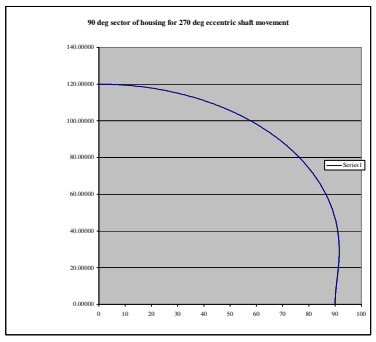
Not sure if the Mazda uses this geometry

IF e=15 mm & R=102 mm & a =3 mm

you could read off the Y coordinate to the peripheral port start or end, with housing major axis in the Y direction, then read across to the eccentric shaft angle
you cannot use this for side ports, well you could if you mark the apex position when the side port, is active and read off the eccentric angle, by finding the closest Y position down major axis?

Eccentric Shaft Turns DEG	X coordinates surface mm	Y coordinates surface mm	Apex sliding per angular shift mm	CUMULATIVE APEX SLIDING mm
0	0	120.00000	0	0
1	0.88341	119.99590	0.883419514	0.883419514
2	1.76655	119.98340	0.883228458	1.766647973
3	2.64956	119.96270	0.883252597	2.64990057
4	3.53233	119.93370	0.883246213	3.533146783
5	4.41462	119.89650	0.883073884	4.416220666
6	5.29641	119.85100	0.88296311	5.299183777
7	6.17759	119.79720	0.882820838	6.182004615
8	7.05805	119.73510	0.88264728	7.064651895
9	7.93769	119.66490	0.882436723	7.947088618
10	8.8164	119.58640	0.88220945	8.829298068
11	9.69411	119.49970	0.881981708	9.711279777
12	10.57067	119.40480	0.881682167	10.59296194
13	11.44603	119.30170	0.881410653	11.4743726
14	12.32006	119.19050	0.88107542	12.35544801
15	13.19265	119.07110	0.880721107	13.23616912
16	14.06372	118.94370	0.880337268	14.11650638
17	14.93317	118.80810	0.879960603	14.99646699
18	15.80089	118.66450	0.879522006	15.87598899
19	16.66678	118.51280	0.879078143	16.75506713
20	17.53075	118.35320	0.878587685	17.63365482
21	18.3927	118.18550	0.878112232	18.51176705
22	19.25254	118.00990	0.877587708	19.38935476
23	20.11016	117.82640	0.877031536	20.2663863
24	20.96547	117.63500	0.876464007	21.1428503
25	21.81838	117.43580	0.875863065	22.01871337
26	22.66878	117.22880	0.875230918	22.89394429
27	23.51659	117.01400	0.874597528	23.76854181
28	24.3617	116.79140	0.873934593	24.64247641
29	25.20403	116.56120	0.873219256	25.51569566
30	26.04349	116.32330	0.872519055	26.38821472
31	26.87998	116.07780	0.87177627	27.25998635
32	27.71341	115.82480	0.870984825	28.13097117
33	28.54369	115.56420	0.870216777	29.00118795
34	29.37073	115.29620	0.869378607	29.87056655
35	30.19444	115.02070	0.868561117	30.73912767
36	31.01474	114.73790	0.867679624	31.60680729
37	31.83154	114.44780	0.866787315	32.4735946
38	32.64475	114.15040	0.865885249	33.33947986
39	33.45427	113.84580	0.864929934	34.20440979
40	34.26005	113.53410	0.863966607	35.0683764
41	35.06198	113.21530	0.862974603	35.931351
42	35.85999	112.88940	0.861992326	36.79334333
43	36.65398	112.55660	0.860915768	37.6542591
44	37.44389	112.21680	0.859896417	38.51415551
45	38.22964	111.87020	0.85879836	39.37295387
46	39.01113	111.51680	0.857681864	40.23063574
47	39.7883	111.15670	0.856542596	41.08717833
48	40.56108	110.78990	0.855412864	41.9425912
49	41.32938	110.41650	0.854232082	42.79682328
50	42.09312	110.03660	0.853008088	43.64983137
51	42.85224	109.65020	0.851802873	44.50163424
52	43.60667	109.25740	0.85056244	45.35219668
53	44.35633	108.85830	0.849276707	46.20147339
54	45.10115	108.45300	0.847953373	47.04942676
55	45.84107	108.04140	0.846697211	47.89612397
56	46.57601	107.62380	0.845296731	48.7414207
57	47.30592	107.20010	0.843972925	49.58539363
58	48.03071	106.77050	0.842541811	50.42793544
59	48.75035	106.33500	0.84115514	51.26909059
60	49.46474	105.89370	0.839701591	52.10879218
61	50.17385	105.44670	0.838239818	52.94703199
62	50.8776	104.99400	0.836780349	53.78381234
63	51.57595	104.53570	0.835303306	54.61911565
64	52.26882	104.07200	0.833718494	55.45283414
65	52.95617	103.60280	0.832225127	56.28505927
66	53.63794	103.12840	0.830581539	57.11564081
67	54.31407	102.64860	0.82907166	57.94471247
68	54.98452	102.16370	0.827424445	58.77213691
69	55.64923	101.67380	0.825736879	59.59787379
70	56.30815	101.17880	0.824136255	60.42201005
