

Selection of Roller Chain

It is important to select the most suitable roller chains and sprockets for the job by careful study of power transmission requirements.

The following basic factors should be considered when selecting roller chains for transmission needs through there may be other factors.

ATMOSPHERIC CONSIDERATION

The input power ratings appearing on the pages of 80 to 84, have been worked out under the following conditions.

- 1) To be driven in normal atmosphere of -10°F to 60°C free from ill effect of abrasive dust, corrosive gas, high humidity etc.
- 2) Sprockets should be aligned and mounted on parallel horizontal shafts.
- 3) Recommended method of lubrication and recommended kind of lubricant should be used.
- 4) Should be driven at even load or small load variations.

Power rating of multiple strand chain is not simply calculable by multiplying the power rating of one strand by the number of strand because of uneven load distribution onto each strand. So, multiple strand factor should be used for expected service life.

A service life of 15,000 hrs, can be expected when chain length is 100 pitches and the above conditions are met.

POINT IN SELECTION ROLLER CHAIN AND SPROCKET

The following factors must be taken into consideration in selecting proper chain drive, depending on chain speed-normal or low speed. Also correction factors should be used, fully grasping the conditions of use.

- | | |
|--|---|
| a) Driven machine | e) RPM and diameter of high speed shaft[n1:rpm] |
| b) Type of load: smooth light or heavy shock | f) RPM and diameter of low speed shaft[n2:rpm] |
| c) Source of power | g) Center distance of shaft [m] |
| d) kW to be transmitted [kW0:kW] | h) Chain-driving speed [S:m/min] |

SELECTION PROCEDURE ACCORDING TO CHAIN SPEED

IN CASE OF NORMAL SPEED

$S=50\sim 250\text{m/min}$

To obtain corrected power kW_1 multiply kW_0 by corrected factor f_1 applied according to condition of use

$$kW_1 = kW_0 \cdot f_1 \\ = kW_0 \cdot f_1 \cdot f_2$$

To obtain chain and high-speed sprocket teeth N_1 use roller chain quick selection chart and power rating chart according to RPM of high speed shaft and corrected power kW_1

N_1

Determine low speed sprocket teeth N_2 from speed ratio R

$$R = n_1/n_2 \\ N_2 = R \cdot N_1$$

See if each sprocket shaft diameter and mounting space satisfy specifications of machine

* Check

Make special sprocket

Obtain corrected power kW_1 of single strand by referring to multiple strand factor f_2

OK

Finally determined

Economical sprockets for general industrial use are recommended except when special sprockets are made due to unavoidable circumstances.

IN CASE OF LOW SPEED

$S=\text{Less than } 50\text{m/min.}$

Divided into two cases depending on chain driving conditions

- 1) For low speed drive with few stops and starts, make the chain selection in a way to satisfy the following formula:

$$T \times f_1 \times f_3 \leq \text{Max. allowable chain load.}$$

- 2) For low speed drive with frequent stops and starts.

$$T \times f_1 \times f_3 \times f_4 \leq \text{Ave. ultimate strength.}$$

Select the chain by substituting the values of chain speed and max working load into formulas (1)&(2), after chain selected tentatively in the general way.

$N_1[-] = \text{Number of teeth on small sprocket.}$

$N_2[-] = \text{Number of teeth on large sprocket.}$

$P [\text{mm}] = \text{Chain pitch}$

$S [\text{m/min}] = \text{Chain speed}$

$$= N_1 \cdot P \cdot$$

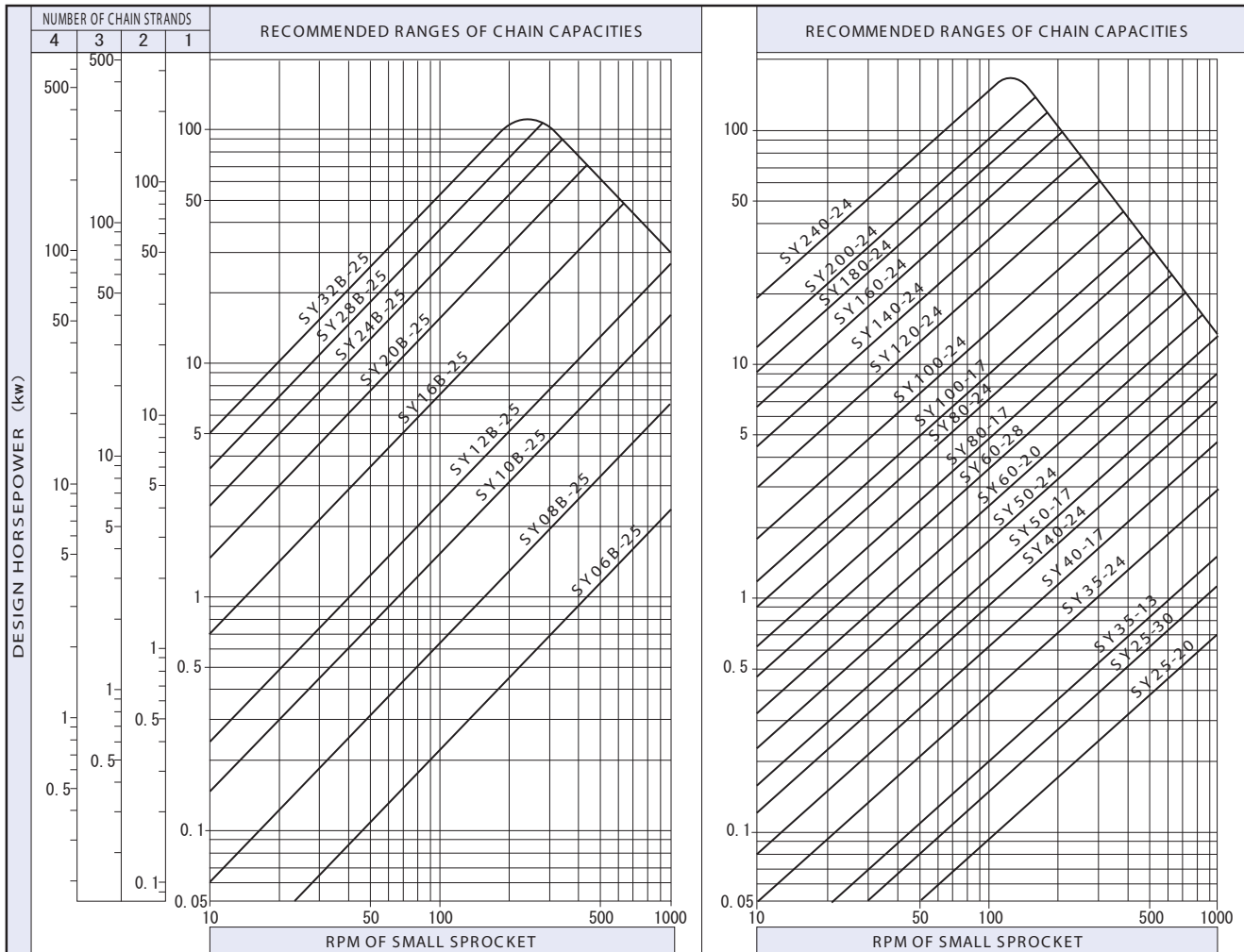
$n_1/1000$

$$T [\text{kN}] = \text{Max. working load.} \\ = 60 \times kW_0 / S$$

f_2 : MULTI-STRAND FACTOR

Number of roller chain strands	f_2
2	1.7
3	2.5
4	3.3
5	3.9
6	4.6
8	6.2
10	7.5

Roller Chain Quick Selection Chart



CONCISE SELECTION DATA

SY Chain No.	SY Standard(ANSI)		Each Series				
	Max. Allowable Load	Ave. Ultimate Strength	Ave. Ultimate Strength(kN)				
			E	U	H	HE	HU
35	2.48	10.8					
40	4.17	19.1					
50	7.22	31.9					
60	10.7	43.1	47.1		54.9	53.9	
80	19.1	78.5	79.4	84.3	60.2	93.2	98.1
100	29.4	118	119	127	137	142	145
120	39.5	167	174	186	186	191	196
140	52.3	216	227	245	241	252	255
160	69.0	275	294	314	306	319	324
180	79.0	353		412	373		
200	93.0	451		490	520		
240	129.0	677		726	726		

f1: SERVICE FACTOR

Driven Load Condition	Interval Combustion Engine		Motor or Turbine
	Hydraulic Drive	Mechanical Drive	
Uniform Smooth	1.1	1.3	1.0
Moderate Shock	1.5	1.7	1.4
Heavy Shock	1.9	2.1	1.8

f3: SPEED COEFFICIENT f4: SAFETY FACTOR

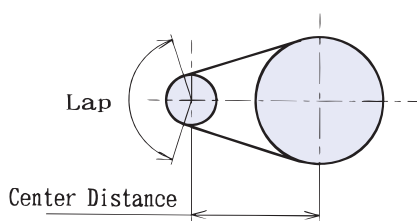
Chain Speed	f3	Chain Speed	f4
15m/min.	1.0	25m/min.	7 ≤
15—30	1.2	25—50	8 ≤
30—50	1.4		

INSTALLATION AND ARRANGEMENT

To design excellent chain drives, chains and sprockets should be properly arranged and installed.

CENTER DISTANCE AND CHAIN LAP

Chain lap on the small sprocket must be at least 120 degrees.



Sprockets can be spaced at any distance as long as their teeth do not touch. Optimum distance is 30 to 50 times of pitch of the chain used except when there is a pulsating load. In case of pulsating drive, distance of less than 20 chain pitches is adequate.

TENSION AND SLACK

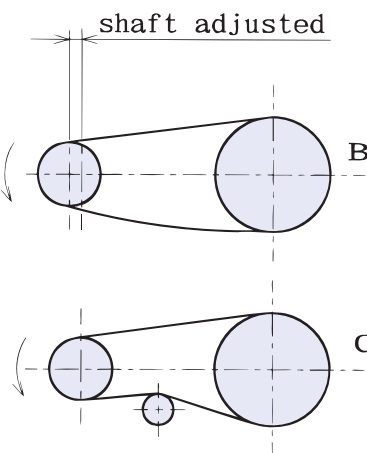
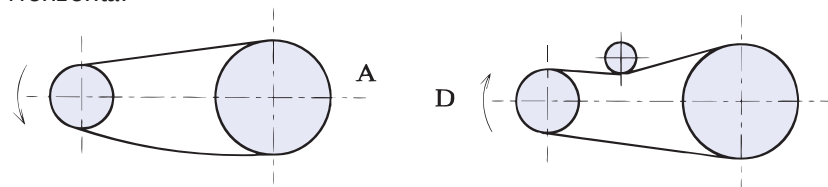
Proper amount of chain tension should be maintained. Inadequate tension will step up wear, while excessive sag will result in pulsating impact, stranding and breakage.

Adequate slack is 4 % of the span for normal drives. In the following cases, the slack should be about 2 % of the span.

- 1) Vertical position or near to vertical position.
- 2) Center distance exceeding 1 meter.
- 3) Heavy load application with frequent starts and stops.
- 4) Application with sudden reverse motions.

DRIVE POSITIONS

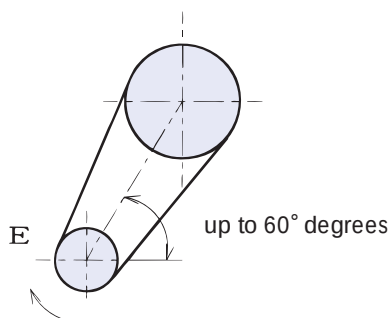
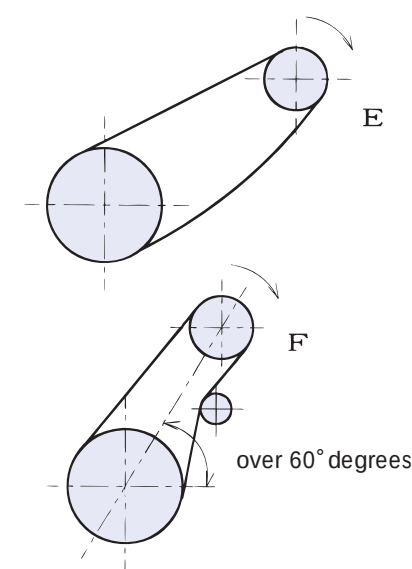
Horizontal



Horizontal arrangements

- A. Generally roller chain slack is on the lower side.
- B. When the center distance is short chain slack is adjusted by expanding it.
- C. When the center distance is long, chain slack is adjusted by installing a tightener.
- D. When chain slacks on the upper side, adjust it by a tightener.

