



Tonka

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## Transmission

Gear	Diameter (inch)	Number of teeth	Circular Pitch
One	5	28	0.5610
Two	7	38	0.5787
Three	9	48	0.5890

Table 1: Front gear assembly specifications

Gear	Diameter (inch)	Number of teeth	Circular Pitch
One	4	28	0.4488
Two	$3\frac{1}{2}$	24	0.4581
Three	$3\frac{1}{4}$	21	0.4862
Four	3	18	0.5236
Five	$2\frac{3}{4}$	16	0.5400
Six	$2\frac{1}{4}$	14	0.5049

Table 2: Rear gear assembly specifications

Gear	Diameter (inch)	Number of teeth	Circular Pitch
Upper	$1\frac{3}{4}$	11	0.4998
Lower	$1\frac{3}{4}$	11	0.4988

Table 3: Derailleur gear assembly specifications

Front gear	Rear gear	Gear Ratio
One	One	1.0000:1
One	Two	1.1667:1
One	Three	1.3333:1
One	Four	1.5556:1
One	Five	1.7500:1
One	Six	2.0000:1
Two	One	1.3571:1
Two	Two	1.5833:1
Two	Three	1.8095:1
Two	Four	2.1111:1
Two	Five	2.3750:1
Two	Six	2.7143:1
Three	One	1.7143:1
Three	Two	2.0000:1
Three	Three	2.2857:1
Three	Four	2.6667:1
Three	Five	3.0000:1
Three	Six	3.4286:1

Table 4: All possible gear ratios

**Linkages**

**Bearings**