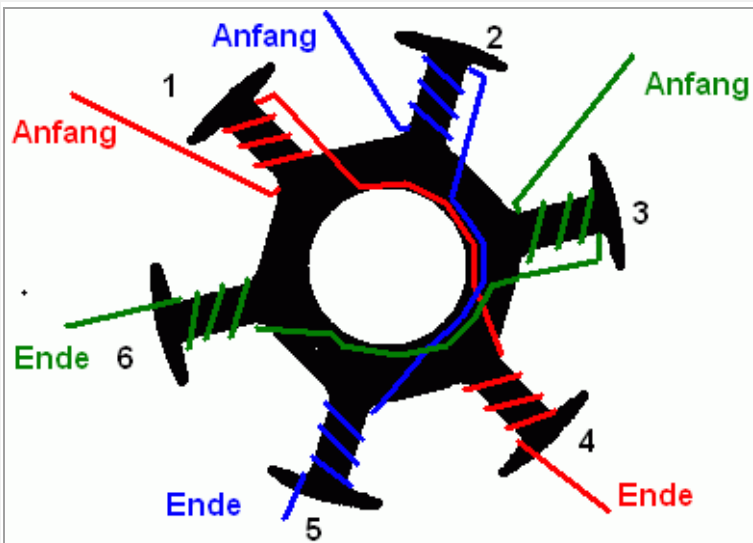


Stator windings

6N stator

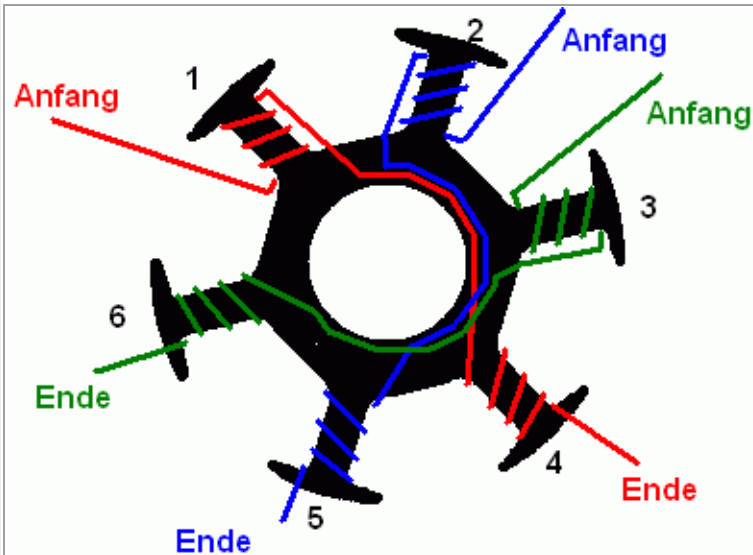


That is the 6N4P and/or 6N8P winding.

It becomes also - after its case of main application - when mini LRK designates winding.

If the LRK typical winding mode from the center is selected, the representation deviating from this here with defined Anaengen and ends!

The pattern reads: **ABC ABC**



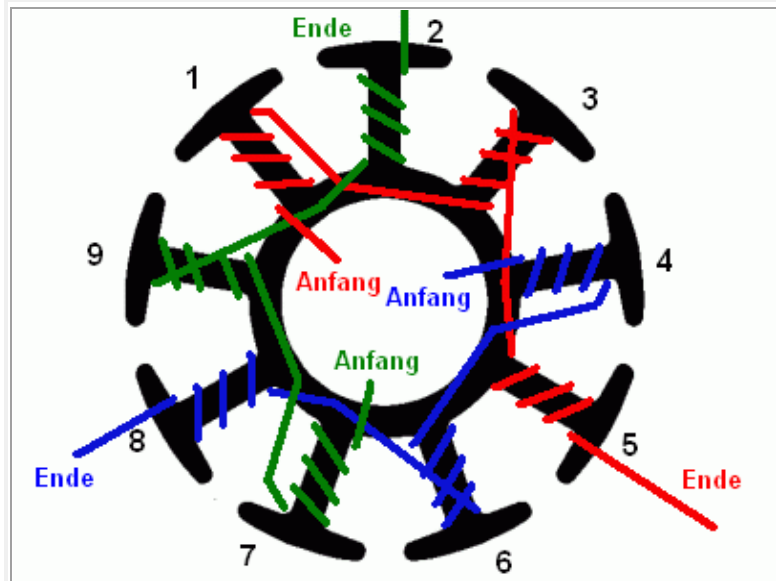
2. Winding variant for the 6N-Stator: 6N10P

The crack point is here the against-intimately rolled up 2. Phase!

