



- *Possibilities to achieve dimension within 19.0 to 19.50 mm*

EXISTING PROCESS SEQUENCE & OBSERVED DIMENSION



SAPTAGIRI INDUSTRIES

Raw Material Inward



Sheet Shearing



Blanking



Two side chamfer



First Forming



U Forming



Piercing first Hole



Piercing Second Hole



Extrusion & Chamfer



Chamfer



Tapping



Cleaning



Final Inspection



Packing/storing

U forming punch



Observed dim

Sr. no	U forming	Sr. no	U forming	Sr. no	U forming	Sr. no	U forming
1	19.85	26	19.92	51	19.85	76	19.92
2	19.87	27	19.98	52	19.85	77	19.87
3	19.87	28	19.97	53	19.87	78	19.87
4	19.92	29	19.85	54	19.87	79	19.92
5	19.98	30	19.87	55	19.92	80	19.98
6	19.97	31	19.87	56	19.98	81	19.97
7	19.85	32	19.92	57	19.97	82	19.98
8	19.87	33	19.98	58	19.85	83	19.97
9	19.87	34	19.97	59	19.87	84	19.85
10	19.92	35	19.98	60	19.87	85	19.87
11	19.98	36	19.92	61	19.92	86	19.87
12	19.97	37	19.98	62	19.98	87	19.97
13	19.98	38	19.97	63	19.97	88	19.85
14	19.97	39	19.98	64	19.98	89	19.87
15	19.85	40	19.97	65	19.97	90	19.85
16	19.87	41	19.85	66	19.85	91	19.87
17	19.87	42	19.85	67	19.87	92	19.87
18	19.98	43	19.87	68	19.87	93	19.92
19	19.97	44	19.87	69	19.85	94	19.98
20	19.98	45	19.92	70	19.87	95	19.97
21	19.97	46	19.98	71	19.87	96	19.85
22	19.85	47	19.97	72	19.92	97	19.98
23	19.98	48	19.85	73	19.98	98	19.97
24	19.97	49	19.98	74	19.97	99	19.98
25	19.85	50	19.97	75	19.97	100	19.92
Min	19.85		19.85		19.85		19.85
Max	19.98		19.98		19.98		19.98
Average	19.92		19.93		19.91		19.92