Inclined and Vertical



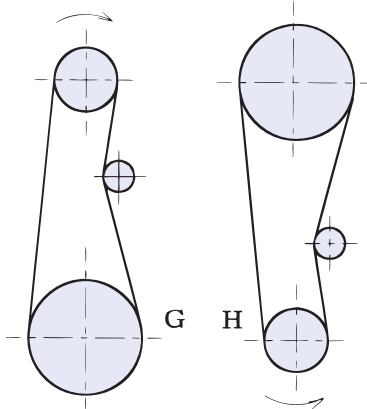
Inclined arrangements:

- E. Inclined operation should be within 60°, possible.
- F. Too much slack will cause chain to ride up on the lower sprocket or come off. It should be adjusted by a tightener.

Vertical arrangements:

G, H

Excessive chain sag should be automatically adjusted by a tightener. It is mandatory when the driving shaft (small sprocket) is placed on the bottom side.



LUBRICATION

Proper lubrication of roller chains is a very important factor in getting their best possible performance and longer lifetime. No matter how well a transmission system is designed, if it is not properly lubricated, its service life will be shortened.

Abrasion between the pin and bushing causes roller chains to stretch. Therefore, these parts should be well lubricated.

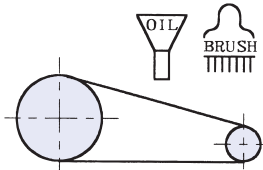
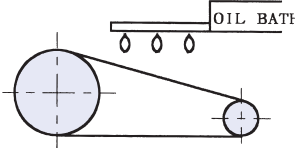
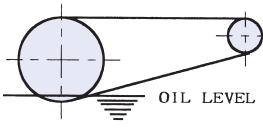
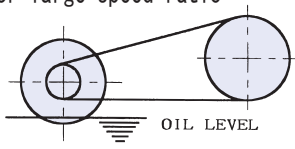
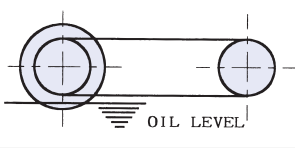
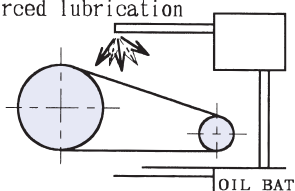
The gap between the pin-link plate and roller-link plate on the slack side of the chain should be filled with lubricant.

The oil forms a film which minimizes wear of the pin and bushing thus increasing the chain service life.

It also reduces noises and cools down the chain running at high speed.

POINTS OF LUBRICATION

- 1) Fill and change oil periodically.
- 2) Generally, heavy oil and grease are not suitable as a lubricant.
- 3) Avoid mix of oil with another kind or other maker's.
- 4) Adequate lubrication quantity is also essential for a chain's longer service life.

Type	Method	Amount
A	Manual lubrication 	●Periodically to keep chain joints from drying
	Dripping lubrication 	●Usually 4-20 drops of oil per minute. ●Excess oil should be reserved in a simple case.
B	Oil bath lubrication 	●Effective at medium and low speeds. ●To be dipped 6~12 mm.
	Lubrication by slinger disc For large speed ratio 	●Effective at rather high speeds. ●To be dipped 12~25mm at about 200m/min. circumferential speed of slinger disc.
	Lubrication by slinger disc For small speed ratio 	●Case should be cleaned to remove impurities.
C	Forced lubrication 	●Effective for heavy load, high power and high speed. ●Ab 4ltr/min. should be filled without oil shortage or heating up. ●Closed circulating lubrication system needs a clean tank or case.

SY Chain No.	Temperature[°C]							
	-10	0	40	50	-10	0	40	50
	0	40	50	60	0	40	50	60
Lubrication Type	TYPE A·B				TYPE C			
~SY50	SAE10	SAE20	SAE30	SAE50	SAE10	SAE20	SAE30	SAE40
SY60~SY80	20	30	40	50	10	20	30	40
SY100	20	30	40	50	20	30	40	50
SY120~	30	40	50	50	20	30	40	50



WARNING

Serious injury or property damage could result if the chain breaks due to incorrect selection of chain, chain installed improperly, or chain run without the safe-guard. Please read the instruction manual thoroughly prior to any attempt at installation.

Ultimate Tensile Strength

This is the point at which, the roller chain will break with a load applied one time. Note that the Ultimate Tensile Strength is not the allowable working load. Safety factor must be considered when selecting the roller chain. This catalog shows most of the Maximum Allowable Load for your convenience. As a rule of thumb, a roller chain should never be loaded above 50% of Ultimate Tensile Strength for even one cycle. For a multiple-strand roller chain, consult the multiple-strand factor chart.

Guarding

The chain can break in normal service due to the effect of wear, fatigue, or unexpected overloads. Therefore, a roller chain drive should have adequate guarding to prevent personal injury or property damage.

Connecting Link

A traditional slip-fit connecting link is for ease of assembly. However, this type of connecting link is 20% lower in fatigue strength than the chain itself. SY new standard con-

necting link with specially designed slip-fit cover plate provides almost the same strength as chain itself.

Offset Link

Standard One-Pitch Offset Link is handy to work with an odd number of chain links. The pin and two plates are slip fit. However, it is at least 35% lower in fatigue strength than the chain itself. It is not recommended to use in the application where frequent, impact loads at high speed driving are required.

Two-pitch offset link is available for that application. The Two-Pitch offset link consists of an offset link and a roller link connected with a riveted pin.

Cotter Pin, Spring Clip

Maintain 60-degree angle for the prongs of the cotter pin. Do not re-use the cotter pin. Do not use the cotter pin commercially available in the market, as it is different from our custom-made pins. Be sure to insert the spring clip properly in the groove of the pin. Install the spring clip's solid end side pointing to the direction chain runs.

Rust Corrosion

"Generally, the chain is lubricated for its flexibility and rust prevention. However, lack of maintenance and/or" "a corrosive environment could cause the chain to rust. If the chain is corroded, its capacity is dramatically" reduced and the link plates could break even with the slightest load applied.

CAUTION

- 1) Always lock out machinery power switch before attempting removal , installation, or any servicing of chain
- 2) Wear eye and face protection when grinding, driving, or disassembling pins.
- 3) Always wear gloves ,protective clothing and safety shoes with steel toe when working with chains.
- 4) Make absolutely sure that chain is properly supported to prevent uncontrolled movement of chain and parts.
- 5) Chain pressers and breaking tools are recommended to be in good working order and to be used according to instructions.
- 6) Avoid plating or welding assembled chains or components.
- 7) Never repair damaged chains by replacing only the component parts.
- 8) Damaged chain may be yielded and therefore should not be reworked.

Maintenance Check List

Inspect on regularly scheduled basis for worn ,damaged or broken parts ,possible interference by other systems components, and proper lubrication.

Normal maintenance procedures can prevent most of the conditions described below.

Carefully inspect roller chain drives on the same schedule as associated equipment.

Sprocket Misalignment

Wear on the sides of sprocket teeth generally indicates improper installation of sprockets and/or shafts. If shafts are out of parallel or not in the same plane, non-symmetrical wear will appear on sprockets or chain rollers.

After proper alignment is made retighten set screws in sprocket hubs.

Chain wear and Elongation

Normal wear will cause some increase in chain length. However, if a sudden increase in elongation occurs , look for severe wear on the tips of sprocket teeth. This may be caused by any of the following : excessive loading or shock loading , displacement and/or wear in bearings, displacement of take-up ,or under-designed drives.

Excessive elongation may be an indication that chain and/or sprockets should be replaced.

Before replacing chain or sprockets ,recalculate initial drive design. Check chain tension if there is too much accumulated slack in the drive.

Broken Chain Parts

Generally caused by an overloaded drive ; extreme misalignment ; excessive elongation causing chain to jump sprocket teeth; heavy shock; improper drive design geometry; foreign objects.

Recalculate initial drive design and make necessary correction .Inspect sprockets and shafts for proper alignment or looseness.

Link Plate Wear

Wear on inside of the link plates and on one side of sprocket teeth may be caused by a misalignment misalignment of sprockets.

Realign sprockets and shafts. Inspect chain carefully ,readjust chain properly or replace.

Removing Chain

Turn the drive until a connecting link is fully engaged with one of the sprockets so as to relieve the tension on the connecting pin.

The connecting link may then be removed.

Excessive Noise

Can be caused by broken links and chain rollers, extreme misalignment, elongation, chain jumping sprocket teeth , loose sprockets, broken teeth ,accumulation of dirt packed into the chain or sprockets teeth, interference by foreign objects, contacting a fixed object

Check for worn broken or missing parts. Check alignment of shafts and/or sprockets.

Lubrication

On slow speed drives, where manual lubrication is used, if drip lubrication is used check for adequate oil flow and proper application to the chain.

With bath or pump lubrication, check oil level and add oil if needed. Check oil for contamination and change oil if needed. If pump lubrication is used, check each orifice to be sure if it is clear and is directing oil onto the chain properly.

Recommended Replacement

Measure the chain wear elongation and if elongation exceeds functional limits or is greater than 1.5% (0.36 inch in one foot) replace the entire chain.

Do not connect a new section of chain to a worn chain because it may run roughly and damage the drive. Do not continue to run a chain worn beyond 3% elongation because the chain will not engage the sprockets properly and it may damage the sprockets.

Cutting Riveted Chain

The two pins of a pin link must be driven out of the link plate. Strike the pins alternately to avoid distortion of the roller link plates as well as the plates of the adjacent links.

Chain cutting tools can also be used. Follow their instruction carefully.

Inserting New Links

Insert only on new roller chain. Pitch variance between a new link and an old link, especially one which is elongated due to wear, will cause shock when the new link engages the sprockets.

Installing New Chain

Chain and/or related parts should be visually inspected for damage, which could have occurred during shipping prior to installation.

Never install new chain on worn sprockets as this will permanently damage chain. With new chain and sprockets installed , check for proper and sprockets installed, check for proper tension and alignment.

