TECHNICAL INFORMATION

FORMULA TO CALCULATE CHAIN:

$$\frac{CD \times 2}{.375} + \frac{TS + BS}{2} = \text{Pitch}$$

CD = Center Distance (Drive Shaft to Jackshaft Centers)
TS = Top Sprocket
BS = Bottom Sprocket

Round number up to even number for proper pitch

HELIX ANGLES

A few different types of helixes are available. A Straight angle helix has the same angle start to finish, the Progressive angle helix is a continuous change from the starting angle to the finish angle and the Stepped helix has a short duration starting angle radiuses into a straight angle. An example of the Stepped helix is the Polaris "R" helix or the Dalton "PR" model.

Progressive and Stepped helixes always start with the first degree and finish with the second. The steeper the angle the harder the engine will pull. RPM change is usually about 100 RPM per degree change. As an example changing from a 38 degree to 40 degree will lower RPM about 200.

Team and Arctic helixes have much higher angles due to the helix being a larger diameter.

CHAINCASE CENTER DISTANCES

Arctic Cat	CD (inches)	Polaris	CD (inches)	Ski-Doo	CD (inches)	Yamaha	CD (inches)
All Models	7.50	1996 & Older	6.625	F & S Chassis (180mm)	7.09	All Models	7.00
Proclimb/Procross	10.160	1997-2001 Gen II	7.05	CK3 Chassis & '03 REV	6.85	SR Viper/Arctic	10.16
2017+ Drop Case	11.375	All Edge & 440/600 IQR	7.92	ZX & REV '04-05	7.48		
Note: The tensioner in the new AC chassis may not allow all combinations.		2005 Fusion 900	11.35	RT (175mm)	6.90		
		2006-07 All Fusion & RMK	8.37	RT Mach	7.97		
		Pro, Rush & 13 up Indy	7.53	RT Summit	9.19		
		Axys, XCR, Switchback & Assault	7.063	REV XP, XS, XM, XR	12.85		
		RMK Axys 3"	7.764	Gen 4	14.92		

FORMULA TO CALCULATE MPH:

RPM ÷ GR x SC ÷ 12 x 60 ÷ 5280 = MPH @ 1:1 clutch ratio
GR = gear ratio (divide top sprocket into bottom sprocket)
SC = sprocket circumference (number of teeth x track pitch)

7T..........................2.52" Pitch .... 17.64 SC
8T..........................2.52" Pitch .... 20.16 SC
9T..........................2.52" Pitch (most OEM) .... 22.68 SC
10T........................2.52" Pitch .... 25.20 SC

7T ....2.86" Pitch .... 20.02 SC
8T..........................2.86" Pitch .... 22.88 SC
7T..........................3.0" Pitch .... 21.00 SC
8T..........................3.0" Pitch .... 24.00 SC
7T Convolute………3.29 Pitch…………………………….23.03 SC

QUICK CHANGE DRIVE CLUTCH ADJUSTMENT

Spacer Shims under spider adjust the belt to sheave clearance. Remember to re-adjust after changing engagement.

Outer Adjusting Nut controls engagement. In is down, out is up. (locking screw must be very tight after adjusting)

When lowering engagement turn dial in. A quarter turn is an approximate 150 RPM change depending on clutch weight used. A quarter turn of the adjusting nut equals a .010" shim change. Turning the dial in pushes the movable sheave closer to the belt so add shim to maintain belt clearance. Do the opposite when raising engagement.

ENGINE/JACKSHAFT CENTERS

(On special build machines be sure to mount engine to match drive belt availability)

10.200" Centers … 43 5/8" Approximate Belt Length
10.500" Centers … 44 1/8" Approximate Belt Length
10.563" Centers … 44 1/2" Approximate Belt Length
10.625" Centers … 45" Approximate Belt Length
11.375" Centers … 45 5/8" Approximate Belt Length
11.500" Centers … 46 5/8" Approximate Belt Length
12.000" Centers … 47 1/4" Approximate Belt Length
12.200" Centers … 47 3/4" Approximate Belt Length
12.500" Centers … 48 3/8" Approximate Belt Length
14.220" Centers … 51 7/8" Approximate Belt Length

Note Belt length will vary depending on outer belt cog

SKI CARBIDE PLACEMENT

IFS CHAMP SKI
Standard spindle mounting location is 6 1/2" from rear of ski. Carbide placement should be centered on ski/spindle bolt. Moving carbide ahead makes it more aggressive … too much will result in a bad ending. Moving carbide rearward will make it easier to drive in a straight line but take more effort to turn.

LEAF SPRING SKI
Normal carbide placement is 1" ahead of ski/spindle bolt. Using a square to find that location on ski, place center of carbide 1" ahead of that. Moving carbide ahead will result in more bite but will be more aggressive to drive. Adjust to accommodate different driving styles.

Note Always run toe out, 1/16" to 1/8" works well.