EXISTING PROCESS SEQUENCE

AFTER ADDED RESTACKING PROCESS SEQUENCE

Raw Material Inward



Sheet Shearing



Blanking



Two side chamfer



First Forming



U Forming



Piercing first Hole



Piercing Second Hole



Extrusion & Chamfer



Chamfer



Tapping



Cleaning



Final Inspection



Packing/storing

U forming punch



Raw Material Inward



Sheet Shearing



Blanking



Two side chamfer



First Forming



U Forming



Restacking



Piercing first Hole



Piercing Second Hole



Extrusion & Chamfer



Chamfer



Tapping



Cleaning



Final Inspection



Packing/storing

Restacking punch

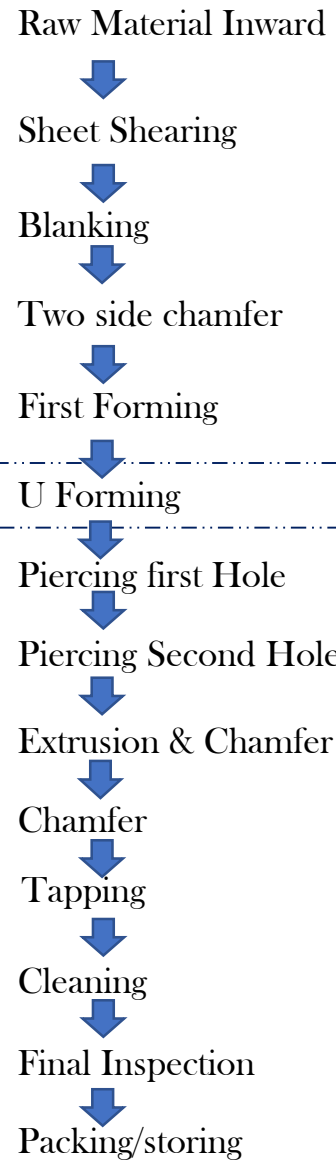


EXISTING PROCESS SEQUENCE

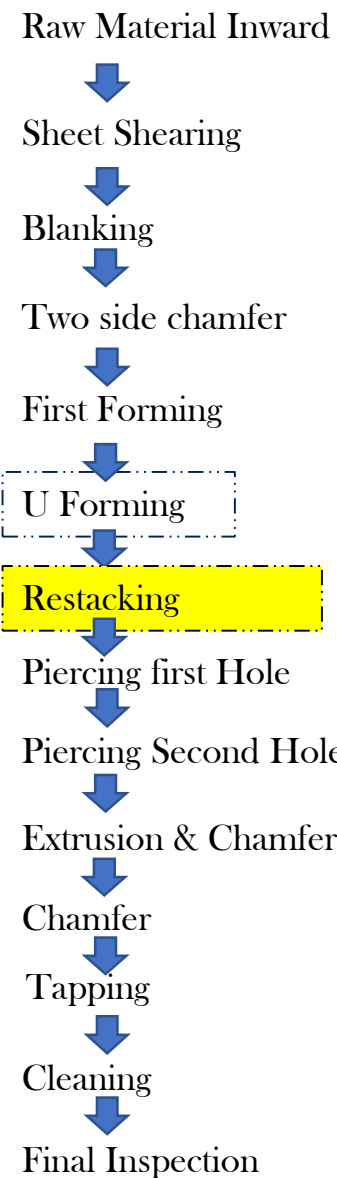
AFTER ADDED RESTACKING PROCESS SEQUENCE



SAPTAGIRI INDUSTRIES



Sr. no	U forming	Sr. no	U forming	Sr. no	U forming	Sr. no	U forming
1	19.85	26	19.92	51	19.85	76	19.92
2	19.87	27	19.98	52	19.85	77	19.87
3	19.87	28	19.97	53	19.87	78	19.87
4	19.92	29	19.85	54	19.87	79	19.92
5	19.98	30	19.87	55	19.92	80	19.98
6	19.97	31	19.87	56	19.98	81	19.97
7	19.85	32	19.92	57	19.97	82	19.98
8	19.87	33	19.98	58	19.85	83	19.97
9	19.87	34	19.97	59	19.87	84	19.85
10	19.92	35	19.98	60	19.87	85	19.87
11	19.98	36	19.92	61	19.92	86	19.87
12	19.97	37	19.98	62	19.98	87	19.97
13	19.98	38	19.97	63	19.97	88	19.85
14	19.97	39	19.98	64	19.98	89	19.87
15	19.85	40	19.97	65	19.97	90	19.85
16	19.87	41	19.85	66	19.85	91	19.87
17	19.87	42	19.85	67	19.87	92	19.87
18	19.98	43	19.87	68	19.87	93	19.92
19	19.97	44	19.87	69	19.85	94	19.98
20	19.98	45	19.92	70	19.87	95	19.97
21	19.97	46	19.98	71	19.87	96	19.85
22	19.85	47	19.97	72	19.92	97	19.98
23	19.98	48	19.85	73	19.98	98	19.97
24	19.97	49	19.98	74	19.97	99	19.98
25	19.85	50	19.97	75	19.97	100	19.92
Min	19.85		19.85		19.85		19.85
Max	19.98		19.98		19.98		19.98
Average	19.92		19.93		19.91		19.92



Sr. no	Restacking	Sr. no	Restacking	Sr. no	Restacking	Sr. no	Restacking
1	19.35	26	19.28	51	19.42	76	19.52
2	19.32	27	19.42	52	19.45	77	19.48
3	19.42	28	19.45	53	19.37	78	19.38
4	19.38	29	19.37	54	19.52	79	19.45
5	19.38	30	19.52	55	19.48	80	19.38
6	19.45	31	19.48	56	19.37	81	19.45
7	19.23	32	19.38	57	19.52	82	19.28
8	19.28	33	19.45	58	19.48	83	19.37
9	19.37	34	19.23	59	19.38	84	19.38
10	19.38	35	19.28	60	19.45	85	19.38
11	19.38	36	19.42	61	19.38	86	19.45
12	19.45	37	19.45	62	19.45	87	19.48
13	19.23	38	19.37	63	19.23	88	19.38
14	19.28	39	19.52	64	19.42	89	19.45
15	19.42	40	19.48	65	19.45	90	19.23
16	19.38	41	19.38	66	19.23	91	19.28
17	19.38	42	19.45	67	19.28	92	19.42
18	19.45	43	19.23	68	19.37	93	19.45
19	19.23	44	19.28	69	19.52	94	19.23
20	19.28	45	19.37	70	19.48	95	19.28
21	19.42	46	19.45	71	19.45	96	19.45
22	19.45	47	19.23	72	19.37	97	19.37
23	19.37	48	19.28	73	19.52	98	19.52
24	19.52	49	19.42	74	19.37	99	19.48
25	19.48	50	19.45	75	19.52	100	19.37
Min	19.23		19.23		19.23		19.23
Max	19.52		19.52		19.52		19.52
Average	19.37		19.39		19.42		19.40

