

Table of Leads and Change Gears for Cutting Spirals on Van Norman Universal Milling Machines

(RAM and HORIZONTAL TYPES)

. *and* .

Index Table for Van Norman Dividing Heads

10" VERTICAL SWIVEL
10" HORIZONTAL SWIVEL
7½" PLAIN INDEXING

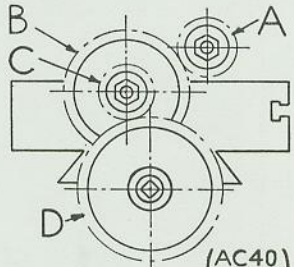


VAN NORMAN COMPANY
SPRINGFIELD 7, MASSACHUSETTS, U. S. A.

TABLE OF LEADS AND CHANGE GEARS FOR CUTTING SPIRALS ON VAN NORMAN UNIVERSAL MILLING MACHINES (Ram and Horizontal Types)

Lead in Inches To One Turn	Gear on Worm	1st Gear on Stud	2nd Gear on Stud	Gear on Table Screw	TABLE OF APPROXIMATE ANGLES FOR CUTTING SPIRALS									
					DIAMETER OF WORK IN INCHES									
					A	B	C	D	1/4"	1/2"	3/4"	1"	1 1/2"	2"

FOLLOWING SHORT LEADS CANNOT BE CUT BY POWER														
.67	24	86	24	100										
.78	24	86	28	100	44 1/2									
.89	24	86	32	100	41									
1.12	24	86	40	100	34 1/2									
1.34	24	86	48	100	30 1/4									
1.46	24	64	28	72	28									
1.56	24	86	56	100	26 1/2									
1.67	24	64	32	72	25	43 1/4								
1.97	32	64	28	72	21 3/4	39								
2.08	24	64	40	72	20 1/2	37								
2.22	32	56	28	72	19 1/4	35								



LEAD IN INCHES = $\frac{(AC40)}{BD} \times 4$

LEADS BELOW CAN BE CUT BY POWER														
2.50	24	64	48	72	17	32	43 1/4							
2.78	40	56	28	72	15 1/2	29 1/2	40 1/2							
2.92	24	64	56	72	15	28 1/4	39							
3.24	40	48	28	72	13 1/4	25 3/4	36	44 1/4						
3.70	40	48	32	72	11 3/4	23	32 1/2	40 1/2						
3.89	56	48	24	72	11 1/4	22	31 1/4	39						
4.17	40	72	48	64	10 1/2	20 1/2	29 1/2	37						
4.46	48	40	32	86	9 3/4	19 1/4	27 3/4	35						
4.86	40	64	56	72	9	17 3/4	25 3/4	33	44 1/4					
5.33	48	40	32	72	8 1/4	16 1/2	23 3/4	30 1/2	41 1/2					
5.44	56	40	28	72	8	16	23 1/2	30	41					
6.12	56	40	28	64	7 1/4	14 1/2	21	27	37 3/4					
6.22	56	40	32	72	7	14 1/4	20 3/4	26 3/4	37 1/4					
6.48	56	48	40	72	6 3/4	13 1/2	20	25 3/4	36 1/4	44 1/4				
6.67	64	48	28	56	6 1/2	13 1/4	19 1/2	25 1/4	35 1/4	43 1/2				
7.41	64	48	40	72	6	12	17 3/4	22 3/4	32 1/2	40 1/4				
7.62	64	48	32	56	5 3/4	11 1/2	17 1/4	22 1/4	32	39 1/2				
8.33	48	32	40	72	5 1/4	10 1/2	15 3/4	20 1/2	29 1/2	37	43 1/2			
8.95	86	48	28	56	5	10	14 3/4	19 1/4	28	35 1/4	41 1/4			
9.33	56	40	48	72	4 3/4	9 1/2	14	18 1/2	27	34	40 1/4			
9.52	64	48	40	56	4 1/2	9 1/4	13 3/4	18 1/4	26 1/2	33 1/2	39 1/2	45		
10.37	64	48	56	72	4 1/4	8 1/2	12 3/4	17	24 1/2	31 1/4	37 1/4	42 1/4		
10.50	48	40	56	64	4 1/4	8 1/2	12 1/2	16 3/4	24 1/4	31	36 3/4	42		
10.94	56	32	40	64	4	8 1/4	12	16 1/4	23 1/2	30	35 3/4	40 3/4		
11.11	64	32	40	72	4	8	11 3/4	16	23	29 1/2	35 1/2	40 1/4	44 3/4	
12.00	72	40	32	48	3 3/4	7 1/4	11	15	21 1/2	27 3/4	33 1/4	38	42 1/2	
13.12	56	32	48	64	3 1/2	6 3/4	10 1/4	13 1/2	20	25 3/4	31	35 3/4	40	43 3/4
13.71	64	40	48	56	3 1/4	6 1/2	9 3/4	13	19	24 3/4	30	34 1/2	38 1/4	42 1/2
15.24	64	28	48	72	3	5 3/4	8 3/4	11 3/4	17 1/4	22 1/2	27 1/4	31 3/4	35 3/4	39 1/2
15.75	56	64	72	40	2 3/4	5 1/2	8 1/2	11 1/4	16 3/4	21 3/4	26 1/2	31	35	38 1/2