71	56.96124	100.67900	0.822390776	61.24440082
72	57.60845	100.17430	0.820733132	62.06513396
73	58.24974	99.66486	0.819012807	62.88414676
74	58.88504	99.15079	0.817235618	63.70138238
75	59.51433	98.63215	0.815471246	64.51685363
76	60.13758	98.10904	0.813685833	65.33053946
77	60.75473	97.58156	0.811855451	66.14239491
78	61.36575	97.04976	0.810034987	66.9524299
79	61.97059	96.51376	0.808162994	67.76059289
80	62.56923	95.97363	0.806294156	68.56688705
81	63.16163	95.42951	0.804365796	69.37125284
82	63.74777	94.88141	0.802479725	70.17373257
83	64.3276	94.32947	0.800525198	70.97425777
84	64.9011	93.77378	0.79855715	71.77281498
85	65.46824	93.21444	0.796560742	72.56937572
86	66.02898	92.65151	0.794556186	73.36393191
87	66.58334	92.08511	0.792542724	74.15647463
88	67.13125	91.51531	0.790491877	74.94696651
89	67.6727	90.94221	0.788423562	75.73539007
90	68.20766	90.36591	0.78632302	76.52171309
91	68.73613	89.78650	0.784217119	77.30593021
92	69.2581	89.20407	0.782098067	78.08802828
93	69.77354	88.61871	0.779951744	78.86798002
94	70.28242	88.03052	0.777770101	79.64575012
95	70.78475	87.43959	0.775586032	80.42133616
96	71.2805	86.84601	0.773372665	81.19470882
97	71.76968	86.24989	0.771139499	81.96584832
98	72.25228	85.65130	0.768903601	82.73475192
99	72.72825	85.05036	0.766600499	83.50135242
100	73.19764	84.44711	0.764354325	84.26570675
101	73.66043	83.84170	0.76203402	85.02774077
102	74.1166	83.23418	0.759718118	85.78745889
103	74.56617	82.62468	0.757366117	86.544825
104	75.00911	82.01327	0.754995385	87.29982039
105	75.44546	81.40005	0.752622144	88.05244253
106	75.8752	80.78510	0.750226612	88.80266915
107	76.29833	80.16855	0.747778643	89.55044779
108	76.71487	79.55043	0.745370985	90.29581877
109	77.12481	78.93086	0.742911696	91.03873047
110	77.52819	78.30995	0.740435448	91.77916592
111	77.925	77.68778	0.737938808	92.51710473
112	78.31525	77.06443	0.73543204	93.25253677
113	78.69895	76.43998	0.732914383	93.98545115
114	79.07612	75.81455	0.730356005	94.71580715
115	79.44677	75.18821	0.72779339	95.44360054
116	79.81095	74.56106	0.725220101	96.16882064
117	80.16862	73.93316	0.722624549	96.89144519
118	80.51985	73.30463	0.720008662	97.61145386
119	80.86463	72.67555	0.717366639	98.3288205
120	81.20301	72.04598	0.714744296	99.04356479
121	81.53501	71.41604	0.712073313	99.7556381
122	81.86063	70.78579	0.709396537	100.4650346
123	82.17991	70.15532	0.706705129	101.1717398
124	82.49289	69.52475	0.703970884	101.8757107
125	82.7996	68.89410	0.701277724	102.5769884
126	83.10004	68.26349	0.69852213	103.2755105
127	83.39427	67.63301	0.695755937	103.9712664
128	83.68233	67.00272	0.692996427	104.6642629
129	83.96423	66.37271	0.690203021	105.3544659
130	84.24	65.74306	0.68739233	106.0418582
131	84.50972	65.11383	0.684601542	106.7264598
132	84.77339	64.48514	0.681742609	107.4082024
133	85.03106	63.85703	0.678907947	108.0871103
134	85.28278	63.22959	0.676050229	108.7631606
135	85.52858	62.60290	0.673170109	109.4363307
136	85.76849	61.97702	0.670285449	110.1066161
137	86.00259	61.35203	0.667394419	110.7740105
138	86.23088	60.72802	0.664458279	111.4384688
139	86.45344	60.10505	0.661531991	112.1000008
140	86.67032	59.48318	0.658604002	112.7586048
141	86.88154	58.86249	0.655644694	113.4142495
142	87.08718	58.24304	0.652691437	114.0669409
143	87.28724	57.62492	0.649689417	114.7166303
144	87.48184	57.00819	0.646703219	115.3633336
145	87.67098	56.39290	0.643704687	116.0070383
146	87.85474	55.77913	0.640688185	116.6477264
147	88.03316	55.16694	0.637660013	117.2853864
148	88.2063	54.55639	0.634624899	117.9200113
149	88.37421	53.94755	0.631569405	118.5515808
150	88.53696	53.34046	0.628526714	119.1801075
151	88.69459	52.73522	0.625429992	119.8055375
152	88.84718	52.13184	0.622375395	120.4279129
153	88.99478	51.53042	0.619267128	121.04718
