258	182	150	117	100	78	63	57	48	32	28	18	13										
8-SG	9,0	0,355	500	350	248	200	158	130	107	86	77	63	44	37	24	17	14,5									
9-SG	10,0	0,394	700	490	207	280	221	182	150	120	107	88	61	51	33	23,8	21,5									
10-SG	11,0	0,433	1120	784	331	448	354	291	239	192	172	141	98	82	54	38	32,5									
11-SG	12,0	0,473	1512	1058	447	604	478	393	323	260	232	190	133	111	72	51	42									
12-SG	13,0	0,512	2192	1534	648	878	693	570	469	377	337	276	192	162	105	75	62									
round and flat 200-MINI																										
200/3	5,0	0,197								59	53	42	30	24,5	16	11	8,5	6,5								
3,5	5,5	0,217								75	68	53	38	32	20	15	10,5	8,5	5,5							
4,0	6,0	0,236								103	93	74	52	43	28	20	16	12	8							
4,5	6,5	0,256								140	125	99	71	58	36	30	19	17	11	8						
5,0	7,0	0,276								170	153	120	86	72	46	36	24	21	14	10	7	5	4			
5,5	7,5	0,295								246	222	174	125	103	67	47	35	27	18	12	9	7	6	5		
6,0	8,0	0,315								290	262	206	148	122	80	58	41	33	22	15	11	9	7	6		
6,5	8,5	0,335								379	341	268	195	168	104	75	53	42	28	19	14	11,9	9	8		
7,0	9,0	0,355								462	415	327	234	193	127	87	65	60	33	23	17	13	11	9		
7,5 (K)	10,5	0,413								574	517	401	261	241	158	115	81	66	43	30	22	17,5	14	11		
8	11,0	0,433								712	640	504	362	298	196	140	100	81	53	37	27	21	17	14		
side slider 200-MINI/20-SIMPLE																										
6,0	7,0	0,276				115	94	77	63	51	46	36	26	21	14	10										
8,0	10,0	0,394				280	236	190	159	129	116	85	65	50	34	24	18									
10,0	12,0	0,472				440	357	300	240	194	175	140	98	80	54	38	27	22	15	10	7					
12,0	14,0	0,551				650	517	430	348	281	253	200	143	120	80	56	40	33	22	15	11					
14,0	16,0	0,623				1300	1029	860	693	560	505	400	285	240	160	110	79	65	43	30	23					
16,0	22,0	0,866				1950	1553	1300	1047	846	762	600	430	360	240	167	120	98	65	46	35					
20-S	25,0	0,984				3650	2895	2430	1950	1578	1421	1140	802	670	450	313	224	183	122	85	65					

Belt data base: list of different round belt lengths for the magazines

round belt type	belt length for RW 75-MINI	belt length for RW 100-MINI	belt length for RW 200-MINI
round short red belt (e.g. thicker wires)	435 mm	540 mm	700 mm
round standard green belt	470 mm	570 mm	750 mm
round long yellowbelt (e.g. thinner wires)	490 mm	600 mm	780 mm

Belt data base: list of tooth, flat and round belts for the magazines

winding head type	RW 75-MINI										RW 100-MINI										RW 200-MINI									
magazine type	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,5	3,0	1,8	2,0	2,25	2,5	3,0	3,5	4,0	4,5	5,0	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5	7,0	7,5	8,0	
tooth belts for thick wires	210XL 037	x	x	x	x	x	x	x	x																					
	250XL 037												x	x	x	x	x	x												
	344XL 075																		x	x	x	x	x	x	x	x	x	x	x	
flat belt	width 9,5 mm	x	x	x	x	x	x																							
	length 513 mm																													
round belts standard green	Ø 1,5 mm		x	x	x	x	x	x	x	x	x	x																		
	Ø 2,0 mm					x	x	x	x	x	x	x	x	x					x											
	Ø 2,5 mm								x				x	x	x	x			x	x										
	Ø 3,0 mm																		x	x	x	x								
	Ø 3,5 mm																		x	x	x	x	x							
	Ø 4,0 mm																					x	x	x	x					
	Ø 4,5 mm																						x	x	x	x	x			

