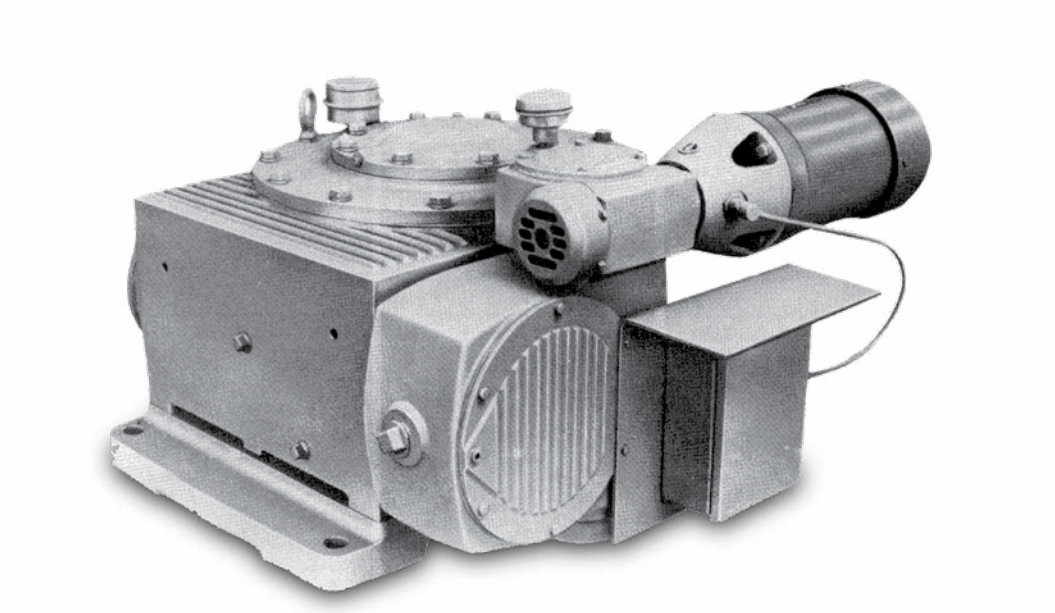
Triple Reduction Worm Gear Speed Reducers

- **Ratios from 5000:1 to 17 5,000:1**
- **HP from 0.09 to 6.25**
- **Output torque to 583,000 in. lbs.**
- **Output RPM down to 0.01 0**
- **Ideal for ultra-slow speed, high torque applications**



Delroyd® DDVM series triple-reduction worm gear speed reducers are available in ratios from 5000:1 to 175,000:1 and center distances from 7 to 20 in. (larger sizes are available on request). Output torque ranges from 33,000 in. lbs. for the 7-in. CD DDVM-70 to 582,900 in. lbs. for the DDVM-200. Mechanical HP input requirements are from 0.09 for the 175,000:1 7-in. CD reducer to 6.246 for the 5000:1 20-in. CD unit.

These reducers are available in any four configurations: horizontal, vertical, shafted and shaft-mounted.

They are ideal for water/wastewater equipment drive applications such as thickeners and clarifiers which require a vertical downshaft. Other available configurations also make DELROYD R triple reduction reducers perfect for use on mixers, elevators, solar panels, astronomical telescopes, indexing tables, hoists, conveyers or other process or materials handling systems where large torques/slow speeds are needed.

These reducers are also available with a helical primary reduction stage and are termed the HDVM series.

