Frictionless Strokes

Frictionless rubber and reverse spin

Classical frictionless rubber such as Dr Neubauer Super Block or Hallmark Super Special has two unusual properties, the pip rubber is hard and extremely smooth, or 'frictionless'. The hard pip rubber prevents the ball generating any friction by bending the pips and their 'frictionless' smoothness prevents the ball from gripping. The hardness of the frictionless pips is not often appreciated but it minimizes the amount of rubber in contact with the ball because if the ball can bend the pips there is an increase in the surface area of rubber in contact with the ball and hence more 'friction'. The overall effect is the incoming spin from an opponents stroke does not 'stick' against the rubber as it would normally, but 'skids' across the surface of the rubber, having the effect of mirroring the spin back to the opponent. 'Mirroring' spin is technically known as reverse spin, although the mechanism of reverse spin in soft pips can be different to frictionless rubber. Thus if the opponent topspins the ball, the return spin is also topspin using regular inverted rubber, however using reverse rubber the return spin is backspin. Likewise, if the opponent chops the ball, the return spin is also backspin using regular 'inverted' rubber, whilst using reverse rubber the return spin is topspin. [Technically a mirror doesn't truly mirror an object but laterally inverts it but you get the gist of the metaphor]

Summary of stroke definitions

Punch block - this uses an open faced blade to drive into the incoming ball resulting in a fast return. It is particularly effective against backspin and creates a faster sink ball against topspin. The ball is placed with the last 6" of the table.
Drop shot - this uses an open faced blade and cushions the incoming (usually topspin) ball to return the ball just over the net. The closer and lower to the net the return ball placement the better the stroke.
Sideways swipe - this can use an open faced blade or blade angled slightly upwards and slashes against the incoming ball either left to right or right to left. It is a very effective stroke for both soft and frictionless pip players. The ball is placed within the last 6" of the table.
Attack - really a vertical block, with little forward movement using an open faced blade and is unique to frictionless.
Chop block - a classic table tennis stroke for pip and inverted players, an open faced blade is used and brought down sharply over a short distance immediately before contact.
Block - simple just hold the bat still!
Lift - this is a loop based stroke against backspin but the spin from the resulting stroke does not contain topspin - it is either backspin or else no spin. The term originates from its ability to 'lift the backspin back to the opponent'.

Summary of return ball spin definitions

Reverse spin - already described the spin is mirrored back to the opponent using pip rubber.
Inverted spin - the spin is inverted back to the opponent (opposite direction) using inverted (smooth and sticky) rubber.
Sink ball - this is a confusing term but results from reverse spinning a topspin ball. It is in any other language the same backspin as a chop but without executing a chopping stroke and can result from a drop shot, punch block, sideways swipe etc... basically any stroke that doesn't require a chopping motion.
Cutter (informally called Speed play turn) - this is a term that we agreed upon because there is no equivalent in table tennis. It is reverse spun topspin, i.e. produced using frictionless rubber against incoming backspin and the resulting topspin return will often sharply deviate (cut) on bouncing to the left or right depending on the angle or return against the incoming stroke (described below). In this sense it has a similar effect to 'corkscrew'.
Corkscrew - this is a spin purely for inverted rubber, the stroke is played as a topspin stroke but the blade angled to angled left or right producing a ball that on bouncing will sharply deviate left or right depending on which side the ball was hit. It is different from a sidespin loop (not described).
Wobble - a ball carrying no spin which can exhibit a strange flight path trajectory.
Deviating effects - This is an informal non-technical term sometimes used to describe the strange flight path trajectories that pip rubber can produce. The term should be avoided because different flight paths can have very different underlying causes.

Strategy

Frictionless pip play involves large variations in stroke execution to achieve reverse spin variation. In other words the pip player can change the spin on the ball but only by using clear differences in the strokes. In sharp contrast soft pip players can achieve large differences in spin using the same stroke.

The advantage of frictionless pips is the large amount of reverse spin produced so almost every ball is carrying some spin. Soft pips in contrast particularly with sponge will often return a 'no spin' ball which if identified is vulnerable to attack by the opponent.

Key strokes

The two 'bread and butter' frictionless pip strokes are drop shot for defensive players and the 'punch block' for

attacking players. A frictionless pip player will not rigidly stick to a single stroke, all drop shot based pip players will use a punch block and likewise all 'punch block' based player will use 'drop shots'. In fact some players will not have a preference to either stroke and play an all-round game.

