Frequently asked Technical Questions at the track

Q: What gearing should I have to race with on my track bike?

A: Ultimately, the beauty of track racing is that you can show up with a gear on your bike, warm up, race, cool down and go home without thinking about your gear! Simplicity. One gear, go fast, turn left!

Having said that, the more one rides, the more we search for that "right gear". In order to find that we need, it is good to have several gear combinations available to us at all times.

Other factors also determine what gear to use...

1. **The Race Type** that we're riding - longer events with a lot of speed changes make a smaller gear the wise choice.

2. **The Steepness & Distance of the track** (200m lap, 48° banking at Burnaby or 400m 23° Marymoor) - steeper tracks need smaller gears

3. **The Weather** conditions - windy & cold are much easier to tackle in a smaller gear (if you are outside).

4. **(The BIG Event)** Nationals will probably require a bigger gear than pre-season training races.


Shimano Dura-Ace Track

Component Groups

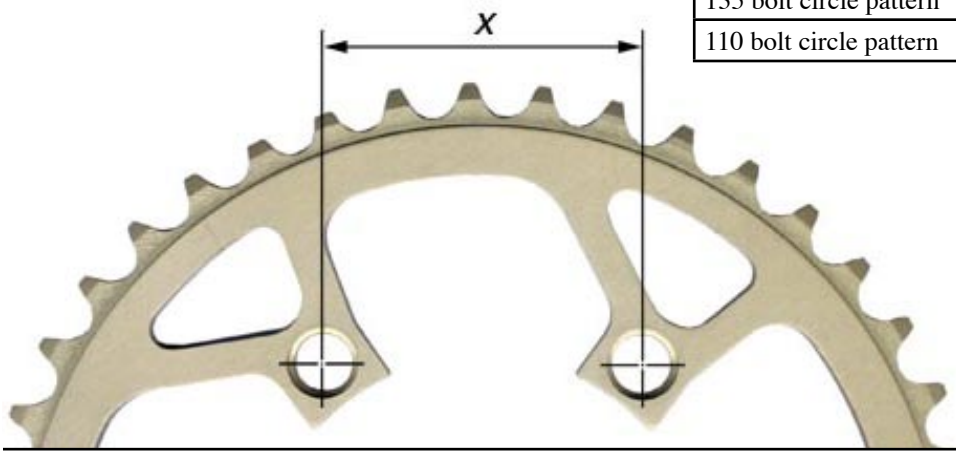
A group is a set of parts/components for one bicycle from (usually) a single manufacturer. The practice of selling parts as a group (or "gruppo" in Italian) probably originated with Campagnolo in the 1960's.

A ***TRACK*** group would normally include (as a minimum) the following:
• Hubs • Bottom bracket • Cranks • Chainrings • Chainring bolts • Cogs
• Lock ring • Pedals • Headset

Manufacturers of complete track groups include Campagnolo, Miche, Shimano, Sugino. There are many more that make parts but not whole groups.

Chainring
Bolt Circle Diameter (B.C.D.)

144 bolt circle pattern	**84.6** mm., hole center to hole center
151 bolt circle pattern	88.8 mm., hole center to hole center
130 bolt circle pattern	76.4 mm., hole center to hole center
135 bolt circle pattern	79.4 mm., hole center to hole center
110 bolt circle pattern	64.7 mm., hole center to hole center



144 BCD = 84.6 x 1.7

Measuring BCD:
This 144 mm BCD ring measures 84.6 mm center-to-center.

Multiplying this dimension by 1.7 will give you the actual BCD for a 5 bolt chainring.

Use 1.4 for 4 bolt chainrings

B.C.D. is the diameter of the circle formed by the attaching chain ring bolts. The "standard" track chainring is 144 mm diameter. There are some others, but they are not as common and with far less variety.

Determining bolt circle patterns - Unsure of what bolt circle pattern your crank (or chainring) has? It's hard to get an accurate measurement of the diameter of the circular pattern the fasteners trace (also frequently referred to as "P.C.D.", [pitch center diameter]). Instead, measure the distance (in a straight line as shown above) between the centers of two adjacent chainring bolts. The table below gives the BCD for popular track crank models & brands.

Bolt circle patterns (shown in mm.)	
Sugino 75	144
Sugino Grand Mighty	144
Campagnolo Record (current)	144
Campagnolo 4141 Super Record Track & 1051 Record Track	144
Campagnolo Record (pre-1972 or so)	151
Shimano Dura-Ace (7710 series, with splined spindle joint)	144
Shimano Dura-Ace (7600 series)	144
Shimano Dura-Ace EX	151
Shimano Dura-Ace 10 Pitch	122
Gipiemme	144
Miche Primato Pista	135
Miche Primato Pista "Advantage"	144
Suntour Superbe Pro	144
Stronglight Speedlite Track	130
Specialites T.A. "Compet" Piste	144
Specialites T.A. Alize Piste and new style Alize Piste	130
FSA Vigorelli Track	144
FSA Carbon Track	144
TRUVATIV Omnium Track	144
Blackspire Mono Veloce Fixie	130
Blackspire Track	144

What's in your Gear Bag?