If the LRK typical winding mode from the center is selected, the representation deviating from this here with defined Anaengen and ends!

The pattern reads: **ABC ABC**

9N stator

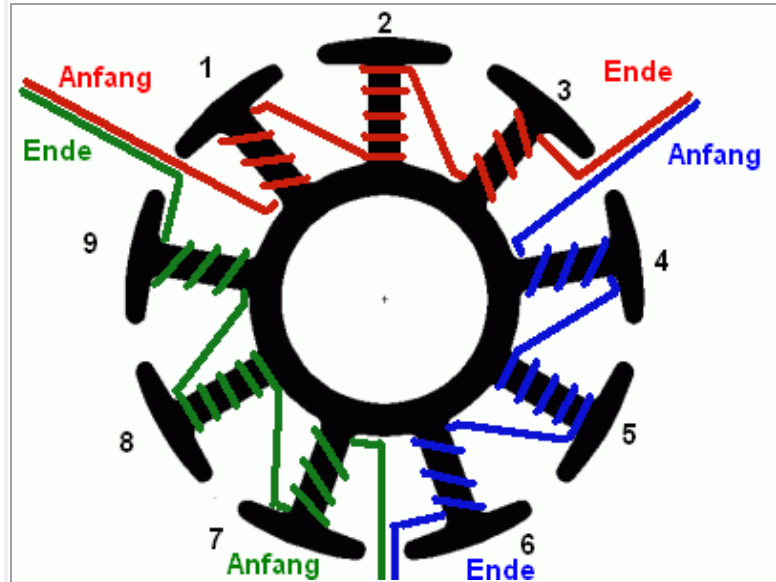


That is the 9N4P winding.

Because of the high numbers of revolutions the use of this combination makes sense real only when using very thin sheet metals from good iron!

The pattern reads: **ACaBAbCBc**

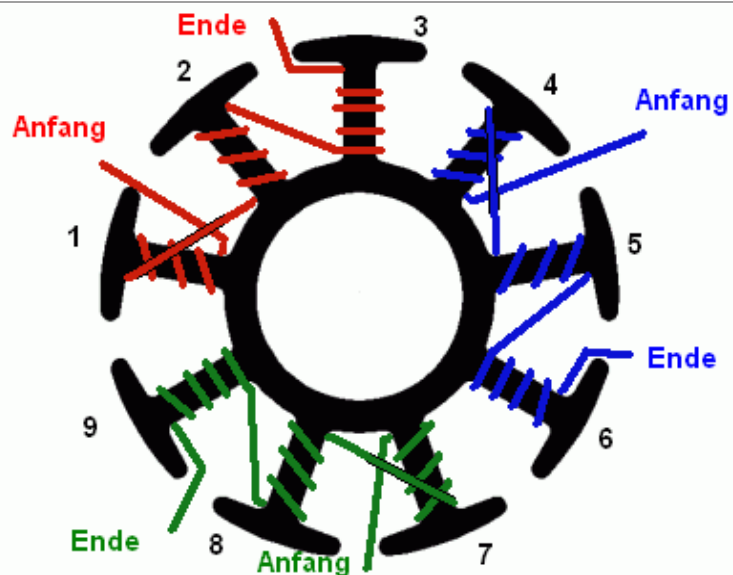
This pattern is equally suitable for interconnecting in star and triangle.



That is the 9N8P and/or 9N10P winding.

The mode reads: "from the outside" the beginnings and the ends of the individual phases are appropriate, force themselves directly next to each other there here interconnecting upon almost to the triangle.