Drop shot and frictionless rubber

Drop shot is one of the most powerful strokes in defensive table tennis. Drop shot cannot deceive an opponent simply but when executed precisely it forces the offensive opponent into a defensive stroke, or else they seriously risk losing the point. Secondly this defensive return by the opponent will carry backspin that the frictionless pip player can readily attack. The mechanics of drop shot are as follows:
1. An offensive player will loop the ball, resulting in the ball carrying heavy topspin.
2. The frictionless pip player will return the ball very short and just over the net, resulting in a ball carrying heavy backspin, which low, and close to the net.
3. The ball is now too low to attack, will double bounce on the table and more importantly carries heavy backspin.
The opponent must overcome the backspin on the ball otherwise it will hit the net and they will lose the point. However, they can not 'flick' the ball (use wrist movement to attack a ball that will double bounce) because it is too low, nor can they wait till the ball drops off the edge of the table where they could generate sufficient top spin to over the backspin because it will double bounce. At this point the only realistic option for the opponent is to halt the attack and by pushing the ball using inverted rubber returning an attackable back spun ball.

A second application of drop shot is against backspin. Again the return is again low and close to the net, the ball is now however carrying topspin. An unsuspecting opponent will try and push under the ball, which would be a standard response if their initial stroke by the inverted player carried topspin. Now however the ball will kindly 'pop-up' for the frictionless pip player, who can smash it. However, a more experienced opponent using inverted rubber can aggressively push drop shot against backspin stroke with their blade angled downwards and use the topspin the frictionless player produced and add their own to land the ball at reasonable speed (for a push). A classical defender on the other hand could reverse spin the topspin drop shot. Generally speaking frictionless 'drop shots' carrying topspin allow the opponent more options and will not stay as close to the net, but are very useful stroke nevertheless, which can be readily used for example as a return of serve.

Drop shot and soft pips

The question is why can't soft pips perform the same stroke? Well off course they can but it is no where near as effective because in summary there are two components to the stroke 1) exact placement and 2) strong back spin and without either the stroke doesn't work well. Firstly soft pips are generally faster so it harder to place the ball just over the net which will then double bounce and secondly soft pip rubber can not generate as much reverse spin, so the back spin is not sufficient to cause real problems. A skilled chopper using soft pips could reproduce the overall effect of drop shot using a chopping stroke, but it is a difficult stroke, whilst drop shot is comparatively straight forward.

Punch block and frictionless rubber against topspin

The punch block is a common stroke for all frictionless pip players and is very effective against medium to slow topspin, such as a serve, resulting in a medium to fast 'long' return which carries backspin. This is the choice return of an attacking frictionless player. The power of the stroke is the unusual spin, because virtually all other medium to fast strokes carry either no spin or, in the majority of cases, topspin. An unsuspecting opponent will often hit a punch block into the net and the faster pace of the ball minimizes their reaction time.

Placement

The stroke is mostly played BH to BH and varied with BH to FH aiming at the corners of the table or BH to 'cross-over point' (right hand elbow for against a right-handed player). The ball should drop within the last 6' (ideally) of the table to encourage an opponent who is close to the table perform a return stroke straight off the bounce and thereby maximizing the chance of a very short return.

Punch block and soft pips

The stroke is by no means restricted to frictionless rubber but the key strength is the amount of backspin the ball will carry. The key weakness of the frictionless punch block is the difficulty in generating spin variation.

Stylized punch blocks

A 'slow' slightly flight punch block against medium to slow topspin can result in very visible 'disturbing effects' resulting from a sink ball (or a cutter). This is more of a stylized stroke though which could be used to warn your opponent you are using frictionless rubber and depends on the amount of spin your opponent generates, the amount of reverse spin the frictionless rubber can generate and the thickness of sponge that is used.

In summary mechanics of this stroke are simply:

1. A medium to slow topspin stroke by the opponent is driven at the pips.
2. The ball is hit firmly for example cross court and the ball lands within the last 6' of the opponents table. The ball is now carrying reasonable backspin.
3. The opponent must now deal with a medium fast, full length ball which is often targeted at their BH. If the opponent has inverted rubber on their BH they must be careful to topspin over the backspin ball.

Execution

The major issue of a punch block against topspin is the timing of stroke and is split between two key variations either immediately after the bounce or when the ball reaches maximum height after bouncing. The angle of the bat must be slightly upwards when taking the ball immediately off the bounce and against topspin the timing of the stroke enables maximum reverse spin.

The Punch Block against backspin

The punch block is also a very effective attack against backspin and causes heavy 'deviating effects' namely a 'cutter' described above. The stroke works well and can be hit pretty hard because the reverse spin topspin (from your opponents chop) will bend the ball over the net in the same way that a looper uses topspin. Thus ball can be bit much harder without it flying off the edge of the table. Again we use the term cutter or 'cut' to describe the opposite spin to a sink ball. This however is not what confuses an opponent it is the bounce deviation they will get caught out by.

