



## PRE-LOAD WAVED WASHERS

### APPLICATION

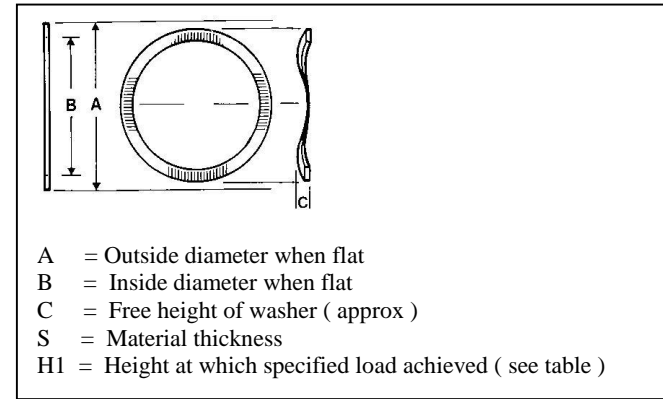
For pre-loading bearings in electric motors. The waved washer is installed in the bearing housing and works by maintaining a force on the outer race of the ball bearing, ensuring smooth and quiet running which results in extended life.

### EPL AND EMO-X PRE-LOAD WAVED WASHER SERIES

Development in liaison with bearing and electric motor manufacturers on the optimum loading characteristics required. The basic EPL range has been supplemented with the EMO-X range of waved washers since designers have found in some circumstances even better results can be obtained with more pressure on the outer ring of the bearing.

### MATERIALS AND FINISHES

All the waved washers are supplied in self colour high carbon spring steel. Other materials can be used on request ( Stainless Steel , Beryllium Copper, etc). Please contact our Sales department for further details.



- A = Outside diameter when flat
- B = Inside diameter when flat
- C = Free height of washer ( approx )
- S = Material thickness
- H1 = Height at which specified load achieved ( see table )

### METRIC SERIES

EMO REF	To Suit Bearing Housing ( mm )	A ( mm )	B ( mm )	S ( mm )	C approx ( mm )	Waves	H1 ( mm )	Load at H1 ( N )	Bearing References
EPL 1	10	9.5	4.5	0.20	1.1	2	1.0	15	623
EPL 2	13	12.5	7.5	0.20	1.4	2	1.0	19	624
EPL 4	16	15.5	10.5	0.15	1.2	3	1.0	19	625 634
EPL 5	16	15.5	10.5	0.15	1.3	3	1.0	23	
EPL 6	17	16.5	11.5	0.20	1.4	3	1.0	29	607 626 635
EPL 8	19	18.5	13.0	0.20	1.5	3	1.0	29	
EPL 10	21	20.5	15.0	0.20	1.8	3	1.0	29	
EPL 12	22	21.5	16.0	0.20	2.1	3	1.0	34	608 627
EMO-X 12	22	21.5	16.0	0.20	1.4	4	1.0	35	
EPL 13	24	23.5	17.0	0.20	2.2	3	1.5	35	609
EPL 15	26	25.5	19.0	0.30	2.0	3	1.5	39	6000 629