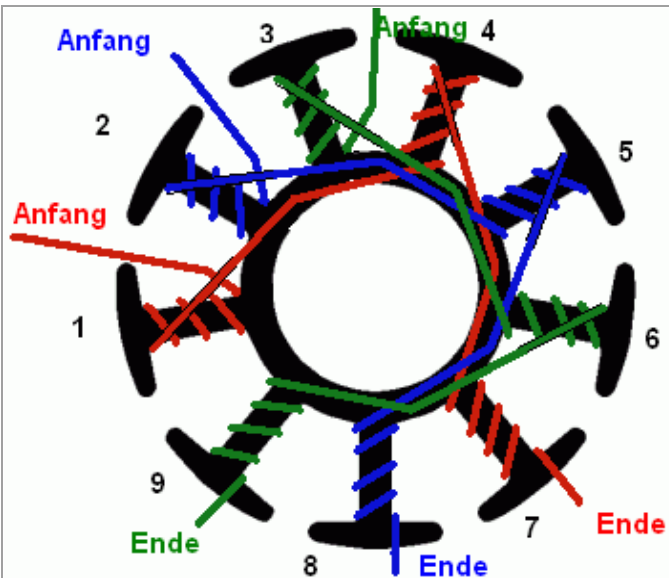
The pattern reads: **AaABbBCcC**



That is another variant of the 9N8P and/or 9N10P winding.

this time in "from the inside" the mode wound.

The pattern reads again exactly the same: **AaABbBCcC**



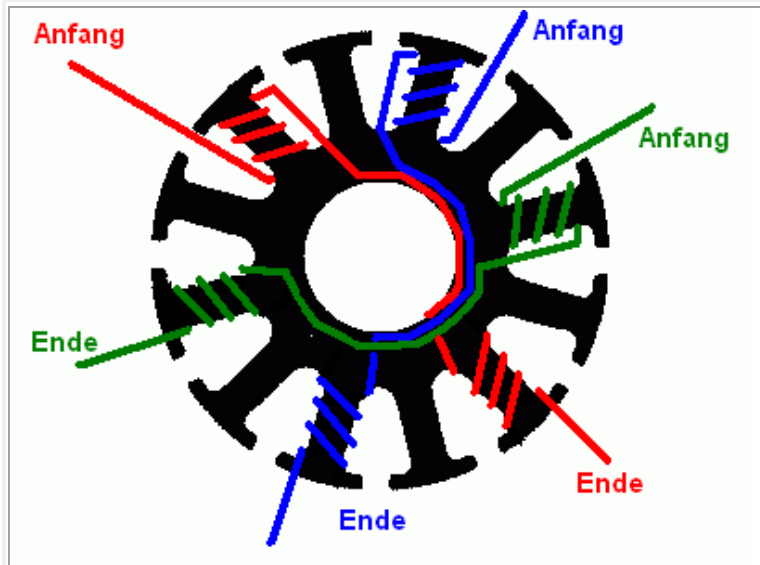
That is those well-known 9N12P- winding.

It is used with the small CDR engines just like with the 9N Colorado and Dittostatoren as standard winding.

The pattern reads: **ABC ABC ABC**

For beginnerbeginner beginners is the exact execution of this winding variant is [here](#) represented again in many individual steps with pictures.