Comparison in-between U forming & Restacking dimension



SAPTAGIRI INDUSTRIES

Sr. no	U FORMING	RESTACKING	Sr. no	U FORMING	RESTACKING	Sr. no	U FORMING	RESTACKING	Sr. no	U FORMING	RESTACKING
1	19.85	19.35	26	19.92	19.28	51	19.85	19.42	76	19.92	19.52
2	19.87	19.32	27	19.98	19.42	52	19.85	19.45	77	19.87	19.48
3	19.87	19.42	28	19.97	19.45	53	19.87	19.37	78	19.87	19.38
4	19.92	19.38	29	19.85	19.37	54	19.87	19.52	79	19.92	19.45
5	19.98	19.38	30	19.87	19.52	55	19.92	19.48	80	19.98	19.38
6	19.97	19.45	31	19.87	19.48	56	19.98	19.37	81	19.97	19.45
7	19.85	19.23	32	19.92	19.38	57	19.97	19.52	82	19.98	19.28
8	19.87	19.28	33	19.98	19.45	58	19.85	19.48	83	19.97	19.37
9	19.87	19.37	34	19.97	19.23	59	19.87	19.38	84	19.85	19.38
10	19.92	19.38	35	19.98	19.28	60	19.87	19.45	85	19.87	19.38
11	19.98	19.38	36	19.92	19.42	61	19.92	19.38	86	19.87	19.45
12	19.97	19.45	37	19.98	19.45	62	19.98	19.45	87	19.97	19.48
13	19.98	19.23	38	19.97	19.37	63	19.97	19.23	88	19.85	19.38
14	19.97	19.28	39	19.98	19.52	64	19.98	19.42	89	19.87	19.45
15	19.85	19.42	40	19.97	19.48	65	19.97	19.45	90	19.85	19.23
16	19.87	19.38	41	19.85	19.38	66	19.85	19.23	91	19.87	19.28
17	19.87	19.38	42	19.85	19.45	67	19.87	19.28	92	19.87	19.42
18	19.98	19.45	43	19.87	19.23	68	19.87	19.37	93	19.92	19.45
19	19.97	19.23	44	19.87	19.28	69	19.85	19.52	94	19.98	19.23
20	19.98	19.28	45	19.92	19.37	70	19.87	19.48	95	19.97	19.28
21	19.97	19.42	46	19.98	19.45	71	19.87	19.45	96	19.85	19.45
22	19.85	19.45	47	19.97	19.23	72	19.92	19.37	97	19.98	19.37
23	19.98	19.37	48	19.85	19.28	73	19.98	19.52	98	19.97	19.52
24	19.97	19.52	49	19.98	19.42	74	19.97	19.37	99	19.98	19.48
25	19.85	19.48	50	19.97	19.45	75	19.97	19.52	100	19.92	19.37
Min	19.85	19.23		19.85	19.23		19.85	19.23		19.85	19.23
Max	19.98	19.52		19.98	19.52		19.98	19.52		19.98	19.52
Average	19.92	19.37		19.93	19.39		19.91	19.42		19.92	19.40

Conclusion

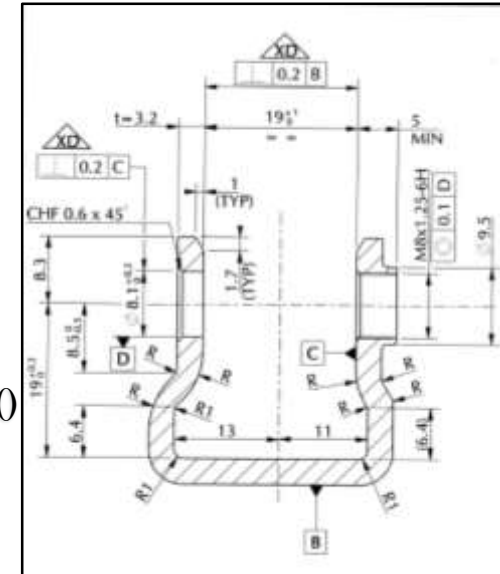


SAPTAGIRI INDUSTRIES

Conclusion:

Specification: 19.0 +1.0 mm

		U forming	Restacking
As verified parts observed dimension	Punch Size	19.05 mm	19.05 mm
	Min	19.85	19.23
	Max	19.98	19.52
	Average	19.92	19.37



- Forming punch diameter already kept at lower side i.e. 19.05 mm.
- While production might be possibility to it's go at lower side i.e 19.00 mm.
- Consider the length/ height it's too big almost 27.3 mm difficult to maintain straightness.
- Consider the raw material spring back tension.



SAPTAGIRI INDUSTRIES

Thanks...