



## Netter Electric External Vibrators Series NEG

- Circular vibration
- Nominal frequency from 750 min<sup>-1</sup> to 3.600 min<sup>-1</sup>
- Centrifugal force from 40 N to 217.700 N
- Smooth housing surface
- Stainless steel weight covers up to housing size 133
- Ex II 2 G D (ATEX) available
- Protection IP 66-7, Insulation class F
- Stainless steel versions available





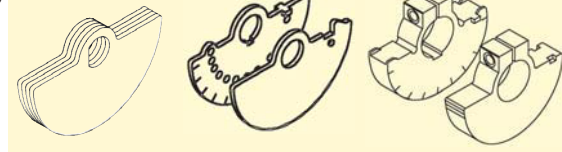
NetterVibration



# Netter Electric External Vibrators

Series NEG 3-Phase  
Series NEA Single Phase  
Series NED Direct Current

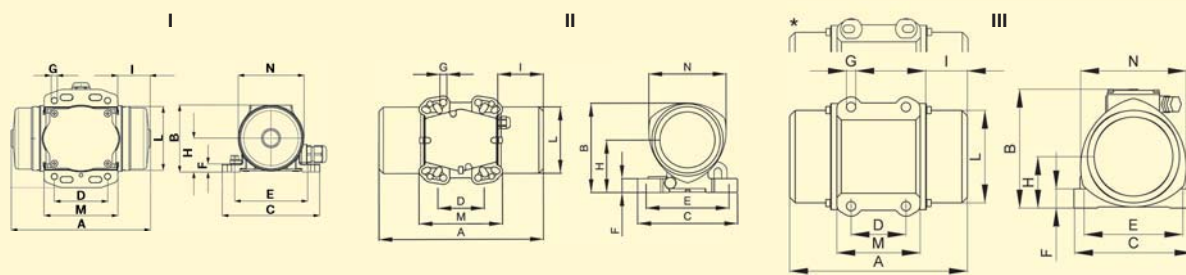
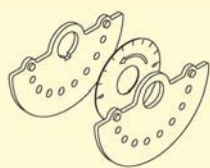
Unbalance type XL    Unbalance type XM    Unbalance type XS