12N Stator

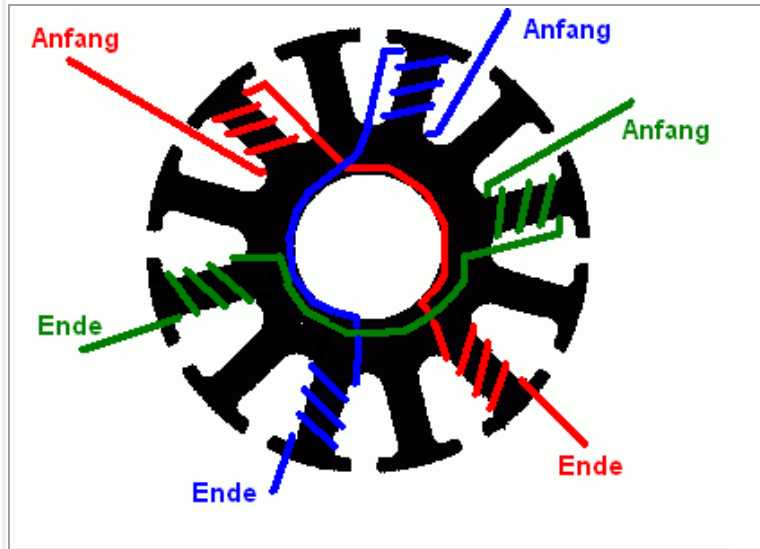


LRK winding

The linear pattern of tooth 1 ("at the beginning of Rot") bis tooth 12 completed always reads with the LRK:

ABC

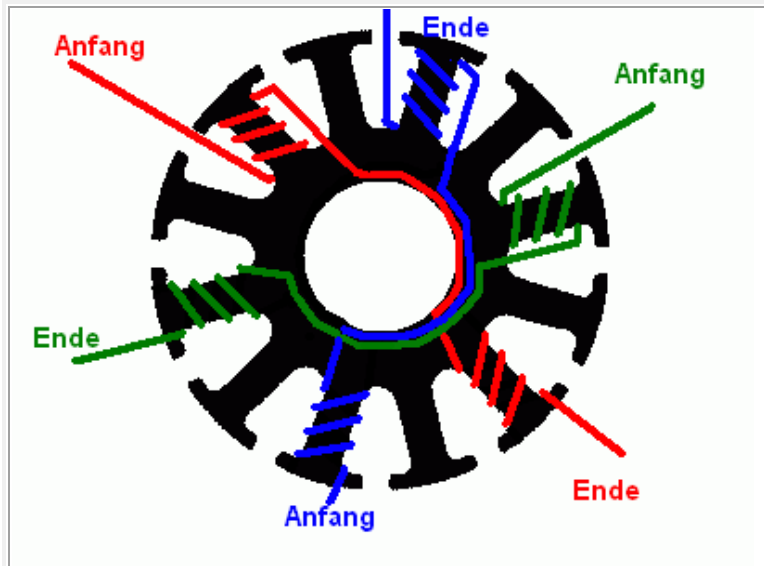
Here the conventional coil with defined beginnings and ends is represented. This winding variant is suitable best for a y-connection, because all 3 ends lie next to each other here.



LRK winding

The same pattern, only the blue transition wire is here put against the clockwise direction around the stator.

The advantage consists of the fact that on the inner ring anywhere 3 transition wires do not lie directly next to each other.



LRK winding

This picture shows a further variant of the conventional coil with defined beginnings and ends.

Linear one completed here:

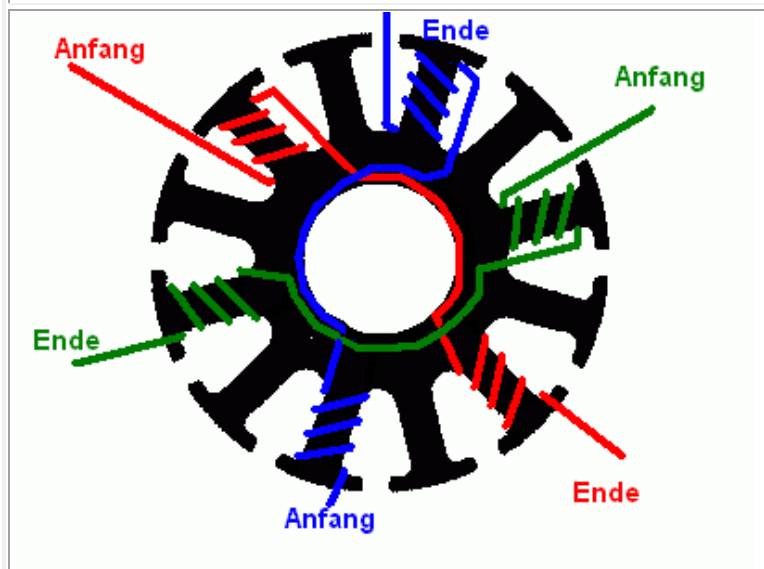
ABC

wound.