Triple Reduction Worm Gear Speed Reducers

7.000 in. center distance (Ratings are for 1750 RPM input speed)

Nominal Ratio	Actual Ratio	Input HP	Output Torque	Effi-ciency	Output RPM
5,000:1	4,925.125:1 (15 1/2 x 15 1/2 x 20 1/2)	0.495	34,300"#	39%	0.355
6,000:1	5,945:1 (9 2/3 x 30 x 20 1/2)	0.458	34,300"#	35%	0.294
8,000:1	7.926.667:1 (9 2/3 x 40 x 20 1/2)	0.415	34,300"#	29%	0.221
10,000:1	9,908.333:1 (9 2/3 x 50 x 20 1/2)	0.356	34,300"#	27%	0.177
12,000:1	12,607.5:1 (20 1/2 x 30 x 20 1/2)	0.280	34,300"#	27%	0.139
15,000:1	15,375:1 (25 x 30 x 20 1/2)	0.259	34,300"#	24%	0.114
20,000:1	20,500:1 (25 x 40 x 20 1/2)	0.233	34,400"#	20%	0.085
25,000:1	24,600:1 (30 x 40 x 20 1/2)	0.204	34,400"#	19%	0.071
30,000:1	30,750:1 (30 x 50 x 20 1/2)	0.183	34,400"#	17%	0.057
35,000:1	35,875:1 (25 x 70 x 20 1/2)	0.148	34,400"#	14%	0.049
40,000:1	41,000:1 (40 x 50 x 20 1/2)	0.155	34,400"#	15%	0.043
50,000:1	51,250:1 (50 x 50 x 20 1/2)	0.143	34,400"#	14%	0.034
60,000:1	61,500:1 (50 x 60 x 20 1/2)	0.120	34,400"#	11%	0.028
75,000:1	73,800:1 (60 x 60 x 20 1/2)	0.108	34,400"#	10%	0.024
125,000:1	120,050:1 (70 x 70 x 24 1/2)	0.111	33,700"#	7%	0.015
175,000:1	168,000:1 (60 x 70 x 40)	0.091	33,000"#	6%	0.010

8.000 in. center distance (Ratings are for 1750 RPM input speed)

Nominal Ratio	Actual Ratio	Input HP	Output Torque	Effi-ciency	Output RPM
5,000:1	4,925.125:1 (15 1/2 x 15 1/2 x 20 1/2)	0.672	50,000"#	42%	0.355
6,000:1	5,945:1 (9 2/3 x 30 x 20 1/2)	0.600	50,100"#	39%	0.294
8,000:1	7.926.667:1 (9 2/3 x 40 x 20 1/2)	0.517	50,100"#	34%	0.221
10,000:1	9,908.333:1 (9 2/3 x 50 x 20 1/2)	0.454	50,200"#	31%	0.177
12,000:1	12,607.5:1 (20 1/2 x 30 x 20 1/2)	0.357	50,200"#	31%	0.139
15,000:1	15,375:1 (25 x 30 x 20 1/2)	0.336	50,200"#	27%	0.114
20,000:1	20,500:1 (25 x 40 x 20 1/2)	0.296	50,200"#	23%	0.085
25,000:1	24,600:1 (30 x 40 x 20 1/2)	0.248	50,200"#	23%	0.071
30,000:1	30,750:1 (30 x 50 x 20 1/2)	0.227	50,300"#	20%	0.057
35,000:1	35,875:1 (25 x 70 x 20 1/2)	0.243	50,300"#	16%	0.049
40,000:1	41,000:1 (40 x 50 x 20 1/2)	0.189	50,300"#	18%	0.043
50,000:1	51,250:1 (50 x 50 x 20 1/2)	0.160	50,300"#	17%	0.034
60,000:1	61,500:1 (50 x 60 x 20 1/2)	0.151	50,300"#	15%	0.028
75,000:1	73,800:1 (60 x 60 x 20 1/2)	0.146	50,300"#	13%	0.024
125,000:1	120,050:1 (70 x 70 x 24 1/2)	0.113	48,700"#	10%	0.015
175,000:1	168,000:1 (60 x 70 x 40)	0.112	47,300"#	7%	0.010

9.000 in. center distance (Ratings are for 1750 RPM input speed)