min <sup>-1</sup>	Type	Housing		Unbalance [cmkg]		Centrifugal Force [N]		EEx e II **	Power Input [kW]				Nominal Current [A]				
		Size	Material	NEG/NEA		NEG/NEA			NEG E	NEG		NEA		NEG		NEA	
				50 Hz	60 Hz	50 Hz	60 Hz			50 Hz 400 V	60 Hz 480 V	50 Hz 230 V	60 Hz 115 V	50 Hz 400 V	60 Hz 480 V	50 Hz 230 V	60 Hz 115 V
3000 3600	NEA 504*	50	Al	0,08	0,08	40	57	-	-	-	0,024	0,024	-	-	0,13	0,30	
	NEG/NEA 5020*	60	Al	0,39	0,39	192	277	-	0,035	0,035	0,035	0,035	0,15	0,15	0,17	0,42	
	NEG/NEA 5050*			0,91	0,91	450	647		0,045	0,045	0,045	0,045	0,16	0,16	0,20	0,46	
	NEG/NEA 5060	100	Al	1,22	1,22	602	867	-	0,12	0,12	0,11	0,11	0,27	0,23	0,56	1,52	
	NEG/NEA 50120	101	Al	2,4	2,4	1.185	1.706	-	0,18	0,18	0,165	0,165	0,35	0,30	0,75	1,52	
	NEG/NEA 50200			4,2	3,0	2.073	2.133										
	NEG/NEA 50300	110	Al	6,02	4,08	2.972	2.900	T3, T4	0,26	0,27	0,28	0,28	0,60	0,50	1,25	2,40	
	NEG/NEA 50550	120	Al	9,97	6,48	4.921	4.606	T3, T4	0,45	0,50	0,5	0,5	0,80	0,75	2,30	4,50	
	NEG/NEA 50770	130	Al	15,59	10,40	7.695	7.392	T3, T4	0,65	0,685	0,7	0,75	1,10	1,00	3,25	7,00	
	NEG 50980 NEG 501140	133	Al	19,8 23,0	13,2 16,5	9.772 11.352	9.382 11.727	T3, T4	1	1,2	-	-	1,75	1,75	-	-	
1500 1800	NEG 2530	101	Al	2,4	2,4	296	426	-	0,085	0,095	-	-	0,21	0,20	-	-	
	NEG 2570			6,2	4,2	766	747										
	NEG 25210	110	Al	16,84	11,76	2.078	2.090	T4	0,17	0,17	-	-	0,41	0,40	-	-	
	NEG 25420 NEG 25540	120	Al	32,64 43,80	22,66 32,64	4.028 5.405	4.027 5.800	T3, T4	0,30	0,35	-	-	0,60	0,60	-	-	
	NEG 25700	130	Al	57,18	41,89	7.056	7.444	T3, T4	0,525	0,665	-	-	0,92	0,98	-	-	
	NEG 25930	133	Al	75,0	52,0	9.254	9.239	T4	0,55	0,68	-	-	0,95	0,95	-	-	
1000 1200	NEG 1630	110	Al	6,02	6,02	331	476	-	0,12	0,135	-	-	0,30	0,30	-	-	
	NEG 1690			16,84	16,84	924	1.330										
	NEG 16190	120	Al	32,64	32,64	1.790	2.578	T4	0,185	0,205	-	-	0,50	0,50	-	-	
	NEG 16310	130	Al	57,18	41,89	3.136	3.309	T4	0,35	0,38	-	-	0,72	0,68	-	-	
	NEG 16410 NEG 16500	133	Al	75,0 90,7	52,0 66,5	4.113 4.974	4.106 5.251	T4 -	0,35 0,42	0,38 0,46	-	-	0,75 0,79	0,67 0,77	-	-	
	NEG 12100	120	Al	32,64	32,64	1.007	1.450	T3	0,23	0,25	-	-	0,85	0,76	-	-	
750 900	NEG 12180	130	Al	56,8	56,8	1.752	2.523	T3	0,35	0,38	-	-	1,10	1,05	-	-	
	NEG 12230	133	Al	75,0	75,0	2.314	3.332	T4	0,28	0,30	-	-	0,60	0,68	-	-	
	3000	NED 50100	102	Al	1,2		1.180		-	0,10 (12 V =)		0,10 (24 V =)		8 (12 V =)		4 (24 V =)	
NED 50200		103	Al	2,1		2.080		-	0,19 (12 V =)		0,19 (24 V =)		16 (12 V =)		8 (24 V =)		
3600	NED 601110	133	Al	15,6		11.087		-	0,53 (24 V =)				22 (24 V =)				