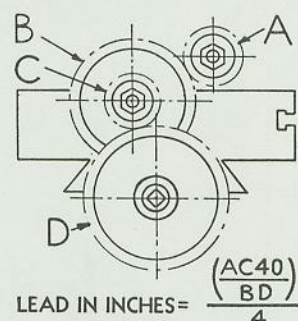


TABLE OF LEADS AND CHANGE GEARS . . Continued

Lead in Inches To One Turn	Gear on Worm	1st Gear on Stud	2nd Gear on Stud	Gear on Table Screw	TABLE OF APPROXIMATE ANGLES FOR CUTTING SPIRALS									
					DIAMETER OF WORK IN INCHES									
					A	B	C	D	1/4"	1/2 "	3/4"	1"	1 1/2"	2"
LEADS BELOW CAN BE CUT BY POWER														
16.87	72	32	48	64	2 1/2	5 1/4	7 3/4	10 1/2	15 3/4	20 1/2	25	29 1/4	33 1/4	36 1/2
17.14	64	32	48	56	2 1/2	5 1/4	7 3/4	10 1/4	15 1/2	20 1/4	24 3/4	29	32 3/4	36
18.75	72	32	40	48	2 1/4	4 3/4	7 1/4	9 1/2	14 1/4	18 1/2	22 3/4	26 3/4	30 1/4	33 3/4
19.59	64	28	48	56	2 1/4	4 1/2	6 3/4	9 1/4	13 1/2	18	22	25 3/4	29 1/4	32 3/4
21.43	72	24	40	56	2	4 1/4	6 1/4	8 1/2	12 1/2	16 1/2	20 1/4	23 3/4	27 1/4	30 1/4
22.50	72	28	56	64	2	4	6	8	12	15 3/4	19 1/4	22 3/4	26	29 1/4
23.33	64	32	56	48	2	4	5 3/4	7 3/4	11 1/2	15 1/4	18 3/4	22	25 1/4	28 1/4
26.25	72	24	56	64	1 3/4	3 1/2	5	7	10 1/4	13 1/2	16 3/4	19 3/4	22 3/4	25 1/2
28.00	64	32	56	40	1 3/4	3 1/4	4 3/4	6 1/2	9 1/2	12 3/4	15 3/4	18 3/4	21 1/2	24
31.50	72	32	56	40	1 1/2	3	4 1/4	5 3/4	8 1/2	11 1/4	14	16 1/2	19 1/4	21 3/4
36.00	72	32	64	40	1 1/4	2 1/2	3 3/4	5	7 1/2	10	12 1/4	14 3/4	17	19 1/4
41.14	72	28	64	40	1	2 1/4	3 1/4	4 1/2	6 1/2	8 3/4	10 3/4	13	15	17
45.00	72	28	56	32	1	2	3	4	6	8	10	11 3/4	13 3/4	15 1/2
48.00	72	24	64	40	1	2	3	3 3/4	5 1/2	7 1/2	9 1/4	11 1/4	13	14 1/2
51.43	72	28	64	32	3/4	1 3/4	2 3/4	3 1/2	5 1/4	7	8 3/4	10 1/2	12	13 3/4
60.00	72	24	64	32	3/4	1 1/2	2 1/4	3	4 1/2	6	7 1/2	9	10 1/4	11 3/4
68.57	72	24	64	28	3/4	1 1/4	2	2 1/2	4	5 1/4	6 1/2	8	9	10 1/4
76.78	86	28	100	40	1 1/2	1 1/4	1 3/4	2 1/4	3 1/2	4 3/4	5 3/4	7	8 1/4	9 1/4
83.33	64	24	100	32	1 1/2	1	1 3/4	2 1/4	3 1/4	4 1/4	5 1/2	6 1/2	7 1/2	8 1/2
93.75	72	24	100	32	1 1/2	1	1 1/2	2	2 3/4	3 3/4	4 3/4	5 3/4	6 3/4	7 3/4
107.14	72	24	100	28	1 1/2	3/4	1 1/4	1 3/4	2 1/2	3 1/4	4 1/4	5	5 3/4	6 3/4
125	72	24	100	24	1 1/4	3/4	1	1 1/2	2 1/4	2 3/4	3 1/2	4 1/4	5	5 3/4
149.3	86	24	100	24	1 1/4	1 1/2	1	1 1/4	1 3/4	2 1/2	3	3 1/2	4 1/4	4 3/4