Nominal Ratio	Actual Ratio	Input HP	Output Torque	Effi-ciency	Output RPM
5,000:1	4,925.125:1 (15 1/2 x 15 1/2 x 20 1/2)	0.872	69,600"#	45%	0.355
6,000:1	5,845.917:1 (9 2/3 x 29 1/2 x 20 1/2)	0.827	69,700"#	40%	0.299
8,000:1	7,926.667:1 (9 2/3 x 40 x 20 1/2)	0.679	69,800"#	36%	0.221
10,000:1	9,908.333:1 (9 2/3 x 50 x 20 1/2)	0.652	69,800"#	31%	0.177
12,000:1	12,397.375:1 (20 1/2 x 29 1/2 x 20 1/2)	0.602	69,900"#	33%	0.141
15,000:1	15,118.75:1 (25 x 29 1/2 x 20 1/2)	0.642	69,900"#	30%	0.116
20,000:1	20,500:1 (25 x 40 x 20 1/2)	0.364	69,900"#	26%	0.085
25,000:1	24,600:1 (30 x 40 x 20 1/2)	0.395	70,000"#	20%	0.071
30,000:1	30,750:1 (30 x 50 x 20 1/2)	0.287	70,000"#	22%	0.057
35,000:1	35,875:1 (25 x 70 x 20 1/2)	0.285	70,000"#	19%	0.049
40,000:1	41,000:1 (40 x 50 x 20 1/2)	0.237	65,500"#	20%	0.043
50,000:1	51,250:1 (50 x 50 x 20 1/2)	0.211	70,000"#	18%	0.034
60,000:1	61,500:1 (50 x 60 x 20 1/2)	0.198	70,000"#	16%	0.028
75,000:1	73,800:1 (60 x 60 x 20 1/2)	0.188	70,000"#	14%	0.024
125,000:1	120,050:1 (70 x 70 x 24 1/2)	0.157	68,000"#	10%	0.015
175,000:1	168,000:1 (60 x 70 x 40)	0.157	66,400"#	7%	0.010

10.000 in. center distance (Ratings are for 1750 RPM input speed)

Nominal Ratio	Actual Ratio	Input HP	Output Torque	Effi-ciency	Output RPM
5,000:1	4,925.125:1 (15 1/2 x 15 1/2 x 20 1/2)	1.116	93,000"#	47%	0.355
6,000:1	5,845.917:1 (9 2/3 x 29 1/2 x 20 1/2)	1.053	93,200"#	42%	0.299
8,000:1	7,926.667:1 (9 2/3 x 40 x 20 1/2)	0.883	93,300"#	37%	0.221
10,000:1	9,908.333:1 (9 2/3 x 50 x 20 1/2)	0.770	93,400"#	34%	0.177
12,000:1	12,397.375:1 (20 1/2 x 29 1/2 x 20 1/2)	0.616	93,400"#	34%	0.141
15,000:1	15,118.75:1 (25 x 29 1/2 x 20 1/2)	0.537	93,500"#	32%	0.116
20,000:1	20,500:1 (25 x 40 x 20 1/2)	0.452	93,500"#	28%	0.085
25,000:1	24,600:1 (30 x 40 x 20 1/2)	0.391	93,600"#	27%	0.071
30,000:1	30,750:1 (30 x 50 x 20 1/2)	0.367	93,600"#	23%	0.057
35,000:1	35,875:1 (25 x 70 x 20 1/2)	0.362	93,600"#	20%	0.049
40,000:1	41,000:1 (40 x 50 x 20 1/2)	0.302	93,600"#	21%	0.043
50,000:1	51,250:1 (50 x 50 x 20 1/2)	0.267	93,600"#	19%	0.034
60,000:1	61,500:1 (50 x 60 x 20 1/2)	0.249	93,600"#	17%	0.028
75,000:1	73,800:1 (60 x 60 x 20 1/2)	0.220	93,600"#	16%	0.024
125,000:1	120,050:1 (70 x 70 x 24 1/2)	0.175	91,000"#	12%	0.015
175,000:1	168,000:1 (60 x 70 x 40)	0.164	89,200"#	9%	0.010

Maximum momentary starting load must not exceed 300% of speed reducer rating shown above. Other ratio combinations are available upon request.