There however the blue wire in the opposite direction (quasi of "in the back") is bestromt, tunes everything again.

On stator beginnings and ends lie side by side now alternating and thus.

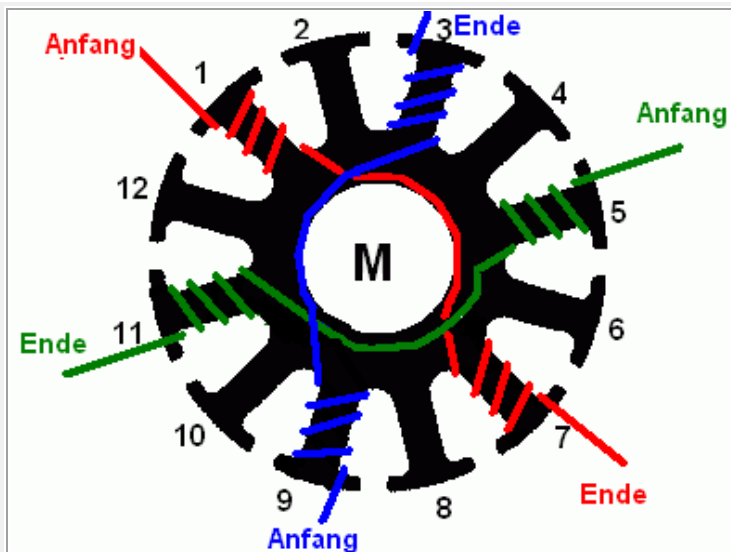
Thus this variantvariant variant is suitable very well for interconnecting in the triangle.



LRK winding

The same as in the last picture, only diesaml the blue wire is again on the other side of the stator hole.

One avoids in such a way also here, which because of any place of the inner ring 3 transition wires come to be next to each other.



LRK winding

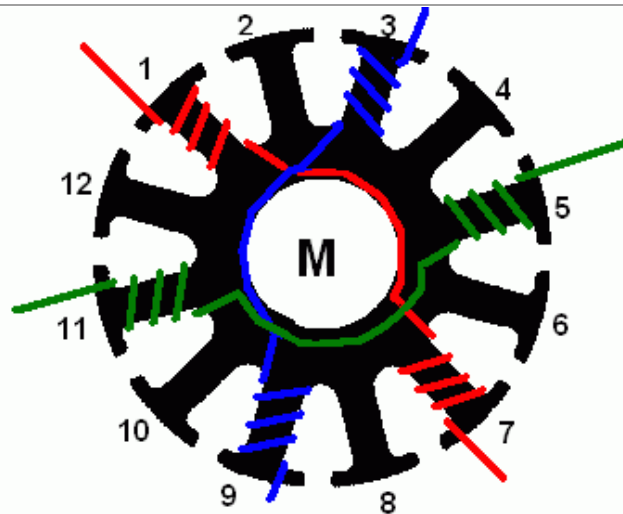
Often recommended for the delta connection of the center from (quasi from the transition wire) in each case half the wire length toward both sides to windings. In the linear completion regarded it shows up that each tooth is wound also here in the same wickelsinn as with the last two patterns!

The designation as beginning and end is here only one definition in the in retrospect actually has one after the winding only 6 ends....

Also this method has its advantages.

With high numbers of turns one sees at the "remaining" wire length, which must be alike everywhere whether one wound identical numbers of turns.