\* Protection IP 65, \*\* Technical data available upon request

Unbalance type XLs



Type	Weight [kg]		Type of housing	Dimensions [mm]													Unbalance [No. of unbalance discs]		
	NEG/NEA			NEG NEA	NEG/NEA													NEG/NEA	
	50 Hz	60 Hz	A		B	C	D E F G mounting pattern**				H	I	L	M	N	n²	Type	50 Hz	60 Hz
NEA 504	0,90	0,90	I	113	62,5	90	25-40	75	9	5,5	32	20	56,6	70,5	75	4	XL	8	8
NEG/NEA 5020	1,75	1,70	I	157	75	110	<b>60</b>	<b>85</b>	9	<b>6,5</b>	38	33	72	83	74	4	XL	8	8
NEG/NEA 5050	1,95	1,90		169			25-40	92										20	9
NEG/NEA 5060	4,1	4,1	II	197	121	126	60	100	20	9	72	33	92	88	105	4	XL	10	10
						62	95	70										106	65
NEG/NEA 50120	6,1	6,0	II	207	143	165	<b>65</b>	<b>140</b>	25	<b>13</b>	86	44	100	156	123	4	XM	4	4
								62-74										106	80
NEG/NEA 50200	6,7	6,5	II	223			115	135	25	11	86	52	100	156	123	4	XM	4	4
						135	115	124										110	11
NEG/NEA 50300	10,3	10,1	II	247	172,5	165	<b>65</b>	<b>140</b>	25	11	103	50	124	156	146	4	XM	4	4
						80	110	115										135	11
							135	115	25	11	103	50	124	156	146	4	XM	4	4
						124	110	90										125	13
NEG/NEA 50550	16,3	16,1	II	283	192	217	<b>100</b>	<b>180</b>	30	17	113	62,5	143	137	168	4	XM	4	4
						105	140	105										140	13
NEG/NEA 50770	22,3	21,3	III	308	212	238	<b>100*</b>	<b>180*</b>	43	17	93,5	63	168	163	193	4	XM	4	4
						92-128*	167-203*	92-128*										167-203*	
NEG 50980	24,5	23,4	III	324	216	219	100	180	35	17	93,5	76	168	153	193	4	XM	4	4
NEG 501140	25,0	24,0	III				100	180										35	17
NEG 2530	6,1	5,8	II	207	143	165	<b>65</b>	<b>140</b>	25	11	86	44	100	156	123	4	XM	4	4
																		62-74	106
NEG 2570	7,3	6,9		243			115	135	25	11	86	62	100	156	123	4	XM	4	4
						135	115	124										110	11
NEG 25210	12,8	11,8	II	307	172,5	165	<b>65</b>	<b>140</b>	25	11	103	80	124	156	146	4	XS	4	4
						80	110	115										135	11
							135	115	25	11	103	80	124	156	146	4	XS	4	4
						124	110	90										125	13
NEG 25420	20,7	19,7	II	355	192	217	<b>100</b>	<b>180</b>	30	17	113	98,5	143	137	168	4	XS	4	4
NEG 25540	22,7	21,7					391												105
NEG 25700	29,4	28,4	III	392	212	238	<b>100*</b>	<b>180*</b>	43	17	93,5	105	168	163	193	4	XS	4	4
						92-128*	167-203*	92-128*										167-203*	
NEG 25930	34,2	32,7	III	452	216	219	100	180	35	17	93,5	140	168	153	193	4	XS	4	4
NEG 1630	12,0	10,1	II	247	172,5	165	<b>65</b>	<b>140</b>	25	11	103	50	124	156	146	4	XM	4	4
																		80	110
							135	115	25	11	103	80	124	156	146	4	XS	4	4
NEG 1690	12,7	12,7		307			124	110										90	125
NEG 16190	20,5	20,5	II	355	192	217	<b>100</b>	<b>180</b>	30	17	113	98,5	143	137	168	4	XS	4	4
						105	140	105										140	13
NEG 16310	28,9	27,9	III	392	212	238	<b>100*</b>	<b>180*</b>	43	17	93,5	105	168	163	193	4	XS	4	4
						92-128*	167-203*	92-128*										167-203*	
NEG 16410	34,1	33,6	III	452	216	219	100	180	35	17	93,5	140	168	153	193	4	XS	4	4
NEG 16500	36,1	35,1						100										180	35
NEG 12100	20,5	20,5	II	355	192	217	<b>100</b>	<b>180</b>	30	17	113	98,5	143	137	168	4	XS	4	4
						105	140	105										140	13
NEG 12180	28,0	28,0	III	392	212	238	<b>100*</b>	<b>180*</b>	43	17	93,5	105	168	163	193	4	XS	4	4
						92-128*	167-203*	92-128*										167-203*	
NEG 12230	34,6	34,6	III	452	216	219	100	180	35	7	93,5	140	168	152	193	4	XS	4	4
NED 50100	5,7		II	204	146,5	162	<b>65</b>	<b>140</b>	25	11	88	45	100	157	117	4	XM	4	4
NED 50200	6,0		II	253	146,5	162	<b>65/115</b>	<b>140/135</b>	25	<b>13</b>	88	53	100	140	117	4	XM	4	4
						74/80	106/110	9/11										9/11	
NED 601110	20		III	308	214,5	205	120	170	45	17	93,5	63	168	160	182	4	XM	4	4

\* Variable mounting pattern see operating manual, \*\* Recommended mounting pattern in bold type.