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12.000 in. center distance (Ratings are for 1750 RPM input speed)

Nominal Ratio	Actual Ratio	Input HP	Output Torque	Effi-ciency	Output RPM
5,000:1	5,063.333:1 (5 1/6 x 40 x 24 1/2)	1.916	150,200"#	43%	0.346
6,000:1	5,802.417:1 (9 2/3 x 24 1/2 x 24 1/2)	1.600	150,400"#	45%	0.302
8,000:1	7,784.875:1 (15 1/2 x 20 1/2 x 24 1/2)	1.280	150,700"#	42%	0.225
10,000:1	10,296.125:1 (20 1/2 x 20 1/2 x 24 1/2)	1.044	150,900"#	39%	0.170
12,000:1	12,305.125:1 (20 1/2 x 24 1/2 x 24 1/2)	0.897	151,000"#	38%	0.142
15,000:1	14,706.125:1 (24 1/2 x 24 1/2 x 24 1/2)	0.947	151,000"#	36%	0.119
20,000:1	20,090:1 (20 1/2 x 40 x 24 1/2)	0.921	151,200"#	31%	0.087
25,000:1	25,112.5:1 (20 1/2 x 50 x 24 1/2)	0.774	151,300"#	27%	0.070
30,000:1	30,012.5:1 (24 1/2 x 50 x 24 1/2)	0.609	151,400"#	23%	0.058
35,000:1	36,015:1 (24 1/2 x 60 x 24 1/2)	0.486	151,400"#	24%	0.049
40,000:1	39,200:1 (40 x 40 x 24 1/2)	0.447	151,400"#	24%	0.045
50,000:1	49,000:1 (40 x 50 x 24 1/2)	0.390	151,500"#	22%	0.036
60,000:1	61,250:1 (50 x 50 x 24 1/2)	0.343	151,500"#	20%	0.029
75,000:1	73,500:1 (50 x 60 x 24 1/2)	0.318	151,500"#	18%	0.024
125,000:1	120,050:1 (70 x 70 x 24 1/2)	0.250	151,600"#	14%	0.015
175,000:1	168,000:1 (60 x 70 x 40	0.223	148,700"#	11%	0.010

14.000 in. center distance (Ratings are for 1750 RPM input speed)

Nominal Ratio	Actual Ratio	Input HP	Output Torque	Effi-ciency	Output RPM
5,000:1	4,925.125:1 (15 1/2 x 15 1/2 x 20 1/2)	2.726	223.700"#	45%	0.346
6,000:1	5,945:1 (9 2/3 x 30 x 20 1/2)	2.280	224,000"#	47%	0.302
8,000:1	7.926.667:1 (9 2/3 x 40 x 20 1/2)	1.820	224,500"#	44%	0.225
10,000:1	9,908.333:1 (9 2/3 x 50 x 20 1/2)	1.479	224,800"#	41%	0.170
12,000:1	12,607.5:1 (20 1/2 x 30 x 20 1/2)	1.301	225,000"#	39%	0.142
15,000:1	15,375:1 (25 x 30 x 20 1/2)	1.372	225,000"#	37%	0.119
20,000:1	20,500:1 (25 x 40 x 20 1/2)	1.329	225,200"#	32%	0.087
25,000:1	24,600:1 (30 x 40 x 2 1/2)	1.112	225.400"#	28%	0.070
30,000:1	30,750:1 (30 x 50 x 20 1/2)	0.773	225,600"#	27%	0.058
35,000:1	35,875:1 (25 x 70 x 20 1/2)	0.696	225,600"#	25%	0.049
40,000:1	41,000:1 (40 x 50 x 20 1/2)	0.615	225,600"#	26%	0.045
50,000:1	51,250:1 (50 x 50 x 20 1/2)	0.556	225,700"#	23%	0.036
60,000:1	61,500:1 (50 x 60 x 20 1/2)	0.487	225,800"#	21%	0.029
75,000:1	73,800:1 (60 x 60 x 20 1/2)	0.426	225,800"#	20%	0.024
125,000:1	120,050:1 (70 x 70 x 24)	0.348	225,800"#	15%	0.015
175,000:1	168,000:1 (60 x 70 x 40)	0.295	211,500"#	12%	0.011