154	89.13744	50.93099	0.616172217	121.6633522
155	89.27522	50.33362	0.613053216	122.2764054
156	89.40819	49.73835	0.609940484	122.8863459
157	89.53642	49.14524	0.6068133	123.4931592
158	89.65998	48.55435	0.603670494	124.0968297
159	89.7789	47.96571	0.600532277	124.697362
160	89.89326	47.37939	0.59736869	125.2947307
161	90.00314	46.79544	0.594197961	125.8889286
162	90.10859	46.21388	0.591042922	126.4799716
163	90.20968	45.63478	0.587857124	127.0678287
164	90.30646	45.05817	0.584675517	127.6525042
165	90.39905	44.48411	0.581478969	128.2339832
166	90.48744	43.91263	0.578275179	128.8122584
167	90.57178	43.34377	0.575078199	129.3873366
168	90.65206	42.77757	0.571863024	129.9591996
169	90.72842	42.21408	0.568640334	130.5278399
170	90.80089	41.65331	0.565433368	131.0932733
171	90.86954	41.09533	0.562187249	131.6554605
172	90.93446	40.54015	0.558962824	132.2144234
173	90.9957	39.98782	0.555714645	132.770138
174	91.05334	39.43835	0.552484978	133.322623
175	91.10748	38.89177	0.549254801	133.8718778
176	91.15814	38.34815	0.545975402	134.4178532
177	91.20541	37.80747	0.542742402	134.9606956
178	91.24938	37.26978	0.539484844	135.5000804
179	91.29011	36.73510	0.536229088	136.0363095
180	91.32768	36.20345	0.532975823	136.5692853
181	91.36217	35.67486	0.529714025	137.0989994
182	91.39362	35.14935	0.526450247	137.6254496
183	91.42212	34.62694	0.523186829	138.1486364
184	91.44777	34.10764	0.519933085	138.6685695
185	91.47058	33.59148	0.516663761	139.1852333
186	91.49069	33.07846	0.513413997	139.6986473
187	91.50816	32.56861	0.510149217	140.2087965
188	91.52303	32.06194	0.506888159	140.7156847
189	91.53542	31.55845	0.503642425	141.2193271
190	91.54535	31.05816	0.500388538	141.7197156
191	91.55292	30.56109	0.497127639	142.2168433
192	91.55821	30.06723	0.493888331	142.7107316
193	91.56129	29.57658	0.490659667	143.2013913
194	91.56221	29.08919	0.48739868	143.6887821
195	91.56108	28.60500	0.484191319	144.1729734
196	91.55795	28.12406	0.480950185	144.6539236
197	91.55289	27.64636	0.477726798	145.1316504
198	91.54598	27.17189	0.474520315	145.6061707
199	91.53729	26.70066	0.47131012	146.0774809
200	91.52687	26.23267	0.468105989	146.5455868
201	91.51483	25.76789	0.46493592	147.0105228
202	91.50121	25.30635	0.461740919	147.4722637
203	91.4861	24.84802	0.458579002	147.9308427
204	91.46954	24.39291	0.455411183	148.3862539
205	91.45164	23.94099	0.4522736	148.8385282
206	91.43242	23.49227	0.449131436	149.2876597
207	91.412	23.04673	0.446007699	149.7336674
208	91.39041	22.60435	0.442906528	150.1765739
209	91.36773	22.16513	0.439805174	150.6163791
210	91.34402	21.72905	0.43672409	151.0531032
211	91.31935	21.29608	0.433672261	151.4867754
212	91.29379	20.86623	0.430609262	151.9173847
213	91.26738	20.43945	0.427596371	152.3449811
214	91.24022	20.01574	0.424579592	152.7695606
215	91.21235	19.59508	0.421582225	153.1911429
216	91.18384	19.17743	0.418621957	153.6097648
217	91.15474	18.76278	0.41566986	154.0254347
218	91.12511	18.35111	0.412734934	154.4381696
219	91.09502	17.94237	0.409846063	154.8480157
220	91.06454	17.53655	0.406963024	155.2549787
221	91.03371	17.13363	0.404097779	155.6590765
222	91.00259	16.73356	0.401278531	156.060355
223	90.97121	16.33631	0.398487474	156.4588425
224	90.93967	15.94187	0.395698983	156.8545415
225	90.90801	15.55018	0.392967444	157.2475089
226	90.87625	15.16121	0.390264473	157.6377734
227	90.84448	14.77495	0.38756434	158.0253377
228	90.81274	14.39132	0.384940781	158.4102785
229	90.78109	14.01031	0.382322302	158.7926008
230	90.74955	13.63188	0.379742066	159.1723429
231	90.71819	13.25598	0.377205858	159.5495487
232	90.68706	12.88256	0.374715323	159.9242641
233	90.65617	12.51160	0.37224389	160.296508
234	90.62561	12.14303	0.369834772	160.6663427
235	90.59538	11.77682	0.367455599	161.0337983
236	90.56556	11.41292	0.365119764	161.3989181