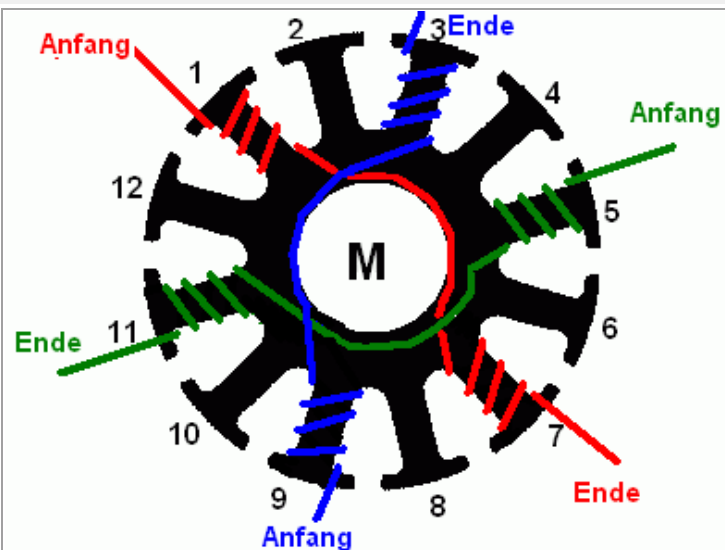
In addition are shorter with the winding to haendelnden wire lengths.



LRK winding

Too better lastly: wound from the center for y-connection.

1, 3 and 5 are the entrances, 7, 9 and 11 into the neutral point are combined.

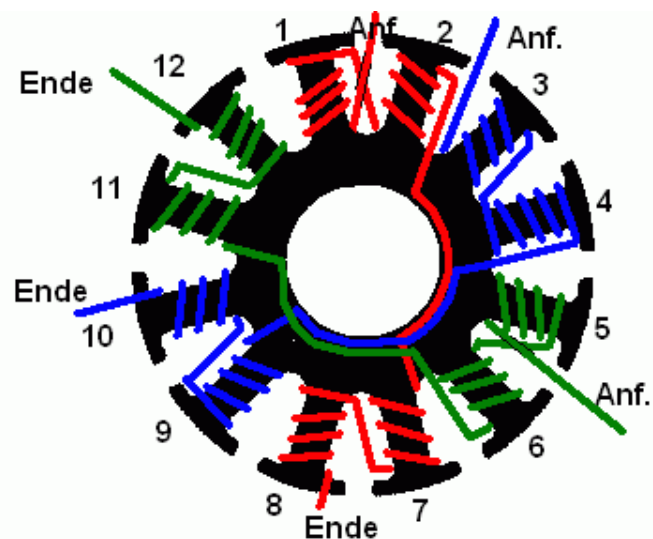


LRK winding

That is the so-called LRK - winding, which is used equally both with 12N 10P as also with 12N14P engines.

Here LRK typically variant wound from the center is represented. The crack point is here the against-intimately bestromte 2. Phase!

The pattern works: **ABC ABC**

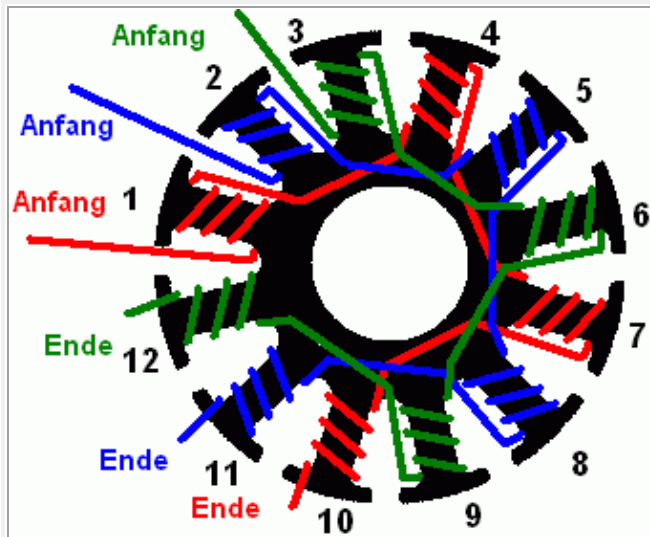


Distributed LRK winding.

Also it can be used equally both with 12N10P as also with 12N14P engines. The principle principle principle corresponds to the upper, only the fact that the respective "Nebenzahn" - which remains unbewickelt with the genuine LRK is wound - here always exactly against-intimately to the "main tooth". This kind of winding has the advantage the fact that the coil is applied with same total number of the turns distributed on 2 teeth whereby logical-proves smaller end windings comes.