INDEX TABLE FOR PLATES

(1) 18 — 24 — 28 — 30 — 34 — 37
(2) 38 — 39 — 41 — 42 — 43 — 46
(3) 47 — 49 — 54 — 58 — 62 — 66

No. of Divisions				No. of Divisions				No. of Divisions				No. of Divisions				No. of Divisions				No. of Divisions				No. of Divisions				No. of Divisions				No. of Divisions				No. of Divisions											
Circle				Turns				Holes				Circle				Turns				Holes				Circle				Turns				Holes				Circle				Turns				Holes			
1	any	40		15	18	2	12	29	58	1	22	43	43	40	62	62	40	85	34	16	112	28	10	152	38	10	190	38	8	240	66	11															
2	any	20		16	24	2	12	30	24	1	8	44	66	60	64	24	15	86	43	20	115	46	16	155	62	16	192	24	5	245	49	8															
3	18	13	6	17	34	2	12	31	62	1	18	45	54	48	65	39	24	88	66	30	116	58	20	156	39	10	195	39	8	248	62	10															
4	any	10		18	18	2	4	32	28	1	7	46	46	40	66	66	40	90	54	24	120	66	22	160	28	7	196	49	10	260	39	6															
5	any	8		19	38	2	4	33	66	1	14	47	47	40	68	34	20	92	46	20	124	62	20	164	41	10	200	30	6	264	66	10															
6	18	6	12	20	any	2		34	34	1	6	48	24	20	70	28	16	94	47	20	130	39	12	165	66	16	205	41	8	270	54	8															
7	28	5	20	21	42	1	38	35	28	1	4	49	49	40	72	54	30	95	38	16	132	66	20	168	42	10	210	42	8	272	34	5															
8	any	5		22	66	1	54	36	54	1	6	50	30	24	74	37	20	96	24	10	135	54	16	170	34	8	215	43	8	280	28	4															
9	18	4	8	23	46	1	34	37	37	1	3	52	39	30	75	30	16	98	49	20	136	34	10	172	43	10	216	54	10	290	58	8															
10	any	4		24	24	1	16	38	38	1	2	54	54	40	76	38	20	100	30	12	140	28	8	176	66	15	220	66	12	296	37	5															
11	66	3	42	25	30	1	18	39	39	1	1	55	66	48	78	39	20	104	39	15	144	18	5	180	54	12	224	28	5	300	30	4															
12	24	3	8	26	39	1	21	40	any	1		56	28	20	80	34	17	105	42	16	145	58	16	184	46	10	230	46	8	310	62	8															
13	39	3	3	27	54	1	26	41	41		40	58	58	40	82	41	20	108	54	20	148	37	10	185	37	8	232	58	10	330	66	8															
14	49	2	42	28	42	1	18	42	42		40	60	42	28	84	42	20	110	66	24	150	30	8	188	47	10	235	47	8	360	54	6															