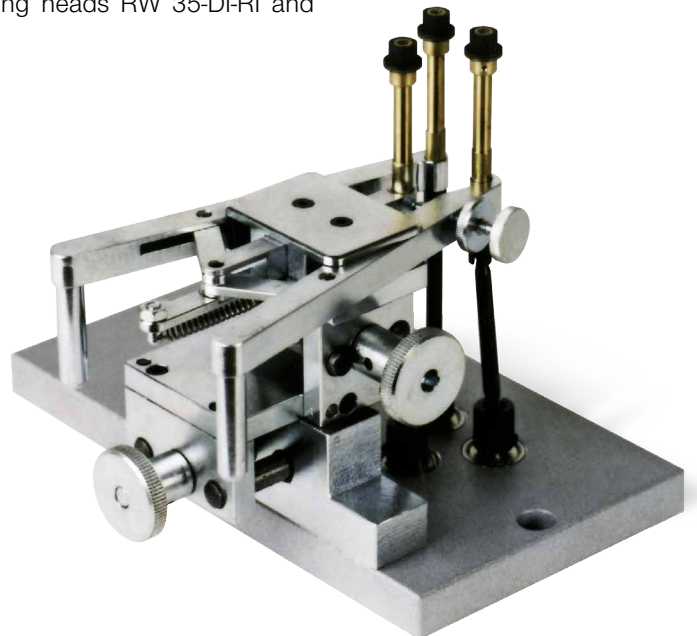
Roller tables for the MINI models

RUFF supplies a choice of 5 different interchangeable roller tables. They are connected to the machine base and held with two fixing bolts which allow them to be changed in two minutes. The transport rollers are sitting on drive shafts which are connected directly to the drive motor. A large range of parallel and tapered transport rollers are available to suit individual core sizes. The roller tables RW 111 and RW 111-V are constructed with a XY-coil moving slide unit which enables the

operator to move the coil during the winding cycle. The roller tables RW 111 and RW 111-V with the specification „X“ are low cost models without coil moving slides and are suitable for such coils which do not need to be moved during the winding cycle. The roller table RW 111-D is constructed with a quick core clamping device and compatible with the direct winding heads RW 35-DI-RI and RW 35 DI-RO.

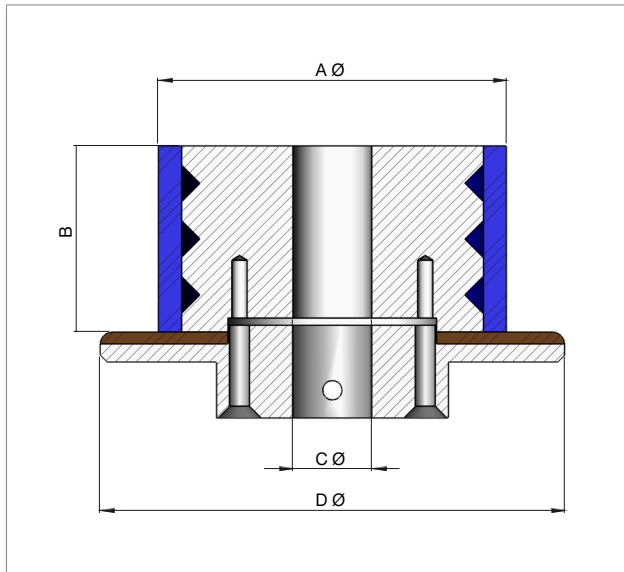
Possible combination of winding heads and roller tables

winding head type	core OD with RW 111-MINI RW111-XMINI	core OD with RW 111-VMINI RW111-VXMINI	core OD with RW 111-DMINI
RW 35-D-RO RW 35-D-RI	-	-	3 - 6 mm
RW 35-MINI	3 - 6 mm	-	-
RW 45-MINI	5 - 10 mm	-	-
RW 60-MINI	5 - 14 mm	-	-
RW 75-MINI	5 - 30 mm	16 - 40 mm	-
RW 100-MINI	5 - 30 mm	16 - 40 mm	-
RW 200-MINI	5 - 30 mm	16 - 51 mm	-