17.000 in. center distance (Ratings are for 1750 RPM input speed)

Nominal Ratio	Actual Ratio	Input HP	Output Torque	Effi-ciency	Output RPM
5,000:1	5.063.333:1 (5 1/6 x 40 x 24 1/2)	4.431	379,800"#	47%	0.346
6,000:1	5,802.417:1 (9 2/3 x 24 1/2 x 24 1/2)	3.873	380,400"#	47%	0.302
8,000:1	7.784.875:1 (15 1/2 x 20 1/2 x 24 1/2)	3.023	381,400"#	45%	0.225
10,000:1	10,296.125:1 (20 1/2 x 20 1/2 x 24 1/2)	2.454	382,200"#	42%	0.170
12,000:1	12,305.125:1 (20 1/2 x 24 1/2 x 24 1/2)	2.157	382,600"#	40%	0.142
15,000:1	14,706.125:1 (24 1/2 x 24 1/2 x 24 1/2)	2.272	382,600"#	38%	0.119
20,000:1	20,090:1 (20 1/2 x 40 x 24 1/2)	2.191	382,900"#	33%	0.087
25,000:1	25,112.5:1 (20 1/2 x 50 x 24 1/2)	1.827	383,300"#	29%	0.070
30,000:1	30,012.5:1 (24 1/2 x 50 x 24 1/2)	1.315	383,700"#	27%	0.058
35,000:1	36,015:1 (24 1/2 x 60 x 24 1/2)	1.138	383,800"#	26%	0.049
40,000:1	39,200:1 (40 x 40 x 24 1/2)	1.046	383,900"#	26%	0.045
50,000:1	49,000:1 (40 x 50 x 24 1/2)	0.907	384,000"#	24%	0.036
60,000:1	61,250:1 (50 x 50 x 24 1/2)	0.791	384,100"#	22%	0.029
75,000:1	73,500:1 (50 x 60 x 24 1/2)	0.691	384,200"#	21%	0.024
125,000:1	120,050:1 (70 x 70 x 24 1/2)	0.556	384,300"#	16%	0.015
175,000:1	165,900:1 (60 x 70 x 39 1/2)	0.463	359,900"#	13%	0.011

20.000 in. center distance (Ratings are for 1750 RPM input speed)

Nominal Ratio	Actual Ratio	Input HP	Output Torque	Effi-ciency	Output RPM
5,000:1	5.063.333:1 (5 1/6 x 40 x 24 1/2)	6.246	558,100"#	49%	0.346
6,000:1	5,802.417:1 (9 2/3 x 24 1/2 x 24 1/2)	5.350	559,000"#	50%	0.302
8,000:1	7.784.875:1 (15 1/2 x 20 1/2 x 24 1/2)	4.255	560,700"#	47%	0.225
10,000:1	10,296.125:1 (20 1/2 x 20 1/2 x 24 1/2)	3.444	561,900"#	44%	0.170
12,000:1	12,305.125:1 (20 1/2 x 24 1/2 x 24 1/2)	3.173	562,500"#	42%	0.142
15,000:1	14,706.125:1 (24 1/2 x 24 1/2 x 24 1/2)	3.037	563,000"#	40%	0.119
20,000:1	20,090:1 (20 1/2 x 40 x 24 1/2)	2. 513	563,700"#	35%	0.087
25,000:1	25,112.5:1 (20 1/2 x 50 x 24 1/2)	2.012	564,000"#	31%	0.070
30,000:1	30,012.5:1 (24 1/2 x 50 x 24 1/2)	1.800	564,300"#	29%	0.058
35,000:1	36,015:1 (24 1/2 x 60 x 24 1/2)	1.612	564,500"#	27%	0.049
40,000:1	39,200:1 (40 x 40 x 24 1/2)	1.428	564,600"#	28%	0.045
50,000:1	49,000:1 (40 x 50 x 24 1/2)	1.280	564,800"#	25%	0.036
60,000:1	61,250:1 (50 x 50 x 24 1/2)	1.114	565,000"#	23%	0.029
75,000:1	73,500:1 (50 x 60 x 24 1/2)	1.017	565,100"#	21%	0.024
125,000:1	120,050:1 (70 x 70 x 24 1/2)	0.817	565,300"#	16%	0.015
175,000:1	165,900:1 (60 x 70 x 39 1/2)	0.750	582,900"#	13%	0.011