MAXIMUM KILOWATT RATING OF 35

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket																			
	50	100	300	500	700	900	1200	1500	1800	2100	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000
	Lubrication System																			
	A										B									
9	0.08	0.16	0.42	0.67	0.91	1.14	1.47	1.80	2.12	2.43	2.13	1.62	1.29	1.05	0.88	0.75	0.65	0.57	0.51	0.46
10	0.09	0.18	0.47	0.75	1.01	1.27	1.65	2.01	2.37	2.73	2.50	1.90	1.51	1.23	1.03	0.88	0.77	0.67	0.60	0.53
11	0.10	0.20	0.52	0.83	1.12	1.41	1.83	2.23	2.63	3.02	2.88	2.19	1.74	1.42	1.19	1.02	0.88	0.77	0.69	0.61
12	0.11	0.21	0.58	0.91	1.24	1.55	2.01	2.45	2.89	3.32	3.28	2.50	1.98	1.62	1.36	1.16	1.01	0.88	0.78	0.70
13	0.13	0.23	0.63	0.99	1.35	1.69	2.19	2.67	3.15	3.62	3.70	2.82	2.23	1.83	1.53	1.31	1.13	1.00	0.88	0.79
14	0.14	0.25	0.68	1.08	1.46	1.83	2.37	2.90	3.41	3.92	4.14	3.15	2.50	2.04	1.71	1.46	1.27	1.11	0.99	0.88
15	0.15	0.27	0.73	1.16	1.57	1.97	2.55	3.12	3.68	4.23	4.59	3.49	2.77	2.27	1.90	1.62	1.41	1.23	1.09	0.98
16	0.16	0.29	0.79	1.25	1.69	2.11	2.74	3.35	3.94	4.53	5.05	3.84	3.05	2.50	2.09	1.79	1.55	1.36	1.21	1.08
17	0.17	0.31	0.84	1.33	1.80	2.26	2.92	3.57	4.21	4.84	5.54	4.21	3.34	2.73	2.29	1.96	1.70	1.49	1.32	1.18
18	0.18	0.33	0.89	1.41	1.91	2.40	3.11	3.80	4.48	5.14	6.02	4.59	3.64	2.98	2.50	2.13	1.85	1.62	1.44	1.29
19	0.19	0.35	0.95	1.50	2.03	2.54	3.30	4.03	4.75	5.45	6.38	4.98	3.95	3.23	2.71	2.31	2.00	1.76	1.56	1.40
20	0.20	0.37	1.00	1.58	2.14	2.69	3.48	4.26	5.02	5.76	6.74	5.37	4.26	3.49	2.92	2.50	2.16	1.90	1.68	1.51
21	0.21	0.39	1.05	1.67	2.26	2.83	3.67	4.49	5.29	6.08	7.11	5.78	4.59	3.75	3.15	2.69	2.33	2.04	1.81	1.62
22	0.22	0.41	1.11	1.76	2.38	2.98	3.86	4.72	5.56	6.39	7.48	6.20	4.92	4.03	3.37	2.88	2.50	2.19	1.94	1.74
23	0.23	0.43	1.16	1.84	2.49	3.13	4.05	4.95	5.84	6.70	7.84	6.63	5.26	4.30	3.61	3.08	2.67	2.34	2.08	1.86
24	0.24	0.45	1.22	1.93	2.61	3.27	4.24	5.19	6.11	7.02	8.21	7.06	5.61	4.59	3.84	3.28	2.85	2.50	2.21	1.98
25	0.25	0.47	1.27	2.02	2.73	3.42	4.43	5.42	6.39	7.34	8.58	7.51	5.96	4.88	4.09	3.49	3.03	2.65	2.35	2.11
26	0.26	0.49	1.33	2.10	2.85	3.57	4.63	5.65	6.66	7.65	8.95	7.96	6.32	5.17	4.34	3.70	3.21	2.82	2.50	2.23
28	0.29	0.54	1.44	2.28	3.08	3.87	5.01	6.12	7.22	8.29	9.70	8.90	7.06	5.78	4.84	4.14	3.59	3.15	2.79	2.50
30	0.31	0.58	1.55	2.45	3.32	4.17	5.40	6.60	7.78	8.93	10.45	9.87	7.83	6.41	5.37	4.59	3.98	3.49	3.10	2.77
32	0.33	0.62	1.66	2.63	3.56	4.47	5.79	7.07	8.34	9.58	11.20	10.87	8.63	7.06	5.92	5.05	4.38	3.84	3.41	3.05
35	0.37	0.68	1.83	2.90	3.93	4.92	6.38	7.79	9.18	10.55	12.34	12.44	9.87	8.08	6.77	5.78	5.01	4.40	3.90	3.49
40	0.42	0.79	2.12	3.35	4.53	5.68	7.36	9.00	10.61	12.19	14.26	15.20	12.06	9.87	8.27	7.06	6.12	5.37	4.77	4.26
45	0.48	0.89	2.40	3.80	5.15	6.46	8.36	10.22	12.05	13.84	16.19	18.13	14.39	11.78	9.87	8.43	7.31	6.41	5.69	5.09

MAXIMUM KILOWATT RATING OF 40

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket																			
	10	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500
	Lubrication System																			
	A										B									
9	0.05	0.11	0.20	0.37	0.69	1.00	1.30	1.58	2.14	2.69	2.95	3.48	3.75	3.07	2.58	2.04	1.67	1.40	1.20	0.95
10	0.05	0.12	0.22	0.42	0.78	1.12	1.45	1.77	2.40	3.01	3.31	3.90	4.40	3.60	3.02	2.39	1.96	1.64	1.40	1.11
11	0.06	0.13	0.25	0.46	0.86	1.24	1.61	1.97	2.66	3.34	3.67	4.32	4.97	4.15	3.48	2.76	2.26	1.89	1.62	1.28
12	0.06	0.15	0.27	0.51	0.95	1.36	1.77	2.16	2.92	3.67	4.03	4.75	5.46	4.73	3.96	3.15	2.58	2.16	1.84	1.46
13	0.07	0.16	0.30	0.55	1.03	1.49	1.93	2.35	3.19	4.00	4.39	5.18	5.95	5.33	4.47	3.55	2.90	2.43	2.08	1.65
14	0.08	0.17	0.32	0.60	1.12	1.61	2.09	2.55	3.45	4.33	4.76	5.61	6.44	5.96	5.00	3.96	3.25	2.72	2.32	1.84
15	0.08	0.19	0.35	0.65	1.20	1.74	2.25	2.75	3.72	4.66	5.13	6.04	6.94	6.61	5.54	4.40	3.60	3.02	2.58	2.04
16	0.09	0.20	0.37	0.69	1.29	1.86	2.41	2.95	3.99	5.00	5.50	6.48	7.44	7.28	6.10	4.84	3.96	3.32	2.84	2.25
17	0.09	0.21	0.40	0.74	1.38	1.99	2.57	3.15	4.26	5.34	5.87	6.92	7.95	7.98	6.69	5.31	4.34	3.64	3.11	2.47
18	0.10	0.23	0.42	0.79	1.47	2.11	2.74	3.35	4.53	5.68	6.25	7.36	8.45	8.69	7.28	5.78	4.73	3.96	3.39	2.69
19	0.10	0.24	0.45	0.83	1.56	2.24	2.90	3.55	4.80	6.02	6.62	7.80	8.96	9.43	7.90	6.27	5.13	4.30	3.67	2.91
20	0.11	0.25	0.47	0.88	1.64	2.37	3.07	3.75	5.08	6.36	7.00	8.25	9.47	10.18	8.53	6.77	5.54	4.64	3.96	3.15
21	0.12	0.27	0.50	0.93	1.73	2.50	3.23	3.95	5.35	6.71	7.38	8.69	9.99	10.95	9.18	7.28	5.96	5.00	4.27	3.39
22	0.12	0.28	0.52	0.98	1.82	2.62	3.40	4.16	5.63	7.05	7.76	9.14	10.50	11.74	9.84	7.81	6.39	5.36	4.57	3.63
23	0.13	0.29	0.55	1.02	1.91	2.75	3.57	4.36	5.90	7.40	8.14	9.59	11.02	12.42	10.52	8.35	6.83	5.73	4.89	3.88
24	0.14	0.31	0.57	1.07	2.00	2.88	3.74	4.57	6.18	7.75	8.52	10.04	11.53	13.01	11.21	8.90	7.28	6.10	5.21	4.14
25	0.14	0.32	0.60	1.12	2.09	3.01	3.90	4.77	6.46	8.10	8.90	10.49	12.05	13.59	11.92	9.46	7.74	6.49	5.54	4.40
26	0.15	0.34	0.63	1.17	2.18	3.14	4.07	4.98	6.74	8.45	9.29	10.95	12.58	14.18	12.64	10.03	8.21	6.88	5.88	4.66
28	0.16	0.36	0.68	1.27	2.36	3.41	4.41	5.39	7.30	9.15	10.06	11.86	13.62	15.36	14.13	11.21	9.18	7.69	6.57	5.21
30	0.17	0.39	0.73	1.37	2.55	3.67	4.75	5.81	7.87	9.86	10.84	12.78	14.68	16.55	15.67	12.44	10.18	8.53	7.28	5.78
32	0.18	0.42	0.78	1.46	2.73	3.93	5.10	6.23	8.43	10.57	11.63	13.70	15.74	17.75	17.27	13.70	11.21	9.40	8.02	6.37
35	0.20	0.46	0.86	1.61	3.01	4.33	5.61	6.86	9.29	11.65	12.81	15.09	17.34	19.55	19.75	15.67	12.83	10.75	9.18	7.28
40	0.23	0.53	1.00	1.86	3.48	5.01	6.49	7.93	10.73	13.46	14.79	17.43	20.03	22.58	24.13	19.15	15.67	13.13	11.21	8.90
45	0.27	0.61	1.13	2.12	3.95	5.69	7.37	9.00	12.19	15.28	16.80	19.80	22.74	25.65	28.51	22.85	18.70	15.67	13.38	10.62

MAXIMUM KILOWATT RATING OF 50

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket																			
	10	25	50	100	200	300	400	500	700	900	1000	1200	1400	1600	1800	2100	2400	2700	3000	3500
	Lubrication System																			
	A								B											
9	0.09	0.21	0.39	0.72	1.35	1.95	2.52	3.08	4.17	5.23	5.75	5.66	4.49	3.67	3.08	2.44	2.00	1.68	1.43	1.14
10	0.10	0.23	0.43	0.81	1.51	2.18	2.82	3.45	4.67	5.86	6.44	6.62	5.26	4.30	3.61	2.86	2.34	1.96	1.68	1.33
11	0.11	0.26	0.48	0.90	1.68	2.42	3.13	3.83	5.18	6.49	7.14	7.64	6.06	4.96	4.16	3.30	2.70	2.26	1.93	1.53
12	0.12	0.28	0.53	0.99	1.84	2.65	3.44	4.20	5.69	7.13	7.84	8.71	6.91	5.66	4.74	3.76	3.08	2.58	2.20	1.75
13	0.14	0.31	0.58	1.08	2.01	2.89	3.75	4.58	6.20	7.78	8.55	9.82	7.79	6.38	5.34	4.24	3.47	2.91	2.48	1.97
14	0.15	0.33	0.62	1.17	2.18	3.13	4.06	4.96	6.72	8.43	9.26	10.92	8.71	7.13	5.97	4.74	3.88	3.25	2.78	2.20
15	0.16	0.36	0.67	1.26	2.34	3.38	4.38	5.35	7.24	9.08	9.98	11.76	9.66	7.90	6.62	5.26	4.30	3.61	3.08	2.44
16	0.17	0.39	0.72	1.35	2.51	3.62	4.69	5.73	7.76	9.73	10.70	12.61	10.64	8.71	7.30	5.79	4.74	3.97	3.39	2.69
17	0.18	0.41	0.77	1.44	2.68	3.87	5.01	6.12	8.29	10.39	11.43	13.46	11.65	9.54	7.99	6.34	5.19	4.35	3.71	2.95
18	0.19	0.44	0.82	1.53	2.85	4.11	5.33	6.51	8.82	11.05	12.15	14.32	12.69	10.39	8.71	6.91	5.66	4.74	4.05	3.21
19	0.20	0.47	0.87	1.62	3.03	4.36	5.65	6.90	9.35	11.72	12.88	15.18	13.77	11.27	9.44	7.49	6.13	5.14	4.39	3.48
20	0.22	0.49	0.92	1.71	3.20	4.61	5.97	7.30	9.88	12.39	13.62	16.05	14.87	12.17	10.20	8.09	6.62	5.55	4.74	3.76
21	0.23	0.52	0.97	1.81	3.37	4.86	6.29	7.69	10.41	13.06	14.35	16.91	16.00	13.09	10.97	8.71	7.13	5.97	5.10	4.05
22	0.24	0.55	1.02	1.90	3.55	5.11	6.62	8.09	10.95	13.73	15.09	17.79	17.15	14.04	11.77	9.34	7.64	6.40	5.47	4.34
23	0.25	0.57	1.07	1.99	3.72	5.36	6.94	8.49	11.49	14.40	15.84	18.66	18.34	15.01	12.58	9.98	8.17	6.85	5.85	4.64
24	0.26	0.60	1.12	2.09	3.90	5.61	7.27	8.89	12.03	15.08	16.58	19.54	19.54	16.00	13.41	10.64	8.71	7.30	6.23	4.94
25	0.27	0.63	1.17	2.18	4.07	5.86	7.60	9.29	12.57	15.76	17.33	20.42	20.78	17.01	14.25	11.31	9.26	7.76	6.62	5.26
26	0.29	0.65	1.22	2.28	4.25	6.12	7.93	9.69	13.11	16.44	18.08	21.30	22.04	18.04	15.12	12.00	9.82	8.23	7.03	5.58
28	0.31	0.71	1.32	2.47	4.60	6.63	8.59	10.49	14.21	17.81	19.58	23.08	24.63	20.16	16.89	13.41	10.97	9.20	7.85	6.23
30	0.33	0.76	1.42	2.66	4.96	7.14	9.25	11.31	15.31	19.19	21.10	24.86	27.31	22.36	18.74	14.87	12.17	10.20	8.71	6.91
32	0.36	0.82	1.53	2.85	5.31	7.66	9.92	12.12	16.41	20.58	22.62	26.66	30.09	24.63	20.64	16.38	13.41	11.23	9.59	7.61
35	0.39	0.90	1.68	3.14	5.85	8.43	10.93	13.35	18.08	22.67	24.92	29.37	33.74	28.17	23.61	18.74	15.33	12.85	10.97	8.71
40	0.46	1.04	1.94	3.62	6.76	9.74	12.62	15.43	20.88	26.18	28.79	33.92	38.97	34.42	28.85	22.89	18.74	15.70	13.41	10.64
45	0.52	1.18	2.21	4.12	7.68	11.06	14.33	17.52	23.22	29.73	32.69	38.52	44.25	41.07	34.42	27.31	22.36	18.74	16.00	12.66