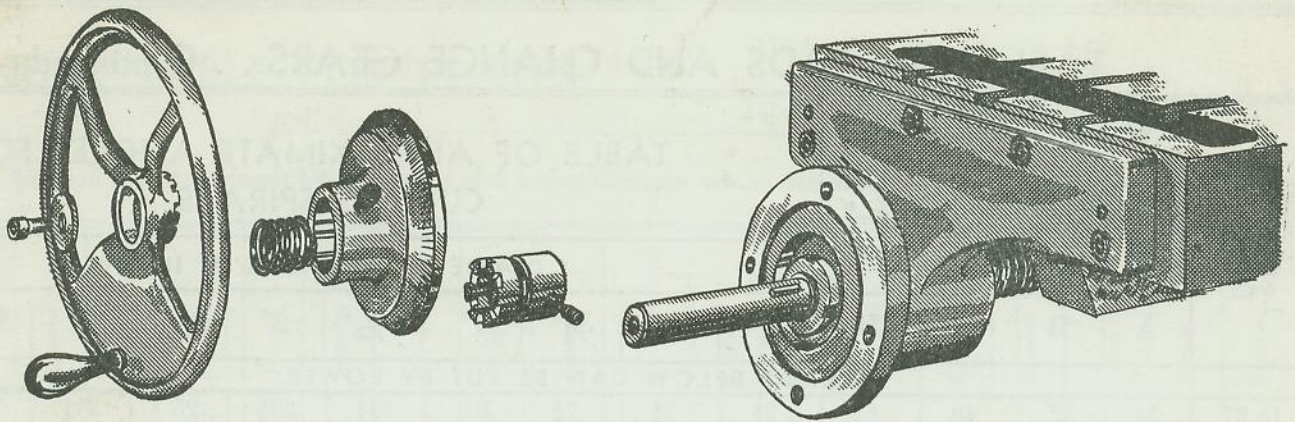
DRMAN COMPANY, Springfield 7, Mass

INDEX TABLE FOR PLATES

(1) 24—25—28—30—34—37
 (2) 38—39—41—42—43—46
 (3) 47—49—51—53—54—57