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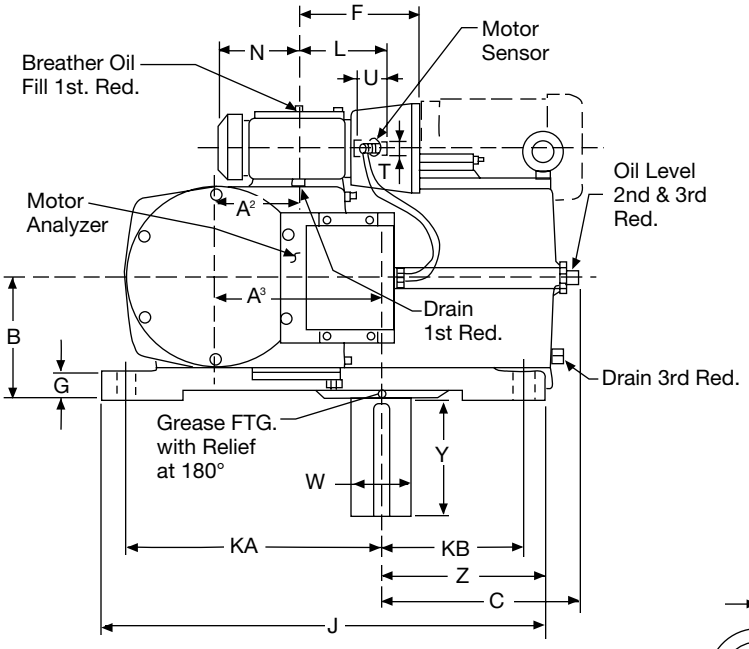
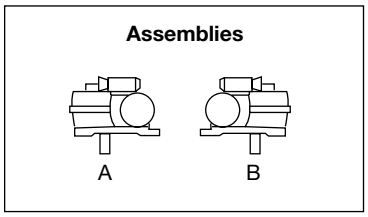
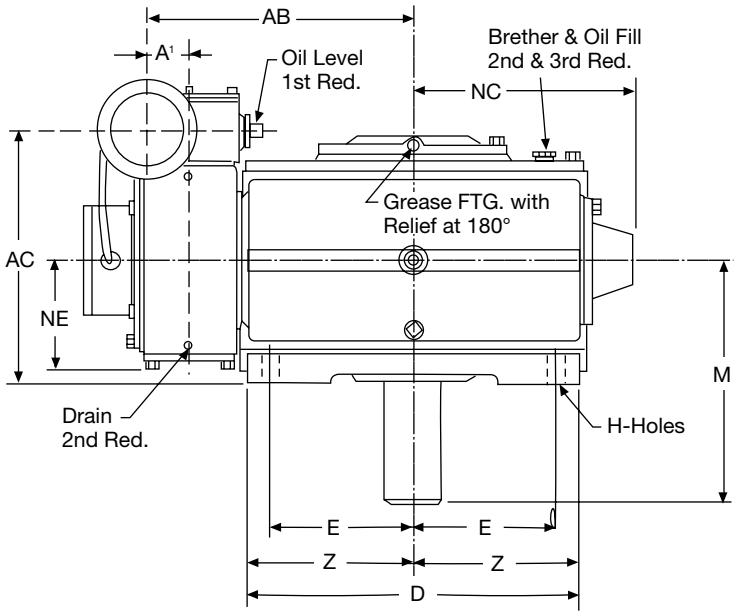
Triple Reduction Worm Gear Speed Reducers







A drywell is standard for vertical assemblies sizes 70-200 only.