MAXIMUM KILOWATT RATING OF 60

No. of Teeth Small Spkt	Maximum R.P.M.-Small Sprocket																			
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
								Lubrication System												
	A							B												
9	0.17	0.39	0.72	1.35	1.95	2.52	3.63	4.71	5.75	6.78	7.79	8.78	9.77	8.60	7.46	6.54	5.19	4.25	3.56	3.04
10	0.19	0.44	0.81	1.51	2.18	2.83	4.07	5.27	6.45	7.60	8.73	9.84	10.94	10.07	8.73	7.66	6.08	4.98	4.17	3.56
11	0.21	0.48	0.90	1.68	2.42	3.13	4.51	5.85	7.15	8.42	9.68	10.91	12.13	11.62	10.07	8.84	7.02	5.74	4.81	4.11
12	0.23	0.53	0.99	1.84	2.66	3.44	4.96	6.42	7.85	9.25	10.63	11.99	13.33	13.24	11.48	10.07	7.99	6.54	5.48	4.68
13	0.25	0.58	1.08	2.01	2.90	3.75	5.41	7.00	8.56	10.09	11.59	13.07	14.53	14.93	12.94	11.36	9.01	7.38	6.18	5.28
14	0.27	0.63	1.17	2.18	3.14	4.07	5.86	7.59	9.27	10.93	12.55	14.16	15.74	16.69	14.47	12.70	10.07	8.25	6.91	5.90
15	0.30	0.67	1.26	2.35	3.38	4.38	6.31	8.17	9.99	11.77	13.52	15.25	16.96	18.51	16.04	14.08	11.17	9.15	7.66	6.54
16	0.32	0.72	1.35	2.52	3.62	4.70	6.76	8.76	10.71	12.62	14.50	16.35	18.18	19.99	17.67	15.51	12.31	10.07	8.44	7.21
17	0.34	0.77	1.44	2.69	3.87	5.01	7.22	9.36	11.44	13.48	15.48	17.46	19.41	21.34	19.36	16.99	13.48	11.03	9.25	7.90
18	0.36	0.82	1.53	2.86	4.12	5.33	7.68	9.95	12.17	14.33	16.47	18.57	20.65	22.70	21.09	18.51	14.69	12.02	10.07	8.60
19	0.38	0.87	1.62	3.03	4.36	5.65	8.14	10.55	12.90	15.20	17.46	19.69	21.89	24.07	22.87	20.07	15.93	13.04	10.93	9.33
20	0.40	0.92	1.72	3.20	4.61	5.98	8.61	11.15	13.63	16.06	18.45	20.81	23.14	25.44	24.70	21.68	17.20	14.08	11.80	10.07
21	0.42	0.97	1.81	3.38	4.86	6.30	9.07	11.75	14.37	16.93	19.45	21.94	24.39	26.81	26.58	23.32	18.51	15.15	12.70	10.84
22	0.45	1.02	1.90	3.55	5.11	6.62	9.54	12.36	15.11	17.80	20.45	23.07	25.64	28.20	28.50	25.01	19.85	16.24	13.61	11.62
23	0.47	1.07	2.00	3.72	5.36	6.95	10.01	12.97	15.85	18.68	21.46	24.20	26.91	29.58	30.46	26.73	21.21	17.36	14.55	12.42
24	0.49	1.12	2.09	3.90	5.62	7.28	10.48	13.58	16.60	19.56	22.47	25.34	28.17	30.97	32.47	28.50	22.61	18.51	15.51	13.24
25	0.51	1.17	2.18	4.08	5.87	7.60	10.95	14.19	17.35	20.44	23.48	26.48	29.44	32.37	34.52	30.30	24.04	19.68	16.49	14.08
26	0.54	1.22	2.28	4.25	6.12	7.93	11.43	14.80	18.10	21.32	24.50	27.63	30.72	33.77	36.61	32.13	25.50	20.87	17.49	14.93
28	0.58	1.32	2.47	4.61	6.63	8.59	12.38	16.04	19.60	23.10	26.54	29.93	33.27	36.58	39.86	35.91	28.50	23.32	19.55	16.69
30	0.62	1.42	2.66	4.96	7.15	9.26	13.34	17.28	21.12	24.89	28.59	32.24	35.85	39.41	42.94	39.82	31.60	25.87	21.68	18.51
32	0.67	1.53	2.85	5.32	7.66	9.93	14.30	18.53	22.65	26.68	30.66	34.57	38.44	42.26	46.04	43.82	34.82	28.50	23.88	20.39
35	0.74	1.68	3.14	5.86	8.44	10.94	15.75	20.41	24.95	29.40	33.77	38.08	42.34	46.55	50.72	50.18	39.82	32.60	27.32	23.32
40	0.85	1.94	3.63	6.77	9.75	12.63	18.20	23.57	28.82	33.96	39.01	43.99	48.91	53.78	58.59	61.31	48.66	39.82	33.37	28.50
45	0.97	2.21	4.12	7.69	11.07	14.35	20.67	26.77	32.73	38.56	44.30	49.96	55.55	61.07	66.54	71.96	58.06	47.52	39.82	34.00

MAXIMUM KILOWATT RATING OF 80

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket																			
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1400	1600	1800	2000
							Lubrication System													
	A						B													
9	0.40	0.91	1.69	3.16	4.55	5.89	8.48	10.99	13.44	15.83	18.19	15.13	12.68	10.83	9.39	8.24	6.54	5.35	4.48	3.83
10	0.45	1.02	1.90	3.54	5.09	6.60	9.51	12.32	15.06	17.74	20.38	17.72	14.85	12.68	10.99	9.65	7.66	6.27	5.25	4.48
11	0.49	1.13	2.10	3.92	5.65	7.32	10.54	13.65	16.69	19.66	22.59	20.45	17.14	14.63	12.68	11.13	8.83	7.23	6.06	5.17
12	0.54	1.24	2.31	4.31	6.20	8.04	11.58	15.00	18.33	21.60	24.82	23.30	19.53	16.67	14.45	12.68	10.06	8.24	6.90	5.89
13	0.59	1.35	2.52	4.70	6.76	8.76	12.62	16.35	19.99	23.55	27.06	26.27	22.02	18.80	16.29	14.30	11.35	9.29	7.78	6.65
14	0.64	1.46	2.73	5.09	7.33	9.49	13.67	17.71	21.65	25.51	29.31	29.36	24.60	21.01	18.21	15.98	12.68	10.38	8.70	7.43
15	0.69	1.57	2.94	5.48	7.89	10.23	14.73	19.08	23.33	27.49	31.58	32.56	27.29	23.30	20.19	17.72	14.06	11.51	9.65	8.24
16	0.74	1.69	3.15	5.88	8.46	10.96	15.79	20.46	25.01	29.47	33.86	35.87	30.06	25.67	22.25	19.53	15.49	12.68	10.63	9.07
17	0.79	1.80	3.36	6.27	9.04	11.71	16.86	21.85	26.70	31.47	36.15	39.28	32.92	28.11	24.37	21.38	16.97	13.89	11.64	9.94
18	0.84	1.92	3.58	6.67	9.61	12.45	17.94	23.24	28.40	33.47	38.45	42.80	35.87	30.63	26.55	23.30	18.49	15.13	12.68	10.83
19	0.89	2.03	3.79	7.07	10.19	13.20	19.01	24.63	30.11	35.48	40.76	45.97	38.90	33.21	28.79	25.27	20.05	16.41	13.75	11.74
20	0.94	2.15	4.01	7.48	10.77	13.95	20.10	26.04	31.83	37.50	43.08	48.59	42.01	35.87	31.09	27.29	21.65	17.72	14.85	12.68
21	0.99	2.26	4.22	7.88	11.35	14.71	21.18	27.45	33.55	39.53	45.42	51.21	45.20	38.59	33.45	29.36	23.30	19.07	15.98	13.64
22	1.04	2.38	4.44	8.29	11.94	15.47	22.28	28.86	35.28	41.57	47.76	53.85	48.47	41.38	35.87	31.48	24.98	20.45	17.14	14.63
23	1.09	2.50	4.66	8.70	12.52	16.23	23.37	30.28	37.01	43.61	50.10	56.50	51.81	44.24	38.34	33.65	26.70	21.86	18.32	15.64
24	1.15	2.61	4.88	9.10	13.11	16.99	24.47	31.70	38.75	45.66	52.46	59.16	55.23	47.15	40.87	35.87	28.47	23.30	19.53	16.67
25	1.20	2.73	5.10	9.51	13.70	17.76	25.57	33.13	40.50	47.72	54.83	61.83	58.71	50.13	43.45	38.14	30.26	24.77	20.76	17.72
26	1.25	2.85	5.32	9.93	14.30	18.52	26.68	34.57	42.25	49.79	57.20	64.50	62.27	53.17	46.08	40.45	32.10	26.27	22.02	18.80
28	1.35	3.09	5.76	10.75	15.49	20.07	28.90	37.45	45.77	53.94	61.96	69.88	69.59	59.42	51.50	45.20	35.87	29.36	24.60	21.01
30	1.46	3.33	6.21	11.59	16.69	21.62	31.14	40.34	49.32	58.11	66.76	75.28	77.18	65.90	57.12	50.13	39.78	32.56	27.29	23.30
32	1.56	3.57	6.66	12.42	17.89	23.18	33.39	43.25	52.88	62.30	71.58	80.72	85.03	72.60	62.93	55.23	43.82	35.87	30.06	25.67
35	1.72	3.93	7.33	13.68	19.71	25.54	36.78	47.65	58.25	68.64	78.85	88.92	97.26	83.04	71.98	63.17	50.13	41.03	34.39	29.36
40	1.99	4.54	8.47	15.81	22.77	29.50	42.49	55.04	67.28	79.28	91.08	102.71	114.20	101.5	87.94	77.18	61.25	50.13	42.01	35.87
45	2.26	5.16	9.62	17.95	25.86	33.50	48.25	62.51	76.41	90.04	103.44	116.65	129.7	121.1	104.9	92.09	73.08	59.82	50.13	42.80