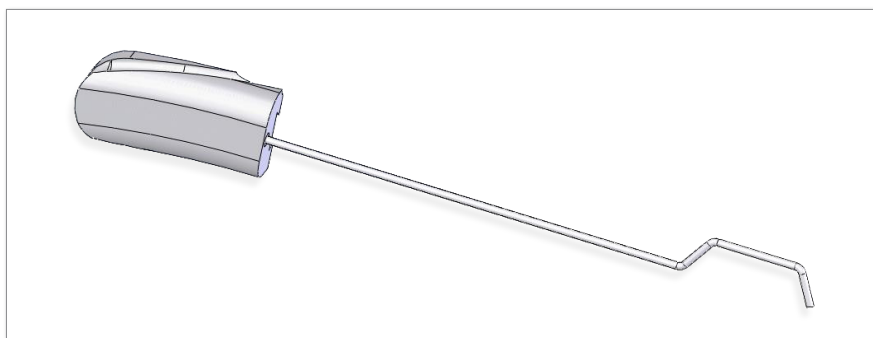
Standard core transport rollers







roller table type	qty per set	A	B	C	D	smallest core OD mm	suitable winding head	typical use
		mm	mm	mm	mm			
RW 111-MINI	2 pcs.	6	4	3	7,5	3,5	35-D-R0	extremely small cores flat
	1 pcs.	6	4	3	6		35-D-RI	
RW 111-MINI	3 pcs.	6	4	3	9	5	35-MINI to 100-MINI	small core flat
RW 111-MINI	3 pcs.	8	5	3	11	8	35-MINI to 100-MINI	small cores
RW 111-MINI	3 pcs.	8	10	3	12	12	45-MINI to 100-MINI	small cores high
RW 111-MINI	3 pcs.	9	20	3	18	15	75-MINI to 100-MINI	small cores very high
RW 111-VMINI	3 pcs.	17	10	6	18	10,5	75-MINI to 100-MINI	special rollers
RW 111-VMINI	3 pcs.	17	10	6	20	13	75-MINI to 200-MINI	medium cores flat
RW 111-VMINI	3 pcs.	17	15	6	23	15	75-MINI to 200-MINI	medium cores high
RW 111-VMINI	3 pcs.	23	15	6	28	18	75-MINI to 200-MINI	large cores



Slider data base: list of slider for the magazines

winding head type	RW 75-MINI	RW 100-MINI RW 10-SIMPLE	RW 200-MINI RW 20-SIMPLE		
			20/6-20/8-1	20/8-20/10	20/12-20/40-S
superfinished slider 1-tail	0,05-0,10	0,05-0,10	-	-	-
1-tail slider	0,08-0,15	0,08-0,15	0,08-0,15	0,08-0,20	0,08-0,20
2-tail slider	-	0,15-0,25	0,15-0,25	0,20-0,35	0,20-0,40
3-tail slider	-	-	-	0,35-0,60	0,40-0,70