Here the y-connection-optimized variant with defined beginnings and ends is represented.

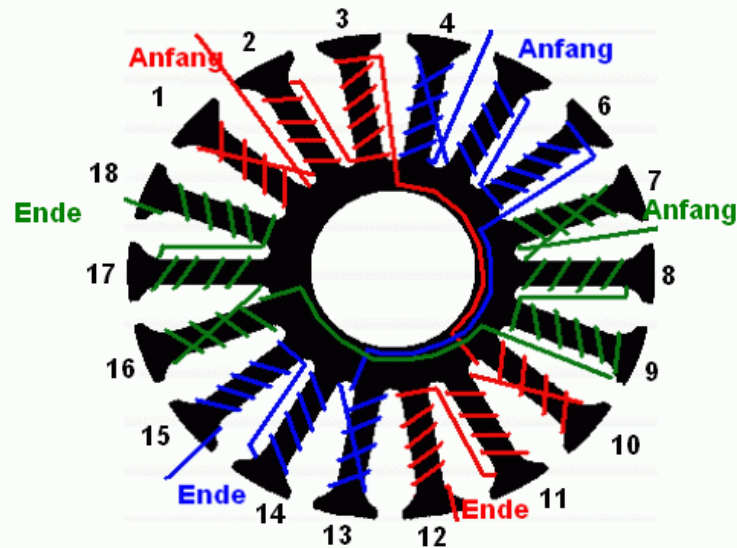
The pattern reads: **AabBCcaABbcC**



That is the 12N16P winding. It wound on all teeth in the same sense.

The pattern reads: **ABC ABC ABC ABC**

18N Stator

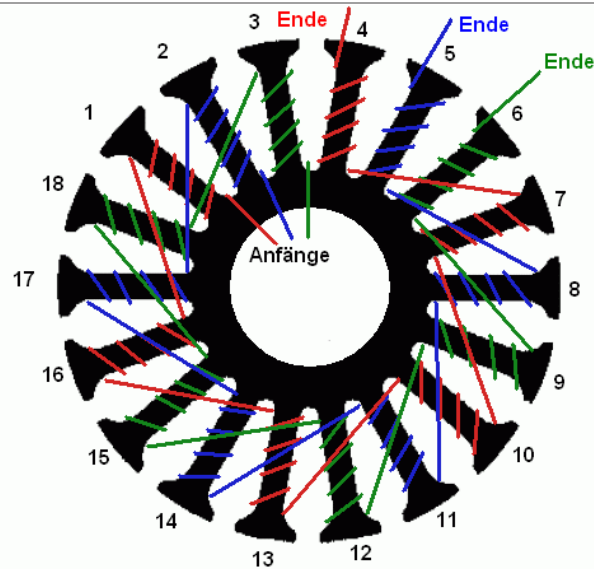


My favourite favourite patternfavourite pattern: the 18N 16P and/or 20P winding.

If one sees exact, one recognizes that there is actually 2 9N8P and/or 10P winding interconnected in row.

Naturally one could also interconnect it as parallel [here](#) shown!

The pattern reads: **AaABbBCcCAaABbBCcC**

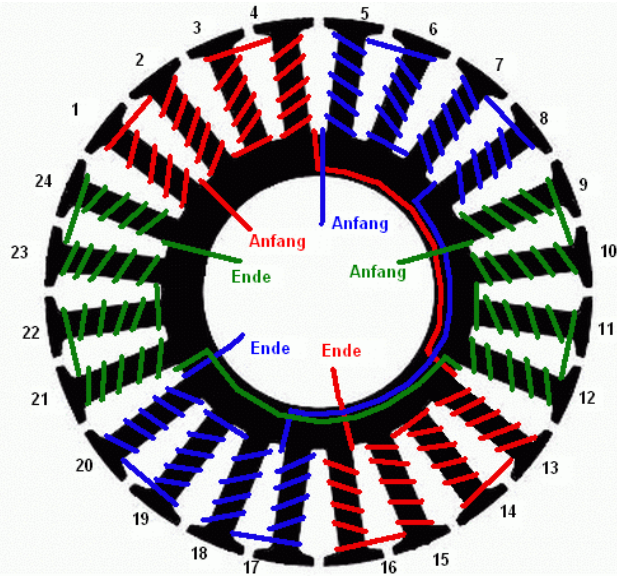


The 18N24P-Bewicklung actually 2 9N12P-Motoren switched into row.