Unit Size	WT. LBS.	A3	A2	A1	AB	AC	B	C	D	E	F	G	H	J	KA	KB	L	M	N	NC	NE
DDVM70	585	7	3 1/2	2	12 3/8	13 1/8	6 1/2	9 1/4	14 5/8	6 1/4	7 3/8	1 3/8	15/16	20 1/8	11 3/4	6 1/4	4 1/2	11 1/2	6 9/16	10 3/16	5 1/16
DDVM80	725	8	4	2	13 5/8	14	6 5/8	10 1/8	16 1/2	7	7 3/8	1 1/2	1 1/16	22 1/4	12 3/4	7	4 1/2	12 1/8	8	11 9/16	5 3/4
DDVM90	930	9	5	2 1/2	15 5/8	15 5/8	7 3/4	10 1/2	18 1/2	7 7/8	7 7/8	1 5/8	1 3/16	25	14 3/8	7 7/8	5 3/8	14 1/4	8 9/16	13 3/8	6 7/16
DDVM100	1140	10	5	2 1/2	16 3/4	16 5/8	8 3/4	11 5/8	20 3/4	9	7 7/8	1 3/4	1 3/16	27 1/4	15 1/2	9	5 3/8	16	8 9/16	14 3/8	8 3/16
DDVM120	1830	12	6	3	19 3/8	18 1/2	9	13 5/8	24 1/4	10 3/8	8 13/16	2 1/8	1 5/16	32 3/8	18 1/2	10 3/8	6 1/8	17 1/2	10 1/16	16 1/8	7 7/8
DDVM140	2580	14	6	3	22 3/8	19 3/4	10 1/4	15 3/8	27 1/2	12	8 13/16	2 1/4	1 5/16	37 1/2	22	12	6 1/8	19 1/4	10 1/16	16	9 9/16
DDVM170	4320	17	8	4	26 3/8	23 1/8	11 1/2	18 1/2	33	14 1/2	10 1/4	2 1/2	1 9/16	44 3/4	26 1/4	14 1/2	7 3/4	21 1/2	11 3/4	18 15/16	9 1/2
DDVM200	5880	20	9	5	30 3/8	25 7/8	12 3/4	21 7/8	39	17	11	2 3/4	1 9/16	53	31	17	8 3/4	23 3/4	13 13/16	21 3/16	10 1/2

Unit Size	T▲	U	Keyway	W▲	Y	¥	Z
DDVM70	1	2	1/4 x 1/8 x 1 15/16	2 1/2	5	5/8 x 5/16 x 4 15/16	7 5/16
DDVM80	1 1/8	2 1/16	1/4 x 1/8 x 2	2 3/4	5 1/2	5/8 x 5/16 x 5 7/16	8 1/4
DDVM90	1 3/8	2 5/16	5/16 x 5/32 x 2 1/4	3 1/4	6 1/2	3/4 x 3/8 x 6 3/8	9 1/4
DDVM100	1 3/8	2 5/16	5/16 x 5/32 x 2 1/4	3 5/8	7 1/4	7/8 x 7/16 x 7 3/16	10 3/8
DDVM120	1 1/2	2 11/16	3/8 x 3/16 x 2 5/8	4 1/4	8 1/2	1 x 1/2 x 8 3/8	12 1/8
DDVM140	1 1/2	2 11/16	3/8 x 3/16 x 2 5/8	5	9	1 1/4 x 5/8 x 8 5/8	13 3/4
DDVM170	1 7/8	3 1/8	1/2 x 1/4 x 3 1/16	5 3/4	10	1 1/2 x 3/4 x 9 3/4	16 1/2
DDVM200	2 1/8	3 15/16	1/2 x 1/4 x 3 7/8	6 1/2	11	1 1/2 x 3/4 x 10 1/2	19 1/2

Larger sizes available on request.

Available in shafted unit as shown or hollow output units.