R.A.Rowley
UK



172.829 mm total sliding per 270 deg shaft = housing quadrant
0.883 mm for first deg at major axis
0.322 mm for last deg at minor axis

E=15,R=102 & a=3

Trochoid checking constants'		
Major axis dim	A =	(e+R+a)*2
Minor Axis dim	B =	(R+a-e)*2
Waste dim	C =	A-56.876

237	90.53616	11.05128	0.362833088	161.7617512
238	90.50725	10.69184	0.360600751	162.1223519
239	90.47883	10.33458	0.358388621	162.4807405
240	90.45097	9.97941	0.356261012	162.8370016
241	90.42368	9.62629	0.35417295	163.1911745
242	90.39701	9.27518	0.352121458	163.543296
243	90.37101	8.92601	0.350136672	163.8934326
244	90.34568	8.57872	0.348212511	164.2416452
245	90.32104	8.23328	0.346317662	164.5879628
246	90.29716	7.88959	0.344518607	164.9324814
247	90.27403	7.54761	0.342761312	165.2752427
248	90.2517	7.20729	0.341051801	165.6162945
249	90.23019	6.86854	0.339432236	165.9557268
250	90.20952	6.53132	0.33785289	166.2935797
251	90.18974	6.19556	0.336342126	166.6299218
252	90.17082	5.86119	0.334904857	166.9648266
253	90.15282	5.52814	0.333536059	167.2983627
254	90.13574	5.19636	0.332219347	167.6305821
255	90.11962	4.86575	0.331002759	167.9615848
256	90.10446	4.53626	0.329838575	168.2914234
257	90.09028	4.20783	0.328735969	168.6201594
258	90.07708	3.88037	0.32772594	168.9478853
259	90.06488	3.55382	0.326777818	169.2746631
260	90.05372	3.22810	0.325911129	169.6005742
261	90.04357	2.90314	0.325118477	169.9256927
262	90.03447	2.57885	0.324417654	170.2501104
263	90.02644	2.25520	0.3237496	170.57386
264	90.01945	1.93206	0.323215593	170.8970756
265	90.01351	1.60939	0.32272467	171.2198002
266	90.00867	1.28710	0.32232634	171.5421266
267	90.00487	0.96512	0.322002423	171.864129
268	90.00218	0.64336	0.321771244	172.1859002
269	90.00055	0.32179	0.321574131	172.5074744
270	90	0.00028	0.32151047	172.8289848

91.56221