Basically the bounce deviation of a cutter is nothing more than a 'corkscrew' (where a top-spun ball deviates sharply in direction on bouncing) however there is no apparent indication of the direction of the 'corkscrew' from the angle of the blade for frictionless rubber. A loop based 'corkscrew' is easy to spot from an inverted rubber because of the extreme angle of the blade must be held. The 'cutter' against backspin simply alter the angle of the incoming stroke, for example if a backspin stroke is coming straight down the middle of the table and the frictionless pip player punch blocks to the right hand corner of the opponents table the ball now carries topspin and sidespin equal to the deviation from angle of the incoming stroke. Thus in this example the ball will 'corkscrew' (change direction of its path) to the left on bouncing. Alternatively if the ball had been punch blocked to the left hand corner it would 'corkscrew' to the right as the frictionless pip player is looking at it. Finally if the ball is back-spun cross-court, for example BH to FH for a right-handed players and the frictionless player punch blocks 'down the line' (to the opponents FH) the ball will sharply 'cut' to the right, this being the maximum difference in angle that can be generated between the incoming ball and the return. The more backspin on the ball the bigger the sudden 'kick' on the return bounce. If this sounds confusing then try heavily backspinning against a frictionless pip player and find out just how much more confusing it can be to play against!

The Weakness and the Golden Rule

The key weakness of frictionless rubber is the inability to readily change the spin on the ball in sharp contrast to soft pip rubber. A consequence of this weakness of frictionless pip rubber is the need for the player to stay close to the table. The power the rubber confers is accurate ball placement and sudden changes in speed combined with large amounts of reverse spin. The strokes described here are played either very short and slow, or (relatively) fast and very close to the edge of the opponents table. Once a frictionless pip player is pushed away from the table they have greater difficulty in placing the ball accurately and varying the speed of the return. At this point the reverse spin becomes predictable and the frictionless pip player is readily out played if their opponent repeatedly loops. The only strategy the frictionless pip player has in this scenario is if their reverse spin overcomes their opponent’s topspin, which doesn't happen against more experienced opponents.

Remaining strokes

The general philosophy in frictionless pip play is to achieve spin variation using exaggerated variation in strokes played results in a the following strokes all having their part to play in any long pip game, viz. sidespin swipe, chop block, 'attack' and 'lift'. Again the ball is taken at the top of the bounce using an open-faced bat (Dr Neubauer style). Drop shot and 'punch block' can be played just off, or immediately after, the bounce with just enough angle in the bat to get the ball over the net, although the sidespin 'swipe' can be played like this the other strokes need to be played off the edge of the table.

Sideways swipe

The sideways swipe is in effect a punch block played by swiping across the face of the ball using a left to right motion for a right-handed player on the BH. The ball in this case will arc from right to left, however on the bounce instead of continuing along this path it will ‘cut’ (against backspin) in the opposite direction to what is expected. It is a little like the drift and turn that a slow bowler gets in finger spin deliveries. In essence although the ball is arcing in the direction of the 'swipe' it retains and reverses the original incoming spin. The 'arc' is really a feint to make the return look like a sidespin loop style return. The stroke is usually played against backspin but will also work against topspin and can be played both on the FH and the BH. It is a very versatile stroke and is easy to perform and place within the last 6" of the opponents table.

Chop block

The chop block is a vertical chop played close to the table against topspin. It is easy to perform once you get the hang of making contact with the ball using a vertical chop motion and is used to mix the backspin on the return stroke as part of the general frictionless philosophy. An attacking frictionless player will rarely use this stroke.

Attack

Attack this is a vertical chop block played with an upwards moving stroke played against topspin close to the table. There is not much power in the return and should be used reasonably infrequently but is an easy stroke to perform and mixes the play well.

Lift

Lift this is a loop style stroke played against backspin. Lift can be performed with inverted rubber and is meant to reassemble a topspin loop but in fact carries either no spin or backspin. The concept is that you are 'lifting the opponents backspin' back to them. It doesn't produce the same spin using frictionless rubber and is simply a case of getting the ball back to your opponent using a loop style stroke - which is difficult because the ball will tend to slip off the bottom of the bat. With inverted rubber, or soft pips, a lift is about altering the angle of the blade and hitting into the backspin ball rather than brush stoking it back. The upshot is a ball which would be hit into the net if the spin was misread. It is a very strong stroke using an attacking soft pip style, but it is a weak stroke for frictionless rubber particularly as the ball will be moving at medium pace despite being hit very hard and will bounce high (frictionless pip rubber is slow). This stroke may work with attacking frictionless rubber such as Dr Neubauer Monster and more or less works using TSP Curl Combi. However even here it is a stroke that should be used sparingly and is weakened by the difficulties in shifting topspin on the return using frictionless rubber.