MAXIMUM KILOWATT RATING OF 100

No. of Teeth Small Spkt	Maximum R.P.M.-Small Sprocket																							
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1600	1800				
	Lubrication System																							
	A					B														C				
9	0.76	1.74	3.24	6.05	8.71	11.28	16.25	21.05	25.73	27.85	22.10	18.09	15.16	12.94	11.22	9.85	8.73	7.81	6.40	5.36				
10	0.85	1.95	3.63	6.77	9.76	12.64	18.21	23.59	28.84	32.62	25.89	21.19	17.76	15.16	13.14	11.53	10.23	9.15	7.49	6.28				
11	0.95	2.16	4.02	7.51	10.82	14.01	20.18	26.15	31.96	37.63	29.86	24.44	20.49	17.49	15.16	13.31	11.80	10.56	8.64	7.24				
12	1.04	2.37	4.42	8.25	11.88	15.38	22.17	28.72	35.11	41.37	34.03	27.85	23.34	19.93	17.27	15.16	13.45	12.03	9.85	8.25				
13	1.13	2.58	4.82	8.99	12.95	16.78	24.17	31.32	38.28	45.11	38.37	31.40	26.32	22.47	19.48	17.09	15.16	13.57	11.10	9.31				
14	1.23	2.80	5.22	9.74	14.03	18.18	26.19	33.93	41.47	48.87	42.88	35.10	29.41	25.11	21.77	19.10	16.94	15.16	12.41	10.40				
15	1.32	3.01	5.62	10.50	15.12	19.59	28.21	36.55	44.68	52.65	47.56	38.92	32.62	27.85	24.14	21.19	18.79	16.81	13.76	11.53				
16	1.42	3.23	6.03	11.25	16.21	21.00	30.25	39.19	47.91	56.45	52.39	42.88	35.94	30.68	26.60	23.34	20.70	18.52	15.16	12.71				
17	1.51	3.45	6.44	12.02	17.31	22.42	32.30	41.84	51.15	60.27	57.38	46.96	39.36	33.60	29.13	25.56	22.67	20.29	16.60	13.91				
18	1.61	3.67	6.85	12.78	18.41	23.85	34.35	44.51	54.40	64.11	62.51	51.17	42.88	36.61	31.73	27.85	24.70	22.10	18.09	15.16				
19	1.71	3.89	7.26	13.55	19.52	25.28	36.42	47.18	57.68	67.96	67.80	55.49	46.50	39.71	34.42	30.20	26.79	23.97	19.62	16.44				
20	1.80	4.11	7.67	14.32	20.63	26.72	38.49	49.87	60.96	71.83	73.22	59.93	50.22	42.88	37.17	32.62	28.93	25.89	21.19	17.76				
21	1.90	4.34	8.09	15.10	21.74	28.17	40.58	52.57	64.26	75.72	78.78	64.48	54.04	46.14	39.99	35.10	31.13	27.85	22.80	19.10				
22	2.00	4.56	8.51	15.87	22.86	29.62	42.67	55.28	67.57	79.62	84.47	69.14	57.94	49.47	42.88	37.63	33.38	29.86	24.44	20.49				
23	2.10	4.78	8.93	16.65	23.99	31.08	44.77	57.99	70.89	83.54	90.29	73.90	61.94	52.88	45.84	40.23	35.68	31.92	26.13	21.90				
24	2.20	5.01	9.34	17.44	25.12	32.54	46.87	60.72	74.23	87.46	96.25	78.78	66.02	56.37	48.86	42.88	38.03	34.03	27.85	23.34				
25	2.29	5.23	9.77	18.22	26.25	34.01	48.98	63.46	77.57	91.41	102.32	83.75	70.19	59.93	51.94	45.59	40.43	36.18	29.61	24.82				
26	2.39	5.46	10.19	19.01	27.39	35.48	51.10	66.21	80.93	95.36	108.52	88.83	74.44	63.56	55.09	48.35	42.88	38.37	31.40	26.32				
28	2.59	5.91	11.04	20.60	29.67	38.44	55.36	71.72	87.67	103.31	118.68	99.27	83.19	71.03	61.57	54.04	47.92	42.88	35.10	29.41				
30	2.79	6.37	11.89	22.19	31.96	41.41	59.64	77.27	94.46	111.30	127.9	110.1	92.26	78.78	68.28	59.93	53.15	47.56	38.92	32.62				
32	3.00	6.83	12.75	23.79	34.27	44.40	63.95	82.85	101.28	119.33	137.1	123.1	101.6	86.78	75.22	66.02	58.55	52.39	42.88	35.94				
35	3.30	7.53	14.05	26.21	37.75	48.91	70.45	91.27	111.57	131.5	151.0	138.7	116.3	99.27	86.05	75.52	66.97	59.93	49.05	41.11				
40	3.81	8.69	16.22	30.28	43.61	56.50	81.38	105.43	128.9	151.9	174.5	169.5	142.1	121.3	105.1	92.26	81.83	73.22	59.93	50.22				
45	4.33	9.87	18.43	34.38	49.62	64.16	92.42	119.73	146.4	172.5	198.1	202.3	169.5	144.7	125.4	110.1	97.64	87.37	71.51	59.93				

MAXIMUM KILOWATT RATING OF 120

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket																
	10	25	50	100	150	200	300	400	500	600	700	800	900	1000	1100	1200	1300
	Lubrication System																
	A			B									C				
9	1.29	2.93	5.47	10.21	14.71	19.05	27.44	35.55	42.36	32.23	25.57	20.93	17.54	14.98	12.98	11.39	10.10
10	1.44	3.29	6.13	11.44	16.48	21.35	30.75	39.83	48.69	37.74	29.95	24.51	20.54	17.54	15.20	13.34	11.83
11	1.60	3.64	6.79	12.68	18.26	23.66	34.08	44.15	53.97	43.54	34.55	28.28	23.70	20.24	17.54	15.39	13.65
12	1.75	4.00	7.46	13.93	20.06	25.99	37.44	48.50	59.29	49.61	39.37	32.23	27.01	23.06	19.99	17.54	15.56
13	1.91	4.36	8.14	15.19	21.87	28.34	40.82	52.88	64.64	55.94	44.39	36.34	30.45	26.00	22.54	19.78	17.54
14	2.07	4.72	8.82	16.45	23.70	30.70	44.22	57.29	70.03	62.52	49.61	40.61	34.03	29.06	25.19	22.10	19.60
15	2.23	5.09	9.50	17.72	25.53	33.08	47.64	61.72	75.45	69.34	55.02	45.04	37.74	32.23	27.93	24.51	21.74
16	2.39	5.46	10.18	19.00	27.37	35.46	51.08	66.18	80.90	76.39	60.62	49.61	41.58	35.50	30.77	27.01	23.95
17	2.55	5.83	10.87	20.29	29.23	37.86	54.54	70.65	86.37	83.66	66.39	54.34	45.54	38.88	33.70	29.58	26.23
18	2.72	6.20	11.57	21.58	31.09	40.27	58.01	75.15	91.87	91.15	72.33	59.20	49.61	42.36	36.72	32.23	28.58
19	2.88	6.57	12.26	22.88	32.96	42.70	61.50	79.67	97.39	98.85	78.44	64.20	53.81	45.94	39.82	34.95	30.99
20	3.04	6.94	12.96	24.18	34.83	45.13	65.00	84.21	102.94	106.75	84.71	69.34	58.11	49.61	43.00	37.74	33.47
21	3.21	7.32	13.66	25.49	36.72	47.57	68.52	88.77	108.51	114.86	91.15	74.60	62.52	53.38	46.27	40.61	36.01
22	3.37	7.70	14.36	26.81	38.61	50.02	72.05	93.34	114.10	123.16	97.73	79.99	67.04	57.24	49.61	43.54	38.62
23	3.54	8.08	15.07	28.12	40.51	52.48	75.59	97.93	119.71	131.65	104.47	85.51	71.66	61.19	53.04	46.55	41.28
24	3.71	8.46	15.78	29.45	42.41	54.95	79.15	102.54	125.34	140.33	111.36	91.15	76.39	65.22	56.53	49.61	44.00
25	3.87	8.84	16.49	30.77	44.33	57.43	82.72	107.16	130.99	149.19	118.39	96.90	81.21	69.34	60.10	52.75	46.78
26	4.04	9.22	17.20	32.11	46.24	59.91	86.29	111.80	136.66	158.23	125.57	102.77	86.13	73.54	63.74	55.94	49.61
28	4.38	9.99	18.64	34.78	50.10	64.90	93.49	121.11	148.05	174.45	140.33	114.86	96.26	82.19	71.24	62.52	55.45
30	4.72	10.76	20.08	37.47	53.97	69.92	100.72	130.48	159.50	187.94	155.63	127.38	106.75	91.15	79.00	69.34	61.49
32	5.06	11.54	21.53	40.18	57.87	74.97	107.99	139.90	171.02	201.51	171.45	140.33	117.60	100.41	87.04	76.39	67.74
35	5.57	12.71	23.72	44.26	63.75	82.59	118.96	154.12	188.40	221.99	196.12	160.52	134.52	114.86	99.56	87.38	77.49
40	6.44	14.68	27.40	51.12	73.64	95.40	137.42	178.03	217.62	256.43	239.61	196.12	164.36	140.33	121.64	106.75	94.68
45	7.31	16.67	31.11	58.06	83.63	108.34	156.06	202.17	247.14	291.21	285.91	234.02	196.12	167.45	145.14	127.38	112.97

MAXIMUM KILOWATT RATING OF 140

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket																
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900
	Lubrication System																
	A			B									C				
9	1.99	4.54	8.46	15.80	22.75	29.48	36.03	42.46	48.78	55.00	56.13	47.92	41.54	36.45	28.93	23.68	19.84
10	2.23	5.08	9.48	17.70	25.49	33.03	40.37	47.57	54.65	61.63	65.74	56.13	48.65	42.70	33.88	27.73	23.24
11	2.47	5.63	10.51	19.62	28.26	36.61	44.75	52.73	60.58	68.32	75.84	64.75	56.13	49.26	39.09	31.99	26.81
12	2.71	6.19	11.55	21.55	31.04	40.22	49.16	57.93	66.55	75.05	83.44	73.78	63.95	56.13	44.54	36.45	30.55
13	2.96	6.75	12.59	23.50	33.85	43.85	53.60	63.16	72.56	81.82	90.97	83.19	72.11	63.29	50.22	41.11	34.45
14	3.20	7.31	13.64	25.46	36.67	47.50	58.07	68.42	78.60	88.64	98.55	92.97	80.59	70.73	56.13	45.94	38.50
15	3.45	7.88	14.70	27.42	39.50	51.18	62.56	73.71	84.68	95.50	106.18	103.11	89.37	78.44	62.25	50.95	42.70
16	3.70	8.44	15.76	29.40	42.35	54.87	67.07	79.04	90.80	102.39	113.84	113.59	98.46	86.41	68.57	56.13	47.04
17	3.95	9.02	16.82	31.39	45.22	58.58	71.61	84.38	96.94	109.32	121.54	124.40	107.83	94.64	75.10	61.47	51.51
18	4.20	9.59	17.89	33.39	48.10	62.31	76.17	89.76	103.11	116.28	129.28	135.54	117.49	103.11	81.82	66.97	56.13
19	4.46	10.17	18.97	35.40	50.99	66.06	80.75	95.15	109.31	123.27	137.06	146.99	127.41	111.82	88.74	72.63	60.87
20	4.71	10.75	20.05	37.42	53.90	69.82	85.35	100.57	115.54	130.29	144.87	158.75	137.60	120.76	95.83	78.44	65.74
21	4.97	11.33	21.14	39.44	56.81	73.60	89.97	106.01	121.79	137.34	152.70	167.89	148.05	129.93	103.11	84.39	70.73
22	5.22	11.91	22.23	41.47	59.74	77.39	94.61	111.48	128.07	144.42	160.57	176.54	158.75	139.32	110.56	90.49	75.84
23	5.48	12.50	23.32	43.51	62.68	81.20	99.26	116.96	134.37	151.52	168.47	185.23	169.69	148.93	118.19	96.73	81.07
24	5.74	13.08	24.42	45.56	65.63	85.02	103.93	122.46	140.69	158.65	176.39	193.94	180.88	158.75	125.98	103.11	86.41
25	5.99	13.67	25.52	47.61	68.58	88.85	108.61	127.98	147.03	165.80	184.34	202.68	192.30	168.77	133.93	109.62	91.87
26	6.25	14.27	26.62	49.67	71.55	92.70	113.31	133.52	153.39	172.98	192.32	211.45	203.95	179.00	142.05	116.26	97.43
28	6.77	15.45	28.84	53.81	77.51	100.42	122.75	144.64	166.17	187.39	208.34	229.07	227.94	200.05	158.75	129.93	108.89
30	7.30	16.65	31.07	57.98	83.51	108.19	132.25	155.83	179.02	201.89	224.46	246.79	252.79	221.86	176.06	144.10	120.76
32	7.83	17.85	33.31	62.16	89.54	116.00	141.80	167.08	191.95	216.46	240.67	264.60	278.48	244.41	193.95	158.75	133.04
35	8.62	19.67	36.70	68.48	98.64	127.79	156.21	184.06	211.45	238.46	265.12	291.49	317.60	279.57	221.86	181.59	152.18
40	9.96	22.72	42.39	79.10	113.94	147.61	180.44	212.62	244.26	275.45	306.25	336.71	366.87	341.57	271.06	221.86	185.93
45	11.31	25.80	48.14	89.83	129.39	167.63	204.92	241.46	277.39	312.81	347.79	382.39	416.64	407.58	323.44	264.73	221.86