## Netter Electric External Vibrators Series NEG 3-Phase

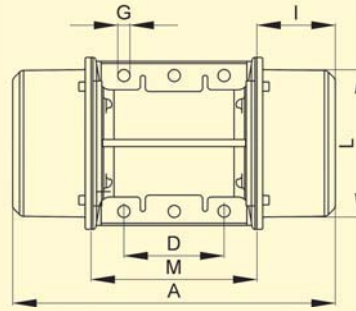
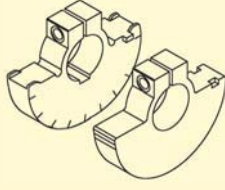
min <sup>-1</sup>	Type	Housing Size	Material	Unbalance [cmkg]		Centrifugal force [N]		EEx e II **	Power input [kW]		Nominal Current [A]		Weight [kg]	
				50 Hz	60 Hz	50 Hz	60 Hz		50/60 Hz	50 Hz 400 V	60 Hz 480 V	50 Hz 400 V	60 Hz 480 V	50 Hz
3000 3600	NEG 501510	150	GGG	30,6	20,4	15.103	14.499	T3, T4	1,4	1,45	2,3	2,0	44	43
	NEG 501770			35,8	25,6	17.669	18.195	T3	2,0	2,0	3,3	2,9	45	44
	NEG 502020			41,0	25,6	20.236	18.195	T3	2,2	2,2	3,5	3,0	49	47
	NEG 502270	170	GGG	46,0	30,6	22.704	21.748	T3	2,2	2,2	3,5	3,0	50	49
	NEG 503400			68,8	43,0	33.957	30.561	-	3,8	3,8	6,2	5,4	106	102
	NEG 503820			77,4	51,6	38.202	36.673	-	4,0	4,0	6,5	5,6	107	103
	NEG 506220			126,0	88,6	62.189	62.970	-	5,5	5,5	9,2	8,0	188	181
NEG 508830	195	GGG	179,0	123,8	88.347	87.988	-	10,0	9,3	18,0	13,0	215	210	
NEG 251370	140	GGG	111,2	80,0	13.721	14.215	T3, T4	0,9	1,05	1,45	1,5	57	54	
NEG 251760	150	GGG	142,8	97,0	17.620	17.235	T3, T4	1,1	1,2	2,0	1,9	64	60	
NEG 252060			166,6	112,3	20.557	19.954	-	1,35	1,45	2,5	2,3	68	64	
NEG 252450	160	GGG	198,4	138,2	24.481	24.556	T3, T4	1,6	1,7	3,2	3,0	85	79	
NEG 253080			250,0	174,0	30.848	30.917	-	1,9	2,0	3,8	3,5	95	92	
NEG 253720	170	GGG	301,6	206,7	37.214	36.726	T3, T4	2,2	2,5	3,9	3,9	127	122	
NEG 254310			349,2	234,7	43.088	41.702	-	2,5	2,8	4,8	4,65	125	120	
NEG 254900	180	GGG	396,8	272,8	48.961	48.472	T3	3,6	3,4	6,0	5,0	174	166	
NEG 256460	190	GGG	523,8	364,6	64.632	64.783	-	6,0	6,0	10,5	9,0	212	200	
NEG 258040	195	GGG	652,0	452,0	80.450	80.312	-	7,0	8,0	11,6	11,5	225	210	
NEG 258260	197	GGG	669,2	492,4	82.573	87.490	-	7,5	8,5	12,2	12,0	317	303	
NEG 2511210	200	GGG	908,8	633,2	112.137	112.508	-	10,0	10,5	17,5	15,5	433	411	
NEG 2513850			1.122,8	825,2	138.542	145.981	-	11,0	12,0	20,0	20,0	458	424	
NEG 16780	140	GGG	142,8	111,8	7.831	8.829	T3, T4	0,68	0,76	1,4	1,35	60	55	
NEG 161080	150	GGG	196,4	142,8	10.771	11.277	T3, T4	0,75	0,75	1,65	1,5	70	61	
NEG 161470			267,8	187,4	14.686	14.799	-	1,0	1,0	1,8	1,7	81	74	
NEG 161660	160	GGG	303,1	198,4	16.622	15.668	T3, T4	1,1	1,3	2,6	2,8	96	86	