Wobbles

I have already described the 'cutter' or to a lesser extent a sink ball where the ball can have one return path but be spinning in a different direction and this produces a strange trajectory across the table, which inexperienced opponents find unsettling. The second area of 'deviating effects' is called 'wobble' but is really a stroke that soft pip players can produce, although the old TSP Curl Bamboo is one frictionless rubber that could do this. Soft pips are able to grip the incoming ball and remove all the spin from it, particular by just blocking the ball. The return ball can have difficulty retaining its flight path trajectory and can deviate to the left or right mid-flight at the last minute. If the opponent is not expecting this they will lose the point, however in my opinion it is unpredictable when it will happen.

A frictionless player can produce a wobble ball by hitting in the opposite direction as the incoming spin, i.e. if the opponent chops you chop if the opponent topspins you try to loop. It is only a stunt though and should not be a main stroke. The term 'wobble' is often used very loosely to describe a sink ball or a cutter, for example the Dr Neubauer training videos (below) describe 'cutters' as wobble balls and this is simply wrong. A wobble can only be produced from a return ball carrying no spin.

Playing against frictionless

The classic attack on a frictionless pip player is to serve flat (no-spin) and hard into the long pips and thereon removing the spin in your strokes and playing hard at the pips is a recognized strategy. In fact this is a general approach against both soft and frictionless pip players. However, against a good pip player this doesn't work because, for example I would immediately twiddle (flip the bat around) and loop the return using inverted rubber. In my case I use very spiny inverted rubber (Geospin Tacky) which although it is sensitive to incoming spin is ideal against no spin, so in effect I'm waiting for exactly this sort of serve or approach. A soft pip defensive player would probably try and chop a no-spin ball. The other strategy a frictionless pip player has is to punch block for a no-spin wobble (described below) against a flat hit/ serve. If a frictionless pip player can not twiddle however no spin balls become a major source of difficulty.

However, if you understand how frictionless pips work you can simply play your normal game and compensate for the less than Orthdox spin returns you will receive. Personally I would be reluctant to heavily backspin the ball against an opponent playing with frictionless rubber because of the cutters that will be returned at which point you have to play off the table to account for 'unpredictable' cuts. I am quite happy to topspin against frictionless rubber because the backspin return is predictable, unless the opponent can perform a drop shot. If the frictionless player moves too far from the table this shot becomes difficult and strategically the frictionless player is at a major weakness. To avoid a predictable spin return the classical frictionless player must keep varying the stroke to present a range of spin variations and thereby introducing uncertainty to the opposing player.

In summary, against a frictionless pip player try no-spin flat hits into the pips and see how well they deal with this, or try pushing the pip player away from the table using loops. For a defender, avoid taking the ball off the bounce despite is slower speed return, wait for the 'cut' and chop return as you would against an attacking inverted player by chopping on soft pips or inverted. The defender will of course not be able to out-spin the frictionless pip player but can readily win by waiting and then attacking because of the moderate to slow speed of the reverse spun topspin

returns. All-round players, those that both chop and loop, often have difficulty against frictionless rubber because it is harder for them to understand the predictability in the return due to the lack of consistency in their spin attacks.

Sponge

The more sponge used in any pip rubber game the less reverse spin is produced but the faster the return. Most frictionless pip players use either no sponge (OX) enabling maximum reverse spin, or else 0.5 mm sponge. Sponge thicknesses of 1.0 mm and above both reduce the amount of reverse spin and also the amount of 'control' in the return stroke. 'Control' in this context has a specific definition and you'll only understand it when you try different sponge thicknesses. Some of attacking frictionless pips players, viz. Monster (Neubauer) will use 2.0 mm sponge to enhance the speed of return. This may work by beating the opponent on speed combined with a much reduced amount of reverse spin, but the strategy is very different from the approaches described here and would be seriously exposed once the opponent masters the amount of reverse spin the rubber is returning.

Exponents

A training video showing the basic frictionless pimple strokes by Dr Neubauer can be viewed here:
http://www.youtube.com/watch?v=4NVmoJY2UMY

Dr Neubauer uses a defensive style of frictionless pip technique in matches, based around drop shot against attacking players. In this style slow strokes, such as backspin, are usually attacked and attacking strokes are drop shorted ad nausea.

Exponent of the offensive style of frictionless pip play is Amelie Solja. The following clip demonstrates excellent frictionless technique by mixing strokes to shift the spin on the block using a punch block (attacking) based style:
http://www.youtube.com/watch?v=iJ7K43l4284

In the first rally executes a punch block, then lift type stroke, or rather an frictionless loop style attack and follows up with drop shot, which wins the point by the increase in 'sink' (backspin) drop shot achieves. In the second rally executes a cross court punch block, BH to FH punch block, floated chop on inverted and the opponent delivers a 'pop-up' thinking there's more backspin on the ball than there is where upon she smashes to win the point.