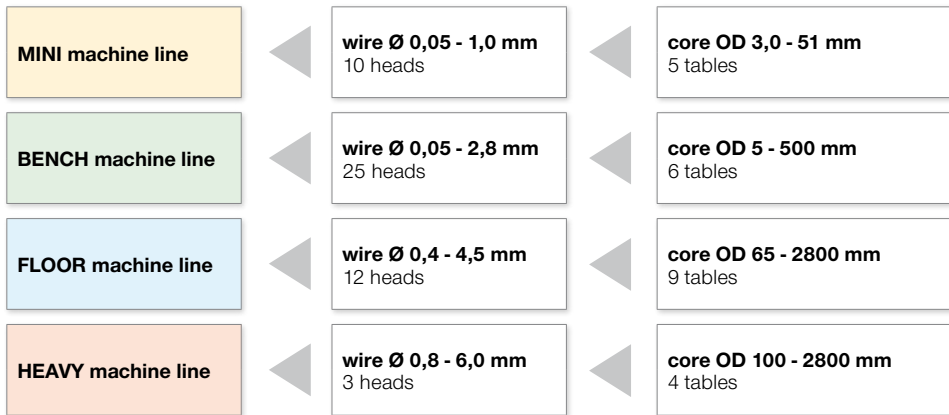


<p>kleine Spulen mit Feindraht small coils with fine wire</p> <p>bare core size mm turns x Ø wire size mm wound coil size mm machine base roller table winding head + magazine</p>	 <p>6,7 x 6,7 x 4,8 37 x 0,20 7,3 x 1,9 x 5,3 MINI RW 111-MINI (F.B.) RW 60-MINI + 1,6</p>	 <p>7 x 3,2 x 3 150 x 0,08 bifilar 7,4 x 2,3 x 3,6 MINI RW 111-MINI (R.B.) RW 60-MINI + 1,6</p>	 <p>6,2 x 4,4 x 5,3 150 x 0,08 trifilar 7,4 x 2,3 x 3,6 MINI RW 111-MINI (R.B.) RW 45-MINI + 1,8</p>	 <p>6,6 x 3 x 2,9 1 layer x 0,112 bifilar 7,2 x 2,5 x 3,5 MINI RW 111-MINI (R.B.) RW 75-MINI + 1,8</p>	 <p>8 x 3,75 x 3,7 30 x 0,35 9,1 x 2,7 x 4,5 MINI RW 111-MINI (F.B.) RW 75-MINI + 2,0</p>	 <p>10,5 x 4 x 4,8 200 x 0,125 bifilar 11,2 x 3,1 x 5,5 MINI RW 111-MINI (R.B.) RW 75-MINI + 2,0</p>
<p>kleine Spulen mit Feindraht small coils with fine wire</p> <p>bare core size mm turns x Ø wire size mm wound coil size mm machine base roller table winding head + magazine</p>	 <p>9,5 x 4,8 x 3,2 61 x 0,18 x 37 x 0,3 1 0,8 x 2,9 x 4,6 MINI RW 111-MINI (F.B.) RW 100-MINI + 2,0</p>	 <p>13,5 x 7,8 x 2,8 580 x 0,1 14,5 x 5,5 x 4 MINI RW 111-MINI (S.S.) RW 100-MINI + 4,5</p>	 <p>16 x 4 x 8 1 layer x 0,1 16,5 x 2,9 x 9 RWE RW 111 (I.S.) RW 10 + 2,0</p>	 <p>16 x 8,5 x 6 800 x 0,3 18 x 5 x 8,9 RWE RW 111 (F.B.) RW 100-C + 2,5</p>	 <p>12 x 6 x 4,5 30 x 0,4 13 x 4,3 x 5,5 RWE RW 111 (F.B.) RW 100-C + 2,0</p>	 <p>15,5 x 9 x 5,5 17 x 0,5 bifilar 16 x 7 x 7 RWE RW 111-V RW 100 + 3,0</p>
<p>kleine Drossel und Filter mit dickem Draht small chokes and filters with heavy wire</p> <p>bare core size mm turns x Ø wire size mm wound coil size mm machine base roller table winding head + magazine</p>	 <p>13 x 7,7 x 8,5 23 x 0,8 16,8 x 4,2 x 10,5 RWE RW 111-V RW 100 + 3,0</p>	 <p>24 x 13 x 7 20 x 1,6 28,5 x 8,5 x 11,5 RWE RW 112 RW 200-V + 4,7</p>	 <p>20,5 x 12,5 x 6,5 35 x 1,15 24 x 6 x 11,5 RWE RW 112 RW 200-V + 4,2</p>	 <p>38,5 x 19,8 x 8,2 2 layer x 0,8 40,5 x 17 x 11 RWE RW 222-L RW 1 + 1/11</p>	 <p>40 x 24 x 15 11 x 1,32 trifilar 44 x 20 x 18 RWE RW 222-L RW 2 + 2/13</p>	 <p>33 x 17,5 x 11,5 100 x 1,0 39 x 9 x 18 RWE RW 112 RW 200-V + 6,3</p>