Also this winding can one by the group parallel connection shown [here](#) in most diverse way lay

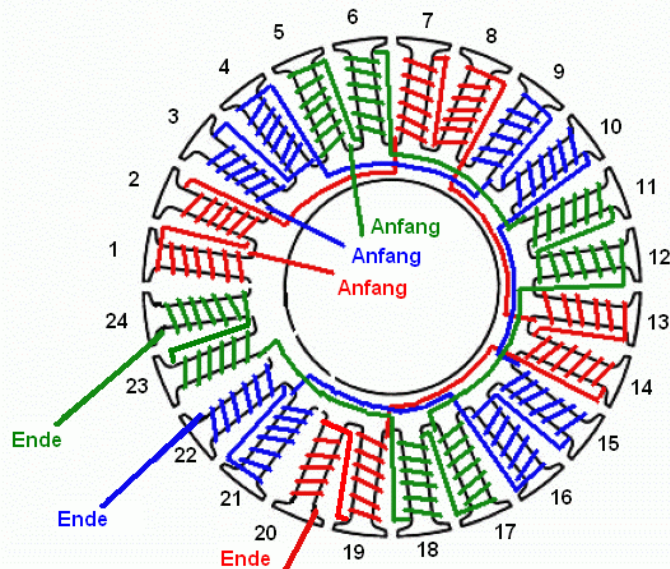
the pattern out reads: **ABC ABC ABC ABC ABC ABC**

24N Stator



Here for 22 and/or. 26 magnetic poles of wound 24N stator.

The pattern reads: **AaAabBbBCcCcaAaABbBbcCcC**



Here for 20 and/or. 28 magnetic poles of wound 24N stator.

In principle it concerns here a double (line up-switched) 12N10P and/or 12N14P engine!

The pattern reads: **AabBCcaABbcCAabBCcaABbcC**

stator slots magnet poles	3	6	9	12	15	18	approximate gearing
2	ABC	AbCaBc	AacBBaCCb	AAccBBaaCCbb	AAACCbbaaCCCb	AAAcccBBBaaaCCCb	1
4	ABC	ABCABC	ABaCAcBCb	AcBaCbAcBaCb	AACBaCCbAcBBaCb	AAcBBaCCbAAcBBaCCb	2
6			ABCABCABC			AcBaCbAcBaCbAcBaCb	3
8	ABC	ABCABC	AaABbBCcC	ABCABCABCABC	AcaCABabABCbcBc	ABaCAcBCbABaCAcBCb	4
10	ABC	AbCaBc	AaABbBCcC	AabBCcaABbcC A-b-C-a-B-c	ABCABCABCABCABC	AcabABCbcaCABabcBC	5
12			ABCABCABC			ABCABCABCABCABC AaBbCcAaBbCcAaBbCc A-B-C-A-B-C-A-B-C	6
14	ABC	AcBaCb	ACaBAbCBc	AacCBbaACcbB A-b-C-a-B-c	AaAaABbBbBCcCcC	AabcCABbcaABCcabBC	7
16	ABC	ABCABC	AAbCCaBBc	ABCABCABCABC	AaAaACcCcCBbBbB	AaABbBCcCAaABbBCcC	8
18							9
20	ABC	ABCABC	AbbCaaBcc	AbCaBcAbCaBc	ABCABCABCABCABC	AaABbBCcCAaABbBCcC	10

gray fields means, there is no useable scheme for this combination

blue fields show succesful tested combinations

orange fields means untested combination

It seems, they give less efficiency because of the to big slot/pole ratio.

To understand this, please have a look [here](#)!

light blue fields are tested as usefull and as good tested combinations