NEG 162150			392,8	275,0	21.541	21.717	-	1,5	1,7	3,0	2,75	105	93	
NEG 162550	170	GGG	464,2	323,0	25.457	25.507	T3	1,96	2,1	4,1	3,75	140	127	
NEG 163030			553,4	400,0	30.348	31.588	-	2,2	2,4	4,5	4,3	156	141	
NEG 163820	180	GGG	696,4	467,4	38.191	38.253	T3, T4	2,5	3,0	5,1	5,0	200	182	
NEG 164700			857,0	587,4	46.998	46.387	-	3,2	3,6	6,5	6,0	219	198	
NEG 165190	190	GGG	946,4	658,4	51.901	51.994	T3	3,8	4,0	7,0	6,5	247	225	
NEG 166270			1.142,8	795,0	62.671	62.781	-	4,3	5,0	8,2	8,1	279	251	
NEG 166670	197	GGG	1.216,6	795,8	66.718	62.844	-	5,0	5,9	10,0	9,8	285	257	
NEG 167890	195	GGG	1.439,4	993,4	78.937	78.448	-	7,0	7,5	9,6	13,0	320	282	
NEG 168500			1.550,4	1.077,0	85.024	85.050	-	7,5	8,2	14,0	12,9	326	289	
NEG 169510	197	GGG	1.734,6	1.132,8	95.125	89.457	-	4,6	8,0	13,5	12,4	381	340	
NEG 1612060	200	GGG	2.199,2	1.508,6	120.604	119.134	-	9,0	9,5	16,3	15,0	500	445	
NEG 1613890	205	GGG	2.532,4	1.740,0	138.877	137.407	-	10,6	11,3	19,0	18,0	643	605	
NEG 1617000			3.100,0	2.087,8	170.004	164.873	-	13,0	13,7	24,5	23,0	705	656	
NEG 1621960	210	GGG	4.005,0	2.510,6	219.634	198.261	-	19,0	19,0	33,0	25,5	926	896	
NEG 12440	140	GGG	142,8	142,8	4.405	6.343	-	0,4	0,45	1,2	1,2	60	60	
NEG 12610	150	GGG	196,4	196,4	6.058	8.724	T3	0,4	0,5	1,4	1,3	70	70	
NEG 12930	160	GGG	303,1	303,1	9.350	13.464	T3, T4	0,95	1,1	2,2	2,2	95	95	
NEG 121430	170	GGG	464,2	464,2	14.319	20.620	T3	1,5	1,79	4,1	4,2	133	133	
NEG 122150	180	GGG	696,4	696,4	21.482	30.934	T3	2,0	2,3	5,4	5,2	201	201	
NEG 122640			857,0	857,0	26.436	38.068	T3	2,5	3,0	6,0	6,0	217	217	
NEG 122920	190	GGG	964,4	964,4	29.194	42.839	-	2,8	3,35	6,5	6,5	242	242	
NEG 123530			1.142,8	1.142,8	35.253	50.764	T3	4,0	4,3	8,2	7,85	267	267	
NEG 124440	195	GGG	1.439,4	1.439,4	44.402	63.939	T3	4,9	5,8	9,9	9,5	320	320	
NEG 127640	197	GGG	2.478,0	2.194,6	76.440	97.485	-	6,8	7,5	13,2	12,0	438	419	
NEG 128520	200	GGG	2.763,2	2.481,4	85.238	110.225	-	7,6	8,3	14,0	13,5	540	520	
NEG 1211070	205	GGG	3.589,2	3.100,0	110.718	137.703	-	9,2	9,6	21,0	19,5	702	680	
NEG 1213160			4.267,4	3.812,8	131.639	169.366	-	10,4	11,2	22,0	20,0	755	711	
NEG 1217670	210	GGG	5.726,6	4.901,6	176.651	217.731	-	12,5	16,2	26,5	28,0	1015	981	