<p>kleine Drossel und Filter mit dickem Draht small chokes and filters with heavy wire</p> <p>bare core size mm turns x Ø wire size mm wound coil size mm machine base roller table winding head + magazine</p>	 <p>47 x 24 x 18,4 130 x 1,2 bank wound 55 x 9 x 28 RWE RW 222-VSO RW 300-V + 8,2</p>	 <p>38,2 x 25 x 16,4 3 sectors each 11 x 1,8 47 x 17 x 21 RWE RW 112 RW 200-VS + 7,4</p>	 <p>4 x 2,0 x 1,6 36 x 0,1 bifilar MINI RW 35-D-RO RW 111-D</p>	 <p>47 x 24 x 18,4 95 x 1,8 58 x 10 x 29 RWE RW 222-VSO RW 300-V + 8,2</p>	 <p>53 x 28 x 18 each sec. with 3 layers with bank wound x1,8 60 x 16 x 27 RWE RW 222-VSO RW 300-V + 9</p>	 <p>51 x 30 x 23,5 32 x 2,5 58 x 24 x 30,5 RWE RW 332-SO RW 3-V + 3/25</p>
<p>stromkompensierte Drossel balancing chokes</p> <p>bare core size mm turns x Ø wire size mm wound coil size mm machine base roller table winding head + magazine</p>	 <p>15,5 x 8 x 6 each sector 20 x 0,3 16,1 x 7,2 x 6,5 RWE RW 111-V (F.B.) RW 100-C + 2,5</p>	 <p>13,5 x 6 x 5,5 each sector 12 x 0,5 15 x 5 x 7 RWE RW 111-V (F.B.) RW 100-C + 2,5</p>	 <p>19 x 9 x 10 each sector 20 x 0,4 20 x 8 x 12 RWE RW 111-V RW 100-C + 4,0</p>	 <p>25 x 14 x 8 each sector 20 x 0,8 28 x 10 x 11 RWE RW 112 RW 200-V + 4,7</p>	 <p>26 x 14 x 10 each sector 9 x 1,4 30 x 10,5 x 14 RWE RW 112 RW 200-V + 5,1</p>	 <p>34,5 x 15 x 15 each sector 68 x 0,9 39 x 8,5 x 21 RWE RW 112 RW 200 + 5,0</p>
<p>kleine Sonderspulen small coils special</p> <p>bare core size mm turns x Ø wire size mm wound coil size mm machine base roller table winding head + magazine</p>	 <p>13 x 7,5 x 5 7 x 0,355 litz wire 15,3 x 6 x 6,6 RWE RW 111-V RW 100 + 3,0</p>	 <p>22,6 x 6,5 x 12 55 x 0,16 RWE RW 111-V (R.B.) RW 100-C + 2,0</p>	 <p>16,5 x 7 x 21,5 1 sector x 0,25 RWE RW 111-V (F.B.) RW 100-C + 2,5</p>	 <p>17 x 7 x 18,5 each sector 19 x 0,3 18 x 6 x 19,5 RWE RW 111-V (F.B.) RW 100-C + 2,5</p>	 <p>18 x 16 x 2,8 1 layer x 0,25 precision wound 18,8 x 14,6 x 3,5 RWE RW 222-L RW 0 + 10,0</p>	 <p>22 x 15,8 x 4 each sec. 1 layer prec. wound x 0,125 22,5 x 14,9 x 4,4 RWE Segment holder RW 0 + 10,0</p>
<p>Netztrafos power transformers</p> <p>bare core size mm turns x Ø wire size mm wound coil size mm machine base roller table winding head + magazine</p>	 <p>175 x 55 x 15,5 primary 3 layers x 0,9 180 x 48 x 21 RWE RW 222-VSO RW 30 + 30/1 6</p>	 <p>120 x 65 x 68 secondary 3 layers x 1,32 126 x 55 x 74 RWE RW 332 RW 4 + 4/50</p>	 <p>47 x 30 x 50 primary progressive/wound x 0,335 50 x 24,5 x 55 RWE RW 222-VL RW 25+14</p>	 <p>81 x 44 x 26 primary 1500 x 0,315 83 x 40 x 30 RWE RW 222-VL RW 25+14</p>	 <p>84 x 39 x 31 secondary 90 x 1,32 87 x 36 x 33 RWE RW 222-VL RW 300 + 10/K</p>	 <p>sample of power transformer View or primary winding interlayer taping with copper foil and secondary winding</p>

