Advantages of 3 phase thyristor rectifier

* Low output voltage ripple than one phase rectifier
* More output voltages than one phase rectifier

Disadvantages of 3 phase thyristor rectifier

* You need more thyristor than one phase rectifier
* Cost is more than one Phase thyristor rectifier

Advantages of one phase thyristor rectifiers

* You need less thyristor than 3 phase thyristor rectifier
* Control circuit more basic than 3 phase thyristor rectifier

Disadvantages of one phase thyristor rectifier

* Output voltages less than 3 phase thyristor rectifier

3 phase and 1 phase thyristor rectifier disadvantages

* 3 phase and one phase thyristor rectifiers inject large harmonics into the utility system.
* When output voltage is small, power factor and displacement power factor is very poor.
* Moreover, Phase controlled converters produces notches in the line voltage waveform.
* Gate current cannot be negative.
* There should be complicated control circuit, than buck converter.
* You must use large capacitor to obtain low output voltage ripple.

Diode rectifier- buck converter disadvantages

* There should be large capacitor in the output because of low ripple in the output voltage.
* When Ls and Ld are small, the current İd and is are highly discontinuous and there are very poor power factor at the utility.
* İnject large amount of harmonic current into the utility system.

Advantages of Diode rectifier-buck converter

* You can control the switching frequency to reduce output voltage ripple. So that you can use small filtering component.