\*\* Technical data available upon request

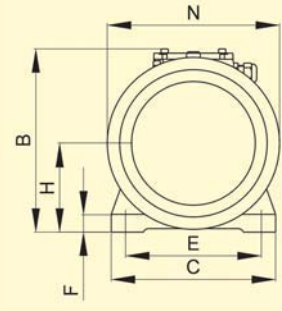
Unbalance type XLs



Unbalance type XS



IV



min <sup>-1</sup>	Type	Type of housing	Dimensions [mm]													Unbalance [No. of unbalance discs]													
			NEG	A	B	C	D	E mounting pattern		F	G	H	I	L	M	N	n <sub>2</sub>	Typ	50 Hz	60 Hz									
3000 3600	NEG 501510	IV	428	235	232	140	190	25	17	104	86,5	188	248	224	4	XLs	12	8											
	NEG 501770										14						10												
	NEG 502020		104								16	10																	
	NEG 502270										18	12																	
	NEG 503400	IV	558	335	310	155	255	30	23,5	160	108	274	302	310	4	XLs	16	10											
	NEG 503820										18						12												
	NEG 506220		IV								670	380	390				200	320	32	28	189	155	340	352	384	4	XS	4	4
	NEG 508830																											192	138
NEG 251370	IV	451	257	230	140	190	25	17	124,5	109,5	206,5			232	241	4						XS	4	4					
NEG 251760	IV	501	257	230	140	190	25	17	124,5	134,5	206			232	241	4						XS	4	4					
NEG 252060		573								170,5																			
NEG 252450	IV	535								283	278	155	225	28			22	140	136	236	255				271	4	XS	4	4
NEG 253080		619																	178										
NEG 253720	IV	588	335	310	155	255	30	23,5	160						139	274			302	310	4	XS	4	4					
NEG 254310		670													180														
NEG 254900	IV	640								369	340	180	280	30	26	173	155	302	322						340	4	XS	4	4
NEG 256460	IV	670								380	390	200	320	32	28	189	155	340	352						384	4	XS	4	4
NEG 258040	IV	629	395	392	200	320	100	28	192	135	355	270	375	4	XS	4	4												
NEG 258260	IV	862	436	460	125	380	35	38	215	230	387	320	414	6	XS	4	4												
NEG 2511210	IV	990	454	530	140	440	38	45	230	240	423	370	448	6	XS	4	4												
NEG 2513850																		240	423	370									
NEG 16780	IV	501								257	230	140						190	25	17	124,5	134,5	206,5	232	241	4	XS	4	4
NEG 161080	IV	573								257	230	140						190	25	17	124,5	170,5	206	232	241	4	XS	4	4
NEG 161470	IV	619	283	278	155	225	28	22	140	178	236	255	271	4	XS	4	4												
NEG 161660																		178	236	255									
NEG 162150	IV	670								335	310	155						255	30	23,5	160	180	274	302	310	4	XS	4	4
NEG 162550																						710							
NEG 163030	IV	742	369	340	180	280	30	26	173				206	302	322	340	4					XS	4	4					
NEG 163820													802																
NEG 164700	IV	772								380	390	200	320	32	28			189	206	340	352				384	4	XS	4	4
NEG 165190																			850										
NEG 166270	IV	750	436	460	125	380	35	38	215							174	387		320	414	6	XS	4	4					
NEG 166670																													
NEG 167890	IV	870								395	392	200	320	100	28	192	255	355	270						375	4	XS	4	4
NEG 168500																													
NEG 169510	IV	862	436	460	125	380	35	38	215								230	387	320	414	6	XS	4	4					
NEG 1612060	IV	990	454	530	140	440	38	45	230								240	420	370	448	6	XS	4	4					
NEG 1613890	IV	960	526	570	140	480	41	45	268	200	495	510	516	8	XS	4	4												
NEG 1617000																		240	495	510									
NEG 1621960	IV	1.150								607	610	140						520	38	45	297	297,5	542	510	582	8	XS	4	4
NEG 12440	IV	501								257	230	140						190	25	17	124,5	134,5	206,5	232	241	4	XS	4	4
NEG 12610	IV	573	257	230	140	190	25	17	124,5	170,5	206	232	241	4	XS	4	4												
NEG 12930	IV	619	283	278	155	225	28	22	140	178	236	255	271	4	XS	4	4												
NEG 121430	IV	670	335	310	155	255	30	23,5	160	180	274	302	310	4	XS	4	4												
NEG 122150	IV	742	369	340	180	280	30	26	173	206	302	322	340	4	XS	4	4												
NEG 122640										802								236											
NEG 122920	IV	772								380	390	200						320	32	28	189	206	340	352	384	4	XS	4	4
NEG 123530																						850							
NEG 124440	IV	870	395	392	200	320	100	28	192				255	355	270	375	4					XS	4	4					
NEG 127640	IV	1.002	436	460	125	380	35	38	215				300	387	320	414	6					XS	4	4					
NEG 128520	IV	1.070	454	530	140	440	38	45	230	280	423	370	448	6	XS	4	4												
NEG 1211070	IV	1.040	526	570	140	480	41	45	268	240	485	510	516	8	XS	4	4												
NEG 1213160																		280											
NEG 1217670	IV	1.150								607	610	140						520	38	45	297	279,5	542	510	582	8	XS	4	4





## Netter Electric External Vibrators Series NEG

### Special Version with Reduced Duty Time

#### Applications

Series NEG electric external vibrators are designed for continuous operation with 100% duty time. In addition, special versions with reduced duty times are available. The reduced duty time allows the use of smaller units possible with the same power output.