A common setup for an elite level SPRINT Rider gear bag might contain this:

- Chainrings (1/8th inch or "track width"): 45t, 46t, 47t, 48t, 49t, 50t, 51t, 52t
- Cogs: 12t, 13t, 14t, 15t, 16t
- Chain whip
- 3 x chains (2 pre cut to correct length and one spare)
- Chain tool
- 2 x 15mm wrench (peanut butter wrench)
- Allen wrenches, separate 4mm, 5mm, 6mm, 8mm
- 1 x spare chainring bolt set (usually 5)
- Related headset & bottom bracket tools you need
- Pedal wrench
- Gear Chart (sequential & grid)
- Replacement parts for your bike - i.e. extra toe straps, toe clips, shoe cleats & screws
- Special Disc Wheel chuck for air pump

A Sprinter with a gear bags for everything from 400m, 333m, 268m or 200m tracks

A common setup for an elite level ENDURANCE Rider gear bag might contain this:

- Chainrings (3/32th inch or "road width"): 46t, 47t, 48t, 49t, 50t, 51t, 52t, 53t, 54t
- Cogs: 2 x 14t, 15t, 16t
- 3 x chains: (2 pre cut and one spare)
- 3 x spare connector chain links
- Chainwhip
- Chain tool
- 2 x 15mm wrench
- Related headset & bottom bracket tools you need
- Pedal wrench
- Allen wrenches, separate 4mm, 5mm, 6mm, 8mm
- 1 x spare chainring bolt set (usually 5)
- Gear Chart (sequential & grid)
- Replacement parts for your bike - shoe cleats & screws
- Special Disc Wheel chuck for air pump

• Makino Pro Super Tool

(www.businesscycles.com) In the direct translation from the Japanese, the name for this pitstop-in-your-pocket might seem a little over the top, but after you see how many trackside functions are packed into this single tool, you'll call it "super", too. Designed by one of Japan's premier framebuilders.

Mechanics for Team Japan have their pit all organized & ready for action at a recent World Cup meeting.

Here's some $$. Aussie National Team gearing. Notice the recycled disc wheel part?

As FixedGearFever.com forum users pointed out, that's a Gear Bag set-up well over $600 in gearing alone (at brand new, retail prices) and you can't even ride your gear bag!

It's suggested that you talk to other local racers and coaches. Ask them what gearing they ride. Probably a 48x14, a 50x15, a 51x15... in USA (outdoor tracks). You'll find there is a common gear around the track. Start with that or something very close. It's also nice to have another cog a tooth or two smaller for warm up and cool down routines. Ultimately, you can get by with one.... but two gears does give you a little extra option!

Now, you tried out the basic set up, you want a little more....
You have 2 basic choices:
1 - change a Chainring or
2 - change a rear wheel Cog

A cog is a big change (at roughly 6" per tooth). A chainring is a small change (2" assuming 1 tooth change). You can further fine tune your gear by changing both gears. Check out a Gear Chart for more options.

A great option is borrow a cog or ring from a buddy and try out another gear. See what works for you. Buy a cog this month, a ring next month and slowly but surely you will build your own ultimate track sack.

There can be great deals on used equipment on places such as e-bay. Search by keywords like "keirin," "fixed gear," and "pista."

NEW Tools from Pedro's ??

Pedro's Trixie Tool

Although they wouldn't give up to much information on new products, they did show us the new Trixie tool. This small item is packed with features:
• Lockring tool • Pin hole to make your own chain whip *(going with the green theme, they want you to use an old piece of chain to make your chain whip)* • Spoke wrench • 15mm wrench • 5mm allen wrench • 3 sizes of hex style wrenches • Bottle opener (a must!)

Pedro's Vise Whip

A Vise-Grip-type handle attached to a pair of jaws with pins to engage cog teeth allow the user to hold the cog tightly.

Other common Tools

Chain Whip

Essentially a metal bar with a short length of bicycle chain attached to it, somewhat resembling a whip. This is used to wrap around & unscrew threaded cogs from the rear wheel. The longer the handle, the better the leverage one can use to remove a cog.

If you don't have a chain whip, or if you are trying to remova a particularly stubborn threaded sprocket, you can substitute a short length of chain held in a vise clamp.

Un Fixie Cog Remover/ Hyper Handle

From the J. A. Stein Company. This tool will remove 15t through 20t track cogs. It can be locked on to the hub for really tough cogs. It's long enough to give you plenty of leverage, but it will still fit in a large tool box.

Peanut-Butter Wrench

A single-ended socket wrench with a flat handle, particularly the Campagnolo 15 mm wrench (#769) made for tightening crank fixing bolts and track bolts. Other tool brands have similar.

The name derives from the fact that racers on a tight budget would often have to make due with peanut-butter sandwiches while on the road, and in the absence of kitchen facilities, they would use the handle of this wrench to spread the peanut butter on their bread.

Track Hub (from www.sheldonbrown.com)

A fixed-gear hub. Track hubs have a stepped thread, with a standard 1.37" x 24 tpi thread for the sprocket, and a smaller, left-hand thread for a lockring. The idea is that if the sprocket should start to unscrew, it will rub against the lockring, which will tend to tighten the left-hand thread, preventing the sprocket from unscrewing. With the sprocket locked to the hub, the rider will still have the ability to be in control. If the cog were to unscrew from the hub when riding, the rider loses the ability to slow/stop or speed up.

Traveling (Sandra Sutherland photo from book: "No Brakes! Bicycle Track Racing in the US")

Nelson Vails, 1984 USA Olympic Silver medalist in Match Sprint pictured left, from his days of traveling to Japan for Keirin racing.

"International professional racing is like an acting job, you get work – you work. If you don't work when they call you to work then you probably won't work the next time. That's why I'm consistent on my program."

117

This photo illustrates some great ideas on packing a bike for travel. Notice the SunTour tire protectors and the leather covers for the hub axles. Even the fork has a vinyl cover to protect a pretty paint job from scratches.

Travel with a track bike is a little easier than road bikes, in some resepcts. No brake cables to connect.. etc. Follow the lead from "the Cheetah" and travel wisely, by packing your bike with care. Some of these special travel items can be found on e-bay. Just remember too much stuff is excess weight that is often charged extra by most airlines.