<b>EMO REF</b>	<b>To Suit Bearing Housing ( mm )</b>	<b>A ( mm )</b>	<b>B ( mm )</b>	<b>S ( mm )</b>	<b>C approx ( mm )</b>	<b>Waves</b>	<b>H1 (mm)</b>	<b>Load at H1 ( N )</b>	<b>Bearing References</b>
EPL 16	26	25.5	19.0	0.30	2.1	3	1.5	44	6000 629
EMO-X16	26	25.5	19.0	0.30	1.9	4	1.5	88	
EPL 17	28	27.5	21.0	0.30	2.2	3	1.5	39	6001
EPL 19	28	27.5	21.0	0.30	2.5	3	1.5	54	
EMO-X19	28	27.5	21.0	0.30	2.1	4	1.5	108	
EPL 20	30	29.5	23.0	0.30	2.5	3	1.5	44	6200
EPL 22	32	31.5	25.0	0.30	2.8	3	1.5	46	6002 6201
EPL 24	32	31.5	25.0	0.30	3.1	3	1.5	54	
EMO-X24	32	31.5	25.0	0.30	2.5	4	1.5	108	
EPL 25	32	31.5	25.0	0.30	3.5	3	1.5	67	
EPL 28	35	34.5	28.0	0.40	2.7	3	1.5	68	6003 6202 6300
EMO-X28	35	34.5	28.0	0.40	2.3	4	1.5	137	
EPL 29	35	34.5	28.0	0.40	2.9	3	1.5	78	
EPL 30	37	36.5	30.0	0.40	2.7	3	1.5	55	6301
EPL 31	37	36.5	30.0	0.40	2.9	3	1.5	66	
EPL 32	38	37.5	31.0	0.40	3.2	3	1.5	73	
EPL 34	40	39.5	33.0	0.40	3.6	3	1.5	77	6203
EMO-X34	40	39.5	33.0	0.40	2.8	4	1.5	147	
EPL 37	42	41.5	33.5	0.40	3.2	3	1.5	70	6004 6302
EMO-X37	42	41.5	33.5	0.40	2.9	4	1.5	176	
EPL 38	42	41.5	33.5	0.40	3.6	3	1.5	87	
EPL 39	44	43.5	35.5	0.40	3.7	3	1.5	77	
EPL 40	47	46.5	38.5	0.50	3.0	3	1.5	80	6005 6204 6303
EPL 41	47	46.5	38.5	0.50	3.1	3	1.5	87	
EMO-X41	47	46.5	38.5	0.50	3.0	4	1.5	236	
EPL 42	47	46.5	38.5	0.50	3.5	3	1.5	112	
EPL 43	52	51.5	42.0	0.50	3.3	3	1.5	87	6205 6304
EPL 44	52	51.5	42.0	0.50	3.8	3	1.5	112	
EMO-X44	52	51.5	42.0	0.50	3.5	4	1.5	332	
EPL 45	55	54.5	43.5	0.50	4.1	3	1.5	132	6006
EPL 46	62	61.5	50.5	0.50	4.0	3	1.5	75	6007 6206 6305 6403
EPL 47	62	61.5	50.5	0.50	4.9	3	1.5	111	
EPL 48	62	61.5	50.5	0.60	3.9	3	1.5	132	

EMO REF	To Suit Bearing Housing ( mm )	A ( mm )	B ( mm )	S ( mm )	C approx ( mm )	Waves	H1 (mm)	Load at H1 ( N )	Bearing References			
EMO-X48	62	61.5	50.5	0.60	3.7	4	1.5	392	6007	6206	6305	6403
EPL 49	62	61.5	50.5	0.60	4.4	3	1.5	165				
EPL 50	68	67.5	55.0	0.60	5.0	3	1.5	175	6008			
EPL 51	70	69.5	57.0	0.60	5.0	3	1.5	155				
EPL 53	72	71.5	59.0	0.60	4.8	3	1.5	133		6207	6306	6404
EPL 54	72	71.5	59.0	0.60	5.2	3	1.5	155				
EMO-X54	72	71.5	59.0	0.60	4.7	4	1.5	412				
EPL 55	75	74.5	62.0	0.60	7.1	3	1.5	203	6009			
EPL 57	80	79.5	63.5	0.60	5.2	3	1.5	156	6010	6208	6307	6405
EPL 58	80	79.5	63.5	0.60	5.8	3	1.5	176				
EMO-X58	80	79.5	63.5	0.60	5.6	4	1.5	540				
EPL 60	85	84.5	67.0	0.60	6.8	3	1.5	201		6209		
EMO-X60	85	84.5	67.0	0.60	5.7	4	1.5	500				
EPL 61	90	89.5	72.0	0.60	6.0	3	1.5	135	6011	6210	6308	6406
EPL 62	90	89.5	72.0	0.60	7.0	3	1.5	175				
EMO-X62	90	89.5	72.0	0.70	5.3	4	1.5	590				
EPL 64	90	89.5	72.0	0.70	6.4	3	1.5	243				
EPL 65	95	94.5	75.5	0.70	7.2	3	1.5	266	6012			
EPL 67	100	99.5	80.5	0.70	6.9	3	1.5	203	6013	6211	6309	6407
EMO-X67	100	99.5	80.5	0.70	6.5	4	1.5	605				
EPL 70	105	104.5	84.5	0.80	6.6	3	1.5	266				
EPL 72	110	109.5	90.5	0.80	7.0	3	1.5	224	6014	6212	6310	6408
EMO-X72	110	109.5	90.5	0.80	6.8	4	1.5	687				
EPL 75	115	114.5	95.5	0.80	10.0	3	1.5	280	6015			
EPL 77	117	116.5	97.5	0.80	9.0	3	1.5	248				
EPL 79	120	119.5	100.5	0.80	10.0	3	1.5	248		6213	6311	
EPL 82	125	124.5	105.5	0.80	13.0	3	1.5	312	6016	6214		
EPL 84	127	126.5	107.5	0.80	14.0	3	1.5	312				
EPL 86	130	129.5	110.5	0.80	13.0	3	1.5	264	6017	6215	6312	6410
EMO-X86	130	129.5	110.5	1.00	8.8	4	2.5	906				
EPL 87	130	129.5	110.5	1.00	10.0	3	2.5	330				
EPL 89	135	134.5	114.0	1.00	10.7	3	2.5	361				
EPL 90	137	136.5	116.0	1.00	9.3	3	2.5	285				