#### Design and functioning principle

Special vibrators with larger unbalances can be used for intermittent or short-time operation. Despite smaller unit size they deliver the same centrifugal forces as the next housing size up.

NEG with reduced duty times are built according to the customer's requirements, to enable individual solutions.

### Special Version with CC Unbalances



#### Applications

The special version with CC unbalances are used when two different unbalance settings need to be available during operation.

#### Design and functioning principle

In order to use the CC unbalances, a suitable electric switching circuit is required so that the NEG can be operated in both directions. When the NEG rotates in one direction it operates with e.g. maximum unbalance.

When the direction of rotation changes, the outer unbalance disc automatically turns through a specified angle against the inner unbalance disc, creating a reduced unbalance setting. The CC unbalances are built according to the customer's requirements and allow a second unbalance setting of 25-100% of the main value.

### Special Version NEG S in Stainless Steel



#### Applications

Series NEG S electric external vibrators can be used wherever the surfaces are subject to particular requirements for chemical resistance. An important feature of the NEG S series is its modular construction. This enables economical production of even the smallest of series in various steel materials. The protection class IP 66 (protection from dust entry and water flooding) allows cleaning with power jets and aggressive cleaning agents.

#### Design and functioning principle

All internal components of the stainless steel vibrators come from the established NEG series and are thus production proved.

Even the standard version of the NEG S has a surface quality of 6,3 µm and therefore satisfies the requirements for the chemical and pharmaceutical industries. A higher surface quality can easily be provided if required, e.g. for the food industry. Stainless steel housings are generally heavier than the standard housings. The greater mass must therefore be considered in the layout stage.

## Netter Frequency Converter Series NFU

### Applications

Series NFU frequency converters are used to regulate the frequency of series NEG electric external vibrators. Certain applications require frequencies which cannot be achieved with the normal multipole external vibrators at mains frequency. The special feature of this frequency converter is its robust and simple construction. The fully equipped units are designed for wall-mounting.

### Design and functioning principle

Low-loss power electronics make operation with high tolerance input voltages possible. The frequency converters produce constant 3-phase voltages at frequencies of 0.5 Hz to 120 Hz, making rotational speeds of 30 to 7200 rpm/min. possible with a 2-pole NEG. This enables easy adjustment of the rotational speed.

The permissible temperature range lies between 0°C and +40°C.



Type	kW/A	Supply Voltage	Protection Class
NFU 1-002/1,5	0,18/1,5	1~: 170 to 264 V, 50/60 Hz	IP 55
NFU 1-004/3,3	0,37/3,3	1~: 170 to 264 V, 50/60 Hz	IP 55
NFU 1-004/3,7	0,55/3,7	1~: 170 to 264 V, 50/60 Hz	IP 55
NFU 1-007/4,2	0,75/4,2	1~: 170 to 264 V, 50/60 Hz	IP 55
NFU 1-011/6,9	1,1/6,9	1~: 170 to 264 V, 50/60 Hz	IP 55
NFU 1-015/8	1,5/8,0	1~: 170 to 264 V, 50/60 Hz	IP 55
NFU 1-022/11	2,2/11	1~: 170 to 264 V, 50/60 Hz	IP 55
NFU 2-004/1,5	0,37/1,5	3~: 323 to 550 V, 50/60 Hz	IP 55
NFU 2-006/1,9	0,55/1,9	3~: 323 to 550 V, 50/60 Hz	IP 55
NFU 2-007/2,3	0,75/2,3	3~: 323 to 550 V, 50/60 Hz	IP 55
NFU 2-011/3	1,1/3,0	3~: 323 to 550 V, 50/60 Hz	IP 55
NFU 2-015/4,1	1,5/4,1	3~: 323 to 550 V, 50/60 Hz	IP 55
NFU 2-022/5,5	2,2/5,5	3~: 323 to 550 V, 50/60 Hz	IP 55
NFU 2-030/7,1	3,0/7,1	3~: 323 to 550 V, 50/60 Hz	IP 55
NFU 2-040/9,5	4,0/9,5	3~: 323 to 550 V, 50/60 Hz	IP 55

The use of a braking resistance allows rapid braking within a few revolutions after switching off the supply voltage, in order to avoid undesired resonance vibrations.