MAXIMUM KILOWATT RATING OF 160

No. of Teeth Small Spkt	Maximum R.P.M.-Small Sprocket																			
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
	Lubrication System																			
	A			B											C					
9	2.89	6.58	12.28	22.92	33.01	42.76	52.27	61.60	70.76	74.52	62.45	53.32	46.22	40.56	35.98	32.19	29.03	26.35	24.06	22.08
10	3.23	7.37	13.76	25.68	36.99	47.92	58.57	69.02	79.29	87.28	73.15	62.45	54.13	47.51	42.13	37.70	34.00	30.86	28.18	25.86
11	3.58	8.17	15.25	28.46	41.00	53.11	64.93	76.50	87.89	99.11	84.39	72.05	62.45	54.81	48.61	43.50	39.22	35.60	32.51	29.84
12	3.94	8.98	16.76	31.27	45.04	58.35	71.32	84.04	96.55	108.88	96.15	82.10	71.16	62.45	55.39	49.56	44.69	40.56	37.04	34.00
13	4.29	9.79	18.27	34.09	49.10	63.61	77.76	91.63	105.27	118.71	108.4	92.57	80.24	70.42	62.45	55.88	50.39	45.74	41.76	38.33
14	4.65	10.61	19.79	36.93	53.19	68.91	84.24	99.26	114.04	128.6	121.2	103.5	89.67	78.70	69.80	62.45	56.31	51.12	46.67	42.84
15	5.01	11.43	21.32	39.79	57.31	74.25	90.76	106.94	122.86	138.5	134.4	114.7	99.45	87.28	77.41	69.26	62.45	56.69	51.76	47.51
16	5.37	12.25	22.86	42.66	61.45	79.61	97.31	114.66	131.7	148.5	148.0	126.4	109.6	96.15	85.27	76.30	68.80	62.45	57.02	52.34
17	5.73	13.08	24.41	45.55	65.60	84.99	103.90	122.42	140.6	158.6	162.1	138.4	120.0	105.3	93.39	83.57	75.35	68.40	62.45	57.32
18	6.10	13.91	25.96	48.45	69.78	90.40	110.51	130.2	149.6	168.7	176.6	150.8	130.7	114.7	101.8	91.05	82.10	74.52	68.04	62.45
19	6.47	14.75	27.52	51.36	73.98	95.84	117.16	138.0	158.6	178.8	191.6	163.6	141.8	124.4	110.3	98.74	89.03	80.82	73.79	67.73
20	6.83	15.59	29.09	54.28	78.19	101.30	123.83	145.9	167.6	189.0	206.9	176.6	153.1	134.4	119.2	106.6	96.15	87.28	79.69	73.15
21	7.20	16.43	30.66	57.22	82.42	106.78	130.5	153.8	176.7	199.3	221.5	190.1	164.7	144.6	128.2	114.7	103.5	93.91	85.75	78.70
22	7.57	17.28	32.24	60.17	86.67	112.28	137.3	161.7	185.8	209.5	233.0	203.8	176.6	155.0	137.5	123.0	110.9	100.7	91.94	84.39
23	7.95	18.13	33.83	63.13	90.93	117.80	144.0	169.7	194.9	219.8	244.4	217.8	188.8	165.7	147.0	131.5	118.6	107.6	98.28	90.21
24	8.32	18.98	35.42	66.10	95.21	123.34	150.8	177.7	204.1	230.2	255.9	232.2	201.3	176.6	156.7	140.2	126.4	114.7	104.8	96.15
25	8.70	19.84	37.02	69.08	99.50	128.9	157.6	185.7	213.3	240.5	267.4	246.9	214.0	187.8	166.6	149.0	134.4	122.0	111.4	102.2
26	9.07	20.70	38.62	72.07	103.80	134.5	164.4	193.7	222.5	251.0	279.0	261.8	226.9	199.2	176.6	158.1	142.5	129.4	118.1	108.4
28	9.83	22.42	41.84	78.07	112.45	145.7	178.1	209.8	241.1	271.9	302.3	292.6	253.6	222.6	197.4	176.6	159.3	144.6	132.0	121.2
30	10.59	24.15	45.07	84.11	121.15	157.0	191.9	226.1	259.7	292.9	325.6	324.5	281.3	246.9	218.9	195.9	176.6	160.3	146.4	134.4
32	11.35	25.90	48.33	90.18	129.9	168.3	205.7	242.4	278.5	314.0	349.2	357.5	309.9	272.0	241.2	215.8	194.6	176.6	161.3	148.0
35	12.51	28.53	53.24	99.35	143.1	185.4	226.6	267.0	306.8	345.9	384.6	408.9	354.5	311.1	275.9	246.9	222.6	202.1	184.5	169.3
40	14.45	32.96	61.50	114.76	165.3	214.1	261.8	308.5	354.9	399.6	444.3	488.5	433.1	380.1	337.1	301.6	272.0	246.9	225.4	206.9
45	16.41	37.43	69.84	130.3	187.7	243.2	297.3	350.3	402.4	453.8	504.6	554.8	516.8	453.5	402.2	359.9	324.5	294.6	269.0	246.9

MAXIMUM KILOWATT RATING OF 180

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket																	
	10	25	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
	Lubrication System																	
	A			B										C				
9	3.89	8.87	16.55	30.88	44.48	57.63	70.45	83.01	95.37	81.89	68.62	58.59	50.79	44.57	39.53	35.37	31.89	28.95
10	4.36	9.94	18.54	34.61	49.85	64.58	78.94	93.02	106.86	95.91	80.37	68.62	59.48	52.20	46.30	41.43	37.35	33.91
11	4.83	11.02	20.56	38.36	55.25	71.58	87.50	103.10	118.44	110.6	92.73	79.17	68.62	60.23	53.41	47.79	43.10	39.12
12	5.30	12.10	22.58	42.14	60.69	78.63	96.12	113.26	130.1	126.1	105.7	90.21	78.19	68.62	60.86	54.46	49.10	44.57
13	5.78	13.19	24.62	45.94	66.17	85.73	104.80	123.5	141.9	142.2	119.1	101.7	88.17	77.38	68.62	61.40	55.37	50.26
14	6.27	14.29	26.67	49.77	71.69	92.87	113.53	133.8	153.7	158.9	133.1	113.7	98.53	86.48	76.69	68.62	61.88	56.17
15	6.75	15.40	28.73	53.62	77.23	100.06	122.3	144.1	165.6	176.2	147.7	126.1	109.3	95.91	85.06	76.11	68.62	62.29
16	7.24	16.51	30.81	57.49	82.81	107.28	131.1	154.5	177.5	194.1	162.7	138.9	120.4	105.7	93.70	83.84	75.60	68.62
17	7.73	17.63	32.89	61.38	88.41	114.54	140.0	165.0	189.5	212.6	178.2	152.1	131.8	115.7	102.6	91.82	82.80	75.16
18	8.22	18.75	34.99	65.29	94.04	121.83	148.9	175.5	201.6	227.4	194.1	165.7	143.6	126.1	111.8	100.0	90.21	81.89
19	8.71	19.88	37.09	69.22	99.70	129.2	157.9	186.0	213.7	241.0	210.5	179.7	155.8	136.7	121.3	108.5	97.83	88.80
20	9.21	21.01	39.20	73.16	105.38	136.5	166.9	196.6	225.9	254.7	227.3	194.1	168.2	147.7	131.0	117.2	105.7	95.91
21	9.71	22.15	41.33	77.12	111.08	143.9	175.9	207.3	238.1	268.5	244.6	208.8	181.0	158.9	140.9	126.1	113.7	103.2
22	10.21	23.29	43.45	81.09	116.80	151.3	185.0	218.0	250.4	282.4	262.3	223.9	194.1	170.3	151.1	135.2	121.9	110.6
23	10.71	24.43	45.59	85.08	122.5	158.8	194.1	228.7	262.7	296.3	280.4	239.4	207.5	182.1	161.5	144.5	130.3	118.3
24	11.21	25.58	47.74	89.08	128.3	166.2	203.2	239.4	275.1	310.2	298.8	255.2	221.2	194.1	172.1	154.0	138.9	126.1
25	11.72	26.73	49.89	93.09	134.1	173.7	212.4	250.2	287.5	324.2	317.7	271.3	235.1	206.4	183.0	163.8	147.7	134.0
26	12.23	27.89	52.05	97.12	139.9	181.2	221.5	261.1	299.9	338.2	337.0	287.7	249.4	218.9	194.1	173.7	156.6	142.2
28	13.25	30.22	56.38	105.22	151.6	196.3	240.0	282.8	324.9	366.4	376.6	321.5	278.7	244.6	216.9	194.1	175.0	158.9
30	14.27	32.55	60.75	113.35	163.3	211.5	258.6	304.7	350.0	394.7	417.6	356.6	309.1	271.3	240.6	215.3	194.1	176.2
32	15.30	34.90	65.13	121.54	175.1	226.8	277.2	326.7	375.3	423.2	460.1	392.8	340.5	298.8	265.0	237.1	213.8	194.1
35	16.86	38.45	71.75	133.9	192.9	249.8	305.4	359.9	413.4	466.2	518.4	449.3	389.5	341.8	303.2	271.3	244.6	222.0
40	19.47	44.41	82.88	154.7	222.8	288.6	352.8	415.7	477.6	538.6	598.8	549.0	475.9	417.6	370.4	331.4	298.8	271.3
45	22.11	50.44	94.12	175.6	253.0	327.8	400.6	472.1	542.3	611.6	680.0	655.1	567.8	498.3	442.0	395.5	356.6	323.7