How to find your ideal machine

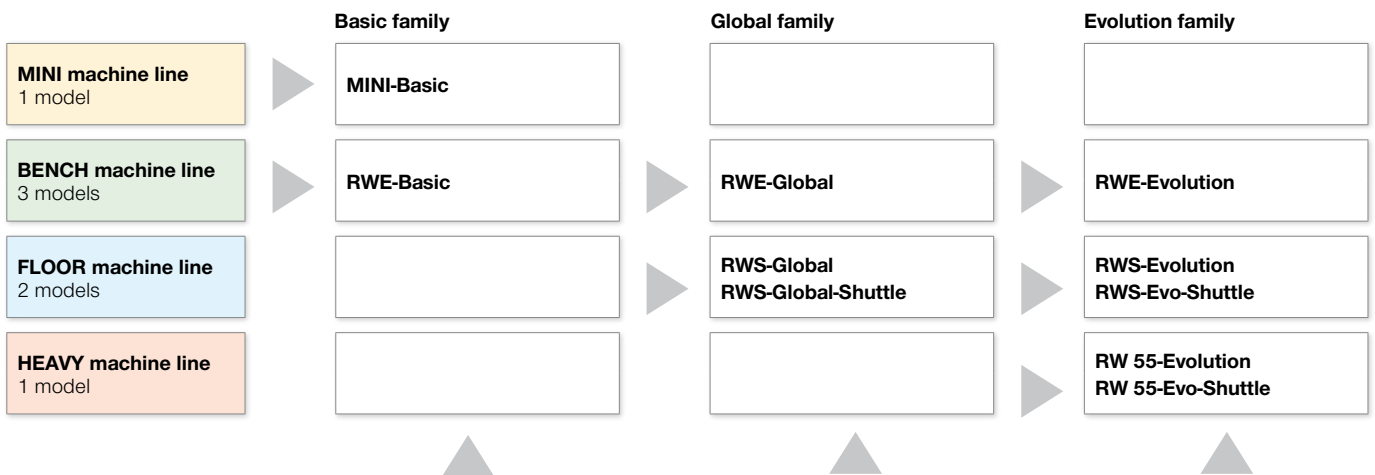
Step 1

Select the suitable machine line: RUFF offers four different machine lines and each machine line is extremely flexible with its own head and table changing system. Following graphic enables you to select the suitable machine line for your application. Please check wire range and core OD range.



Step 2

Select the suitable machine model: RUFF offers different machine families. Following overview of models enable you to select your machine. Please check the characteristics:



drives	roller tables with stepper motor winding heads with servo motor		roller tables with servo motor winding heads with motor and inverter		roller tables with servo motor winding heads with servo motor
controller	N.C. SIAX 110L		N.C. SIAX 80 monochrom touch screen		N.C. IPC EL870 touch screen
display	LCD-Display		5.7" monochrom touch screen		N.C. IPC EL870 touch screen 8" touchpanel with 4 funktion buttons, USB-connetion, ethernet interface, PS/2 interface, RJ45, serial interface language, unitext (all characters e.g. Cyrillic etc.)
programming	simple programming, user friendly controller		simple programming, user friendly controller with touch screen monitor		programming for sophisticated winding applications with industry-PC controller; clear text touch screen with graphical display and automatically winding program calculation
applications	all standard winding jobs		all standard winding jobs		all standard jobs and special resp. hi tech winding applications

Step 3

Select the suitable winding head. Following is an overview of available winding heads. Please compare your winding application with the technical specification of the heads in the RUFF product catalogue:

MINI machine line	wire 0,05 - 1,0 mm 10 heads, 5 tables						
direct, multisystem and miniature winding heads	RW 35-D direct winding head	RW 35-MINI miniature winding head	RW 45-MINI miniature winding head	RW 60-MINI miniature winding head	RW 75-MINI multisystem winding head	RW 100-MINI multisystem winding head	RW 200-MINI multisystem winding head

BENCH machine line	wire 0,05 - 2,8 mm 25 heads, 6 tables						
gear rack heads	RW 0	RW 1	RW 2	RW 3	RW 4	RW 4-V	
slider heads	RW 10	RW 20	RW 25	RW 30	RW 40	RW 40-V	
belt heads	RW 60-C	RW 100-C	RW 100	RW 200	RW 200-V	RW 300	
taping heads	RW 0/B	RW 1/B	RW 2/B	RW 3/B	RW 4/B	RW 200/B	RW 300/B

FLOOR machine line	wire 0,4 - 4,5 mm 12 heads, 9 tables						
gear rack heads	RW 33	RW 44-1	RW 44-1V	RW 45	RW 45-V	RW 45-380	RW 45-EH
taping heads	RW 33/B	RW 44/1B	RW 45/B	RW 45-380/BU			

HEAVY machine line	wire 0,8 - 6,0 mm 3 heads, 4 tables						
gear and taping rack heads	RW 55	RW 55/B	RW 55/BU				