1. ONE CASING

Legend:
- Control valve
- Pressure transmitter
- Flow transmitter
- Antisurge controller
- Drum
- Cooler
- Non return valve
- Flow element such as orifice or ventury

Note:
1. Bypass cooler may be integrated to aftercooler in one shell, but flow is separated in different passes. Dot lined cooler dwg is requested by antisurge system and solid line coolers is requested by compressor/process itself.
2. Flow element may be installed at suction line. When flow element installed at discharge line, discharge flow shall be converted to suction flow by installing pressure transmitter at both lines. Discharge pressure transmitter also purposed as variable in performance curve where surge line curve is included.
3. If aftercooler is installed in the system, bypass cooler may not necessary only if discharge temperature of aftercooler is almost equal with compressor suction temperature otherwise gas temperature in compressor become unlimited because compression is always followed by increasing temp.
4. Temperature element and transmitter also may necessary to compensate conversion of discharge flow to suction flow. Flow conversion will be processed in ASC. Surge line curve is also programmed in ASC.
2. TWO CASING

2.1. Typical 1. Single Antisurge Control Valve

Notes:
1. For compressor without intercooler and aftercooler, **bypass cooler** is necessary to cool down gas near or equal to suction temperature.
2. If gas **contain a lot of water** at suction and cooled down at intercooler and after cooler, water may be separated from gas. Gas become drier and gas MW may changes to heavier or lighter depend on gas main component MW relatives to water MW. If gas become heavier, suction flow at low stage will decrease and operating point will move to surge curve side, see following figure. To prevent this condition, separated antisurge control may be accepted even there will be more cost for control valve and their piping. In this case, movement of operating point shall be calculated and plotted on performance curve of compressor to make sure whether new condition is near surging line.
2.2 Typical 2. Individual Antisurge Control Valve