<b>EMO REF</b>	<b>To Suit Bearing Housing ( mm )</b>	<b>A ( mm )</b>	<b>B ( mm )</b>	<b>S ( mm )</b>	<b>C approx ( mm )</b>	<b>Waves</b>	<b>H1 (mm)</b>	<b>Load at H1 ( N )</b>	<b>Bearing References</b>			
EPL 92	140	139.5	119.0	1.00	9.8	3	2.5	285	6018	6216	6313	6411
EMO-X92	140	139.5	119.0	1.00	7.5	4	2.5	495				
EPL 96	145	144.5	124.0	1.00	14.5	3	2.5	418	6019			
EPL 99	150	149.5	129.0	1.00	11.0	3	2.5	266	6020	6217	6314	6412
EMO-X99	150	149.5	129.0	1.00	8.1	4	2.5	547				
EPL 103	157	156.5	136.0	1.00	15.5	3	2.5	336				
EPL 105	160	159.5	139.0	1.00	16.0	3	2.5	336	6021	6218	6315	6413
EMO-X105	160	159.5	139.0	1.00	8.0	4	2.5	501				
EPL 109	170	169.5	149.0	1.20	12.0	3	2.5	297	6022	6219	6316	
EMO-X109	170	169.5	149.0	1.20	8.5	4	2.5	546				
EPL 113	180	179.5	159.0	1.20	14.0	3	2.5	314	6024	6220	6317	6414
EMO-X113	180	179.5	159.0	1.20	8.5	4	2.5	455				
EPL 118	190	189.5	167.0	1.20	16.0	3	2.5	331		6221	6318	6415
EMO-X118	190	189.5	167.0	1.20	8.5	4	2.5	422				
EPL 122	200	199.5	177.0	1.20	11.0	3	2.5	170		6222	6319	6416
EPL 124	210	209.5	185.5	1.20	11.5	3	2.5	171		6223		6417
EPL 127	215	214.5	190.5	1.20	12.2	3	2.5	171		6224	6320	
EPL 129	220	219.5	195.5	2.00	7.4	3	3.5	333				
EPL 131	225	224.5	200.5	2.00	10.7	3	3.5	567			6321	6418
EPL 132	230	229.5	205.0	2.00	10.8	3	3.5	540		6226		
EPL 134	240	239.5	214.0	2.00	12.2	3	3.5	594			6322	
EPL 136	250	249.5	224.0	2.00	17.0	3	3.5	803		6228	6323	
EPL 138	260	259.5	234.0	2.00	18.2	3	3.5	770		6229	6324	
EPL 140	270	269.5	242.0	2.00	26.7	3	3.5	1184		6230		
EPL 141	280	279.5	252.0	2.00	23.5	3	3.5	897			6326	