



**Notes**  
For clarity, the highest number for each tag is listed below:  
TT - 215  
PT - 214  
LT - 208  
FT - 219  
AT - 205  
PCV - 202  
FCV - 210  
SOV - 209  
V - 210  
NRV - 206  
PRV - 3  
  
Black-out valves indicate valves that are normally in closed position.

**Legend**  

→ Main process stream

→ Utility stream

→ Drainage stream

Control valve

Solenoid valve

Pressure relief valve

No-return (Check) valve

Instrument in field

Interlock

→ Electrical signal

→ Standby electrical signals

Pressure regulating valve

Gate valve

Three way valve

Operator accessible controller system mounted in control room

Alarm

**ID for Instruments**

Letter	First	Second	Third
A	Composition analyser	Alarm	
C		Control	Controller
F	Flow		
H			High
I	Interlock	Indicator	
L	Level		Low
M	Motor		
N	Non-return		
P	Pressure		
R		Relief	
S	Solenoid	Switch	
T	Temperature		
V	Valve	Valve	Valve
Y		Multipier	
Z		Interlock computer	

**P&ID description:**  
O-nitrotoluene hydrogenation reactor and solvent distillation  

	NAME	DATE
DRAWN	SKT, MJ	08/03/2021
CHECKED	MJ, SKT	10/03/2021
APPROVED	HO	12/03/2021

Equipment tag	R201	P201	F201	H201	H202	S203	H203	S204	H204
Description	Trickle Bed Reactor	Centrifugal Pump	Centrifugal Fan	Electric heater	Electric heater	Packed column	Plate&Frame Condenser	Reflux drum	Kettle Reboiler
Material of construction	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Copper heating element	Copper heating element	304-S71 Stainless Steel	304-S71 Stainless Steel	304-S71 Stainless Steel	304-S71 Stainless Steel
Design pressure (atm)	5	5	5	5	5	1	1	1	1
Design temperature (°C)	60	60	60	60	60	175	67	67	175
Capacity	3.93 m <sup>3</sup>	0.66 m <sup>3</sup> /h	0.67 m <sup>3</sup> /h	6.38 kW	6.38 kW	0.31 m <sup>3</sup>	-38.96 kW	0.15 m <sup>3</sup>	127.96 kW