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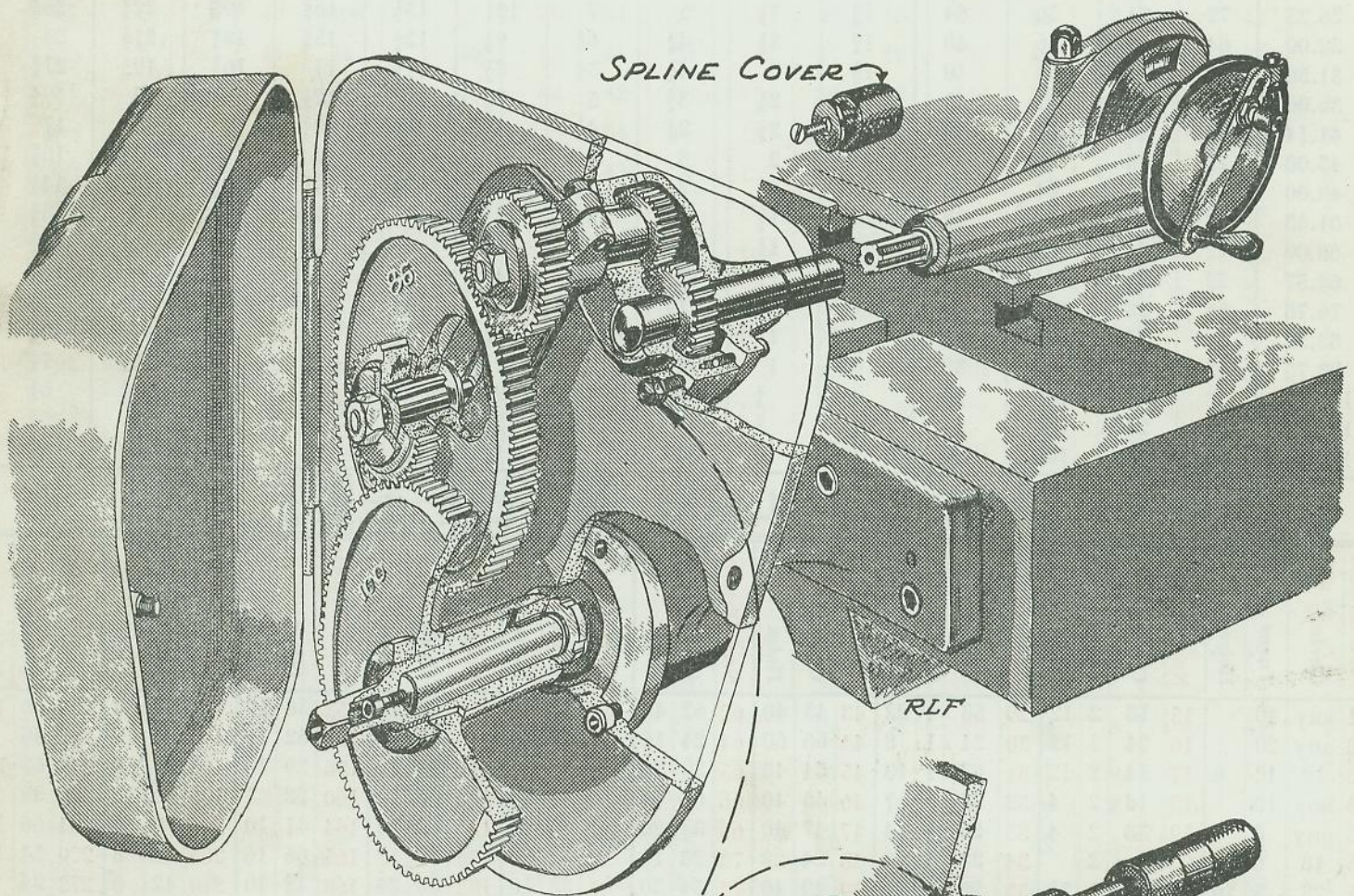
All Van Norman Dividing Heads having plates of 6 inches diameter are interchangeable with four plate series.