MAXIMUM KILOWATT RATING OF 200

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket																	
	10	15	20	30	40	50	70	100	150	200	250	300	350	400	450	500	550	600
	Lubrication System																	
	A			B										C				
9	4.87	7.01	9.08	13.08	16.94	20.71	28.04	38.65	55.67	72.13	88.17	103.89	108.8	89.09	74.66	63.75	55.25	48.49
10	5.45	7.85	10.17	14.66	18.99	23.21	31.42	43.31	62.38	80.82	98.79	116.4	127.5	104.3	87.44	74.66	64.71	56.80
11	6.04	8.71	11.28	16.24	21.04	25.73	34.82	48.01	69.15	89.58	109.51	129.0	147.1	120.4	100.9	86.13	74.66	65.52
12	6.64	9.56	12.39	17.84	23.12	28.26	38.26	52.74	75.96	98.41	120.3	141.7	162.8	137.2	114.9	98.14	85.07	74.66
13	7.24	10.43	13.51	19.46	25.21	30.81	41.71	57.50	82.82	107.29	131.2	154.5	177.5	154.7	129.6	110.7	95.92	84.18
14	7.84	11.30	14.63	21.08	27.31	33.38	45.18	62.29	89.72	116.2	142.1	167.4	192.3	172.8	144.8	123.7	107.2	94.08
15	8.45	12.17	15.76	22.71	29.42	35.96	48.68	67.11	96.66	125.2	153.1	180.4	207.2	191.7	160.6	137.2	118.9	104.3
16	9.06	13.05	16.90	24.35	31.54	38.56	52.19	71.95	103.64	134.3	164.1	193.4	222.2	211.2	177.0	151.1	131.0	114.9
17	9.67	13.93	18.05	25.99	33.68	41.17	55.73	76.82	110.65	143.4	175.2	206.5	237.2	231.3	193.8	165.5	143.4	125.9
18	10.29	14.82	19.20	27.65	35.82	43.79	59.27	81.71	117.7	152.5	186.4	219.6	252.3	252.0	211.2	180.3	156.3	137.2
19	10.91	15.71	20.35	29.31	37.97	46.42	62.84	86.62	124.8	161.6	197.6	232.8	267.5	273.3	229.0	195.5	169.5	148.7
20	11.53	16.60	21.51	30.98	40.14	49.07	66.42	91.56	131.9	170.9	208.9	246.1	282.7	295.1	247.3	211.2	183.0	
21	12.15	17.50	22.67	32.66	42.31	51.72	70.01	96.51	139.0	180.1	220.2	259.4	298.0	317.5	266.1	227.2	196.9	
22	12.78	18.40	23.84	34.34	44.49	54.38	73.62	101.49	146.2	189.4	231.5	272.8	313.4	340.5	285.3	243.6	211.2	
23	13.40	19.31	25.01	36.03	46.68	57.06	77.24	106.48	153.4	198.7	242.9	286.2	328.8	363.9	305.0	260.4	225.7	
24	14.04	20.22	26.19	37.72	48.87	59.74	80.87	111.48	160.6	208.0	254.3	299.7	344.3	387.9	325.1	277.6	240.6	
25	14.67	21.13	27.37	39.42	51.08	62.44	84.52	116.5	167.8	217.4	265.8	313.2	359.8	405.7	345.6	295.1	255.8	
26	15.30	22.04	28.56	41.13	53.29	65.14	88.18	121.6	175.1	226.8	277.3	326.7	375.3	423.3	366.6	313.0	271.3	

MAXIMUM KILOWATT RATING OF 240

No. of Teeth Small Spkt	Maximum R.P.M.-Small Sprocket																			
	5	10	15	20	25	30	40	50	60	80	100	125	150	175	200	250	300	350	400	450
	Lubrication System																			
	A						B												C	
9	4.20	7.84	11.29	14.62	17.88	21.07	27.29	33.36	39.31	50.93	62.25	76.10	89.67	103.01	116.2	142.0	158.7	125.9	103.1	86.38
10	4.71	8.78	12.65	16.39	20.03	23.60	30.58	37.38	44.05	57.06	69.75	85.27	100.47	115.4	130.2	159.1	185.9	147.5	120.7	101.2
11	5.22	9.73	14.02	18.16	22.20	26.16	33.89	41.43	48.82	63.2	77.32	94.51	111.37	127.9	144.3	176.4	207.8	170.2	139.3	116.7
12	5.73	10.69	15.40	19.95	24.39	28.74	37.23	45.52	53.63	69.48	84.94	103.83	122.3	140.5	158.5	193.7	228.3	193.9	158.7	
13	6.25	11.66	16.79	21.76	26.59	31.34	40.60	49.63	58.47	75.76	92.60	113.20	133.4	153.2	172.8	211.2	248.9	218.6	178.9	
14	6.77	12.63	18.19	23.57	28.81	33.95	43.98	53.76	63.35	82.07	100.32	122.6	144.5	166.0	187.2	228.8	269.7	244.3	200.0	
15	7.29	13.61	19.60	25.39	31.04	36.57	47.38	57.92	68.25	88.42	108.08	132.1	155.7	178.8	201.7	246.5	290.5	271.0	221.8	
16	7.82	14.59	21.01	27.22	33.28	39.21	50.80	62.10	73.17	94.80	115.9	141.7	166.9	191.8	216.2	264.3	311.5	298.5	244.3	
17	8.35	15.58	22.44	29.07	35.53	41.87	54.24	66.30	78.13	101.21	123.7	151.2	178.2	204.7	230.9	282.2	332.6	326.9	267.6	
18	8.88	16.57	23.86	30.92	37.79	44.53	57.69	70.52	83.10	107.66	131.6	160.9	189.6	217.8	245.6	300.2	353.7	356.2	291.5	
19	9.41	17.56	25.30	32.78	40.07	47.21	61.16	74.77	88.10	114.13	139.5	170.5	201.0	230.9	260.3	318.3	375.0	386.3	316.2	
20	9.95	18.56	26.74	34.64	42.35	49.90	64.65	79.02	93.12	120.6	147.5	180.3	212.4	244.0	275.2	336.4	396.4	417.2	341.5	
21	10.49	19.57	28.19	36.52	44.64	52.60	68.14	83.30	98.15	127.2	155.4	190.0	223.9	257.2	290.1	354.6	417.8	448.9	367.4	
22	11.03	20.58	29.64	38.40	46.94	55.31	71.65	87.59	103.21	133.7	163.5	199.8	235.4	270.5	305.0	372.9	439.3	481.3	393.9	
23	11.57	21.59	31.10	40.29	49.25	58.03	75.18	91.90	108.29	140.3	171.5	209.6	247.0	283.8	320.0	391.2	460.9	514.5	421.1	
24	12.11	22.60	32.56	42.18	51.56	60.76	78.71	96.22	113.38	146.9	179.6	219.5	258.6	297.1	335.1	409.6				
25	12.66	23.62	34.03	44.08	53.89	63.50	82.26	100.56	118.5	153.5	187.7	229.4	270.3	310.5	350.2	428.1				
26	13.21	24.65	35.50	45.99	56.22	66.25	85.82	104.91	123.6	160.2	195.8	239.3	282.0	324.0	365.3	446.6				

SUPER ROLLER CHAIN

MAXIMUM KILOWATT RATING OF SUPER 80

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket												
	10	25	50	100	150	200	250	300	350	400	500	600	700
	Lubrication System												
	A			B							C		
13	0.9	2.1	3.9	7.2	10.4	13.4	16.4	19.3	22.2	25.1	30.6	36.1	32.1
14	1.0	2.2	4.2	7.8	11.2	14.5	17.8	21.0	24.1	27.1	33.2	39.1	35.9
15	1.1	2.4	4.5	8.4	12.1	15.7	19.2	22.6	25.9	29.2	35.7	42.1	39.8
16	1.1	2.6	4.8	9.0	13.0	16.8	20.5	24.2	27.8	31.4	38.3	45.2	51.9
17	1.2	2.8	5.2	9.6	13.8	17.9	21.9	25.8	29.7	33.5	40.9	48.2	55.4
18	1.3	2.9	5.5	10.2	14.7	19.1	23.3	27.5	31.6	35.6	43.5	51.3	58.9
19	1.4	3.1	5.8	10.8	15.6	20.2	24.7	29.1	33.5	37.7	46.1	54.4	62.5
20	1.4	3.3	6.1	11.5	16.5	21.4	26.1	30.8	35.4	39.9	48.8	57.5	66.0
21	1.5	3.5	6.5	12.1	17.4	22.5	27.5	32.5	37.3	42.1	51.4	60.6	69.6
22	1.6	3.6	6.8	12.7	18.3	23.7	29.0	34.1	39.2	44.2	54.1	63.7	73.2
24	1.8	4.0	7.5	14.0	20.1	26.0	31.8	37.5	43.1	48.6	59.4	70.0	80.4
26	1.9	4.4	8.2	15.2	21.9	28.4	34.7	40.9	47.0	53.0	64.7	76.3	87.6
30	2.2	5.1	9.5	17.8	25.6	33.1	40.5	47.7	54.8	61.8	75.6	89.0	102.3
32	2.4	5.5	10.2	19.0	27.4	35.5	43.4	51.2	58.8	66.3	81.0	95.5	109.7
35	2.6	6.0	11.2	21.0	30.2	39.1	47.8	56.4	64.7	73.0	89.3	105.2	120.8
40	3.0	7.0	13.0	24.2	34.9	45.2	55.2	65.1	74.8	84.3	103.1	121.5	139.6

MAXIMUM KILOWATT RATING OF SUPER 100

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket												
	10	25	50	100	150	200	250	300	350	400	450	500	600
	Lubrication System												
	A			B							C		
13	1.5	3.5	6.5	12.1	17.5	22.7	27.7	32.7	37.5	42.3	47.0	51.7	48.4
14	1.7	3.8	7.1	13.2	19.0	24.6	30.0	35.4	40.6	45.8	51.0	56.0	54.0
15	1.8	4.1	7.6	14.2	20.4	26.5	32.3	38.1	43.8	49.4	54.9	60.4	59.9
16	1.9	4.4	8.1	15.2	21.9	28.4	34.7	40.9	46.9	52.9	58.9	64.7	76.3
17	2.0	4.7	8.7	16.2	23.4	30.3	37.0	43.6	50.1	56.5	62.8	69.1	81.4
18	2.2	5.0	9.3	17.3	24.9	32.2	39.4	46.4	53.3	60.1	66.8	73.5	86.6
19	2.3	5.3	9.8	18.3	26.4	34.2	41.8	49.2	56.5	63.7	70.9	77.9	91.8
20	2.4	5.6	10.4	19.3	27.9	36.1	44.1	52.0	59.7	67.4	74.9	82.4	97.0
21	2.6	5.9	10.9	20.4	29.4	38.1	46.5	54.8	63.0	71.0	79.0	86.8	102.3
22	2.7	6.2	11.5	21.4	30.9	40.0	48.9	57.6	66.2	74.7	83.0	91.3	107.6
24	3.0	6.8	12.6	23.6	33.9	44.0	53.7	63.3	72.7	82.0	91.2	100.3	118.2
26	3.2	7.4	13.8	25.7	37.0	47.9	58.6	69.0	79.3	89.4	99.4	109.3	128.8
30	3.8	8.6	16.1	30.0	43.2	55.9	68.4	80.6	92.6	104.4	116.1	127.6	150.4
32	4.0	9.2	17.2	32.1	46.3	60.0	73.3	86.4	99.2	111.9	124.4	136.8	161.2
35	4.5	10.2	19.0	35.4	51.0	66.1	80.8	95.2	109.3	123.3	137.1	150.7	177.6
40	5.1	11.7	21.9	40.9	58.9	76.3	93.3	109.9	126.3	142.4	158.3	174.1	205.1