Type	Ohm/Watt	Protection Class
BZ 100/100	100/100	IP 54

## Netter Braking Devices Series BZ

### Applications

Series BZ braking devices are used to bring the running NEG to a standstill, as quickly as possible. It is often necessary to be able to switch off vibrating tables and conveyors without them running on, in order to avoid the symptoms of resonance.

A special feature of these devices is a very high braking efficiency with compact unit size.



Name	Supply Voltage	Protection Class	Max. Nominal Power NEG at 50 Hz/60 Hz
BZ 30	1~230 V or 3~400 V 50/60 Hz	IP 23	5 kW/5,5 kW
BZ 70	1~230 V or 3~400 V 50/60 Hz	IP 23	10 kW/11 kW
BZ 200	1~230 V or 3~400 V 50/60 Hz	IP 23	26 kW/28 kW

**The max. nominal power serves only as a guide for selection. Please consult us, we will help you with your layout!**

### Design and functioning principle

Upon activation the load-resistant power electronics change the direction of the electric rotational field, thus bringing the NEG to an immediate standstill. The momentarily high braking currents are easily tolerated by the NEG.

The permissible temperature range lies between 0°C and +40°C.

These braking devices are only suitable for constant mains frequencies of 50Hz or 60 Hz. Operation together with a frequency converter is not permitted.



## Netter Electric External Vibrators Series NEG

### Formulas

Unbalance	$M = s \times m$	Centrifugal force	$F = a_{(g)} \times m \times 9,81$
Acceleration	$a_{(g)} = s \times \left(\frac{n}{1000}\right)^2 \times 5,59$	Centrifugal force	$F = M \times \left(\frac{n}{1000}\right)^2 \times 54,84$

### Symbols and Units

s	Displacement	cm	n	Frequency	min <sup>-1</sup>
m	Weight with vibrator	kg	M	Unbalance	cmkg
F	Centrifugal force	N	a <sub>(g)</sub>	Acceleration	g

### Which Kind of Vibrator for Which Kind of Duty?

Duty	Frequency	Acceleration [a <sub>(g)</sub> ] Times acceleration due to gravity	Amplitude	Vibration	
				Rotary	Linear
Conveying, dosing	750 – 3000	2 – 5	Large		↔
Sieving	1000 – 1500	3 – 4	Large		↔
Draining	1500 – 3000	3 – 5	Medium		↔
Cleaning, shaking off filters	1500 – 3000	2 – 3	Medium	↻	
Lightening, loosening Emptying bulk material	1500 – 3000	0.15 - 0.2 of weight of material in the conical part of the silo	Medium	↻	
Compacting bulk material	1500 – 6000	2 – 4	Small	↻	↔
Concrete compaction	3000 – 9000	0,8 – 1,5	Very small	↻	↔
Testing components	300 – 6600	0,5 – 5	Adjustable	↻	↔



Conveying



Sieving



Compacting

### Applications

Series NEG, NEA or NED electric external vibrators are used whenever, for example, conveyor chutes or sieves need to be driven. In addition, these devices can loosen material blockages and adhesions in silos. When used on concrete forms, the especially even vibration produces high surface quality and compaction of the concrete.

The special feature of the NEG is its maintenance-free operation, even in rough environmental conditions.

### Design and functioning principle

Electric external vibrators are unbalance motors, which work according to the short circuit runner principle and, apart from a few significant differences, are very similar to conventional electric motors.

The 3-phase NEG units run at 750, 1000 or 3000 min<sup>-1</sup> with a 230/400V, 50 Hz power supply, depending on the number of poles.

The NEA single phase units run at 3000 min<sup>-1</sup> with a 230V, 50 Hz power supply. Additional voltages are available. The direct current NED units run at 3000 min<sup>-1</sup> with a 12 or 24 Volt power supply. Unbalances sitting on each end of the shaft produce an unidirectional sinus-shaped rotation at the frequency of the respective speed of rotation.

All NEG/NEA are also designed for operation at 60 Hz. The speed of rotation then lies at 20% above the values at 50 Hz. The unbalance is adjusted if necessary.

Generously dimensioned rolling bearings guarantee high operational safety. All NEG are suitable for operation with Netter frequency converters, without limitation.

**Netter provides solutions.  
Consult our experienced application technicians.**

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