No. of Divisions	Circle	Turns	Spaces	No. of Divisions	Circle	Turns	Spaces	No. of Divisions	Circle	Spaces	No. of Divisions	Circle	Spaces	No. of Divisions	Circle	Spaces	No. of Divisions	Circle	Spaces
2	any	20		35	28	1	4	72	54	30	132	66	20	220	66	12	380	38	4
3	24	13	8	36	54	1	6	74	37	20	135	54	16	224	28	5	390	39	4
4	any	10		37	37	1	3	75	30	16	136	34	10	228	57	10	392	49	5
5	any	8		38	38	1	2	76	38	20	140	28	8	230	46	8	400	30	3
6	24	6	16	39	39	1	1	78	39	20	144	54	15	232	58	10	408	51	5
7	28	5	20	40	any	1		80	34	17	145	58	16	235	47	8	420	42	4
8	any	5		41	41		40	82	41	20	148	37	10	236	59	10	424	53	5
9	54	4	24	42	42		40	84	42	20	150	30	8	240	66	11	430	43	4
10	any	4		43	43		40	85	34	16	152	38	10	245	49	8	432	54	5
11	66	3	42	44	66		60	86	43	20	155	62	16	248	62	10	440	66	6
12	24	3	8	45	54		48	88	66	30	156	39	10	250	25	4	456	57	5
13	39	3	3	46	46		40	90	54	24	160	28	7	255	51	8	460	46	4
14	49	2	42	47	47		40	92	46	20	164	41	10	260	39	6	464	58	5
15	24	2	16	48	24		20	94	47	20	165	66	16	264	66	10	470	47	4
16	24	2	12	49	49		40	95	38	16	168	42	10	270	54	8	472	59	5
17	34	2	12	50	25		20	96	24	10	170	34	8	272	34	5	480	24	2
18	54	2	12	51	51		40	98	49	20	172	43	10	280	28	4	490	49	4
19	38	2	4	52	39		30	100	25	10	176	66	15	290	58	8	496	62	5
20	any	2		53	53		40	102	51	20	180	54	12	296	37	5	500	25	2
21	42	1	38	54	54		40	104	39	15	184	46	10	300	30	4	510	51	4
22	66	1	54	55	66		48	105	42	16	185	37	8	304	38	5	520	39	3
23	46	1	34	56	28		20	106	53	20	188	47	10	310	62	8	528	66	5
24	24	1	16	57	57		40	108	54	20	190	38	8	312	39	5	530	53	4
25	25	1	15	58	58		40	110	66	24	192	24	5	320	24	3	540	54	4
26	39	1	21	59	59		40	112	28	10	195	39	8	328	41	5	560	28	2
27	54	1	26	60	42		28	114	57	20	196	49	10	330	66	8	570	57	4
28	42	1	18	62	62		40	115	46	16	200	30	6	336	42	5	580	58	4
29	58	1	22	64	24		15	116	58	20	204	51	10	340	34	4	590	59	4
30	24	1	8	65	39		24	118	59	20	205	41	8	344	43	5	600	30	2
31	62	1	18	66	66		40	120	66	22	210	42	8	360	54	6	620	62	4
32	28	1	7	68	34		20	124	62	20	212	53	10	368	46	5	660	66	4
33	66	1	14	70	28		16	125	25	8	215	43	8	370	37	4	680	34	2
34	34	1	6					130	39	12	216	54	10	376	47	5	720	54	3

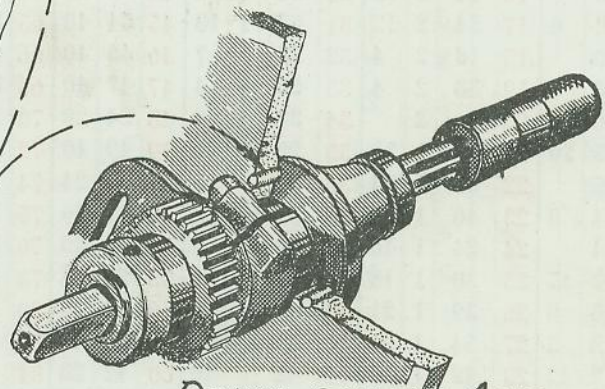


REMOVE ABOVE PARTS

*VERTICAL
DIVIDING HEAD*



*LOOSEN SCREWS HERE
TO ALIGN SHAFT WITH
DIVIDING HEAD*



*DRIVE SHAFT, AND
COUPLING, FOR HORIZ.
DIVIDING HEAD.*