MAXIMUM KILOWATT RATING OF SUPER 120

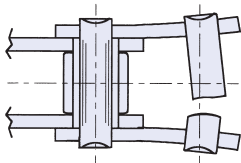
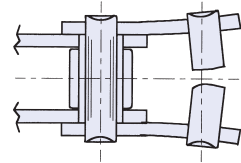
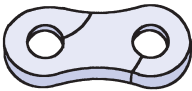
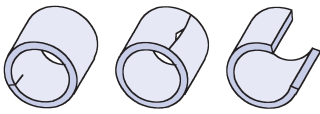
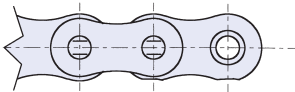
No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket												
	10	25	50	75	100	150	200	250	300	350	400	450	500
	Lubrication System												
	A			B							C		
13	2.4	5.4	10.1	14.5	18.8	27.1	35.1	42.9	50.5	58.0	65.5	72.8	80.0
14	2.6	5.8	10.9	15.7	20.4	29.3	38.0	46.5	54.7	62.9	70.9	78.8	86.7
15	2.8	6.3	11.8	16.9	21.9	31.6	40.9	50.0	59.0	67.7	76.4	84.9	93.4
16	3.0	6.8	12.6	18.2	23.5	33.9	43.9	53.7	63.2	72.6	81.9	91.1	100.1
17	3.2	7.2	13.5	19.4	25.1	36.2	46.9	57.3	67.5	77.6	87.5	97.2	106.9
18	3.4	7.7	14.3	20.6	26.7	38.5	49.9	60.9	71.8	82.5	93.0	103.4	113.7
19	3.6	8.1	15.2	21.9	28.3	40.8	52.8	64.6	76.1	87.5	98.6	109.6	120.6
20	3.8	8.6	16.0	23.1	29.9	43.1	55.9	68.3	80.5	92.4	104.2	115.9	127.4
21	4.0	9.1	16.9	24.4	31.6	45.4	58.9	72.0	84.8	97.4	109.9	122.2	134.3
22	4.2	9.5	17.8	25.6	33.2	47.8	61.9	75.7	89.2	102.5	115.5	128.5	141.2
24	4.6	10.5	19.5	28.1	36.4	52.5	68.0	83.1	98.0	112.5	126.9	141.1	155.2
26	5.0	11.4	21.3	30.7	39.7	57.2	74.2	90.7	106.8	122.7	138.4	153.9	169.2
30	5.8	13.3	24.9	35.8	46.4	66.8	86.6	105.8	124.7	143.2	161.5	179.6	197.4
32	6.3	14.3	26.6	38.4	49.7	71.6	92.8	113.4	133.7	153.6	173.2	192.5	211.7
35	6.9	15.7	29.4	42.3	54.8	78.9	102.2	125.0	147.2	169.2	190.8	212.1	233.2
40	8.0	18.2	33.9	48.8	63.3	91.2	118.1	144.4	170.1	195.4	220.4	245.0	269.4

MAXIMUM KILOWATT RATING OF SUPER 140

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket												
	10	25	50	100	150	200	250	300	350	400	450	500	550
	Lubrication System												
	A			B							C		
13	3.4	7.8	14.6	27.3	39.3	50.9	62.2	73.3	84.2	95.0	97.4	83.2	72.1
14	3.7	8.5	15.8	29.5	42.6	55.1	67.4	79.4	91.2	102.9	108.9	93.0	80.6
15	4.0	9.1	17.1	31.8	45.8	59.4	72.6	85.6	98.3	110.8	120.8	103.1	89.4
16	4.3	9.8	18.3	34.1	49.2	63.7	77.8	91.7	105.4	118.8	132.1	113.6	98.5
17	4.6	10.5	19.5	36.4	52.5	68.0	83.1	97.9	112.5	126.9	141.1	124.4	107.8
18	4.9	11.1	20.8	38.8	55.8	72.3	88.4	104.2	119.7	135.0	150.1	135.5	117.5
19	5.2	11.8	22.0	41.1	59.2	76.7	93.7	110.4	126.9	143.1	159.1	147.0	127.4
20	5.5	12.5	23.3	43.4	62.6	81.0	99.1	116.7	134.1	151.2	168.1	158.7	137.6
21	5.8	13.1	24.5	45.8	65.9	85.4	104.4	123.0	141.4	159.4	177.2	170.8	148.0
22	6.1	13.8	25.8	48.1	69.3	89.8	109.8	129.4	148.6	167.6	186.4	183.1	158.7
24	6.7	15.2	28.3	52.9	76.2	98.7	120.6	142.1	163.3	184.1	204.7	208.7	180.9
26	7.3	16.6	30.9	57.7	83.0	107.6	131.5	155.0	178.0	200.8	223.2	235.3	204.0
30	8.5	19.3	36.1	67.3	96.9	125.6	153.5	180.9	207.8	234.3	260.5	286.4	252.8
32	9.1	20.7	38.7	72.1	103.9	134.6	164.6	193.9	222.8	251.2	279.3	307.1	278.5
35	10.0	22.8	42.6	79.5	114.5	148.3	181.3	213.6	245.4	276.8	307.7	338.3	318.5
40	11.6	26.4	49.2	91.8	132.2	171.3	209.4	246.8	283.5	319.7	355.4	390.8	425.8

MAXIMUM KILOWATT RATING OF SUPER 160

No. of Teeth Small Splt.	Maximum R.P.M.-Small Sprocket													
	10	15	25	40	50	80	100	150	200	250	300	350	400	
	Lubrication System													
	A		B					C						
13	4.7	6.8	10.8	16.5	20.2	30.8	37.7	54.2	70.3	85.9	101.2	116.3	131.1	
14	5.1	7.4	11.7	17.9	21.9	33.4	40.8	58.8	76.1	93.1	109.7	126.0	142.1	
15	5.5	8.0	12.6	19.3	23.6	36.0	44.0	63.3	82.0	100.3	118.1	135.7	153.0	
16	5.9	8.5	13.5	20.7	25.3	38.5	47.1	67.9	87.9	107.5	126.7	145.5	164.1	
17	6.3	9.1	14.4	22.1	27.0	41.2	50.3	72.5	93.9	114.8	135.2	155.4	175.2	
18	6.7	9.7	15.4	23.5	28.7	43.8	53.5	77.1	99.9	122.1	143.8	165.3	186.4	
19	7.1	10.3	16.3	24.9	30.4	46.4	56.7	81.7	105.9	129.4	152.5	175.2	197.6	
20	7.5	10.9	17.2	26.3	32.1	49.1	60.0	86.4	111.9	136.8	161.2	185.2	208.8	
21	8.0	11.5	18.2	27.7	33.9	51.7	63.2	91.0	118.0	144.2	169.9	195.2	220.1	
22	8.4	12.1	19.1	29.1	35.6	54.4	66.5	95.7	124.0	151.6	178.7	205.2	231.5	
24	9.2	13.2	21.0	32.0	39.1	59.7	73.0	105.2	136.3	166.6	196.3	225.5	254.3	
26	10.0	14.4	22.9	34.9	42.7	65.1	79.6	114.7	148.6	181.6	214.0	245.8	277.2	
30	11.7	16.8	26.7	40.7	49.8	76.0	92.9	133.8	173.4	211.9	249.7	286.9	323.5	
32	12.5	18.1	28.6	43.7	53.4	81.5	99.6	143.5	185.9	227.2	267.8	307.6	346.9	
35	13.8	19.9	31.5	48.1	58.8	89.8	109.7	158.1	204.8	250.3	295.0	338.9	382.2	
40	16.0	23.0	36.4	55.6	67.9	103.7	126.8	182.6	236.6	289.2	340.7	391.4	441.4	

Problem	Possible Causes of Problem	Suggested Remedy
 Broken Pins	• Extreme overload	• Inspect the drive to determine the cause of high load • Redesign drive using a higher capacity chain
 Broken Pins(center)	• Loading is greater than pins dynamic capacity	• Inspect the drive to determine the cause of high load • Redesign drive using a higher capacity chain
 Broken Offset Link Pins	• Overload	• One-pitch offsetlinks are not recommended • Redesign drive using a higher capacity chain
 Fatigue Fracture	• Loading is greater than chain's dynamic capacity	• Inspect the drive to determine the cause of high load • Redesign drive using a higher capacity chain
 Cracking	• Stress corrosion cracking	• Protect the chain from corrosion • Install anti-corrosive chains
 Broken Rollers	• Foreign material between chain and sprocket tooth • Fatigue failure	• Redesign chain speed and load • Shield drive from foreign matter
 Worn Plates	• Bottom of plates worn due to rubbing on guides.	• Chain should be replaced when wear becomes over 5% of the plates height

Selection of Roller Chain

It is important to select the most suitable roller chains and sprockets for the job by careful study of power transmission requirements.

The following basic factors should be considered when selecting roller chains for transmission needs through there may be other factors.

ATMOSPHERIC CONSIDERATION

The input power ratings appearing on the pages of 80 to 84, have been worked out under the following conditions.

- 1) To be driven in normal atmosphere of -10°F to 60°C free from ill effect of abrasive dust, corrosive gas, high humidity etc.
- 2) Sprockets should be aligned and mounted on parallel horizontal shafts.
- 3) Recommended method of lubrication and recommended kind of lubricant should be used.
- 4) Should be driven at even load or small load variations.

Power rating of multiple strand chain is not simply calculable by multiplying the power rating of one strand by the number of strand because of uneven load distribution onto each strand. So, multiple strand factor should be used for expected service life.

A service life of 15,000 hrs, can be expected when chain length is 100 pitches and the above conditions are met.

POINT IN SELECTION ROLLER CHAIN AND SPROCKET

The following factors must be taken into consideration in selecting proper chain drive, depending on chain speed-normal or low speed. Also correction factors should be used, fully grasping the conditions of use.

- | | |
|--|---|
| a) Driven machine | e) RPM and diameter of high speed shaft[n1:rpm] |
| b) Type of load: smooth light or heavy shock | f) RPM and diameter of low speed shaft[n2:rpm] |
| c) Source of power | g) Center distance of shaft [m] |
| d) kW to be transmitted [kW0:kW] | h) Chain-driving speed [S:m/min] |

SELECTION PROCEDURE ACCORDING TO CHAIN SPEED

IN CASE OF NORMAL SPEED

$S=50\sim 250\text{m/min}$

To obtain corrected power kW_1 multiply kW_0 by corrected factor f_1 applied according to condition of use

$$kW_1 = kW_0 \cdot f_1 \\ = kW_0 \cdot f_1 \cdot f_2$$

To obtain chain and high-speed sprocket teeth N_1 use roller chain quick selection chart and power rating chart according to RPM of high speed shaft and corrected power kW_1

N_1

Determine low speed sprocket teeth N_2 from speed ratio R

$$R = n_1/n_2 \\ N_2 = R \cdot N_1$$

See if each sprocket shaft diameter and mounting space satisfy specifications of machine

* Check

Make special sprocket

Obtain corrected power kW_1 of single strand by referring to multiple strand factor f_2

OK

Finally determined

Economical sprockets for general industrial use are recommended except when special sprockets are made due to unavoidable circumstances.

IN CASE OF LOW SPEED

$S=\text{Less than } 50\text{m/min.}$

Divided into two cases depending on chain driving conditions

- 1) For low speed drive with few stops and starts, make the chain selection in a way to satisfy the following formula:

$$T \times f_1 \times f_3 \leq \text{Max. allowable chain load.}$$

- 2) For low speed drive with frequent stops and starts.

$$T \times f_1 \times f_3 \times f_4 \leq \text{Ave. ultimate strength.}$$

Select the chain by substituting the values of chain speed and max working load into formulas (1)&(2), after chain selected tentatively in the general way.

$N_1[-]$ = Number of teeth on small sprocket.

$N_2[-]$ = Number of teeth on large sprocket.

P [mm] = Chain pitch

S [m/min] = Chain speed

$$= N_1 \cdot P \cdot$$

$n_1/1000$

$$T \text{ [kN]} = \text{Max. working load.} \\ = 60 \times kW_0 / S$$

f_2 : MULTI-STRAND FACTOR

Number of roller chain strands	f_2
2	1.7
3	2.5
4	3.3
5	3.9
6	4.6
8	6.2
10	7.5