DYNAMIC MODEL DATA

아래 열거한 자료들은 **DYNAMIC SIMULATION** 을 하기위하여,**MODELING** 이 된 다음 관련 자료를 **INPUT** 하기 위한 필요한 자료이다.

UNIT OPERATION 에 대한 정확한 자료가 필수적이다.

특히 **CONTROL VALVE** 에 대한 자료 및 **MOVING EQUIPMENT** 에 대한 자료는 필수적이다.

특히 원심 압축기의 경우 **SURGE CONTROL** 및 **CAPACITY CONTROL** 혹은 **LOAD SHARING** 에 대한 압축기 **VENDOR** 혹은 전문업체의 **ALGORITHM** 을 **LINK** 하여 사용 할 수도 있으며,**HYSIS** 본래의 **SOFTWARE** 의 **PID CONTROL SYSTEM** 을 이용 하는 경우가 있다.

여기 열거한 자료는 **REFRIGERATOR SYSTEM** 에 대한 **SAMPLE** 이다.

압축기는 **2** 단으로 이루어져 있으며,압축기는 **STAND-BY COMPRESSOR** 가 있다.

4.1 UNIT OPERATIONS SUMMARY

The following tables contain a summary of the equipment modelled.

Table 4.1.1 Compressor Unit Operations

Unit Operations (Model Name)	Description
K-2509A1/B1	Propane refrigeration compressor 1st stage
K-2509A2/B2	Propane refrigeration compressor 2nd stage

Table 4.1.2 Separator Unit Operations

Unit Operations (Model Name)	Description
V-2519A/B	Propane 1st stage KO drum
V-2520A/B	Propane second stage KO drum
V-2518	Propane economiser
V-2517	Propane surge drum

Table 4.1.3 Air cooler Unit Operations

Unit Operations (Model Name)	Description
E-2512A/B	Propane desuperheater
E-2513A/B/C/D	Propane condenser

Table 4.1.4 Heat exchanger Unit Operations

Unit Operations (Model Name)	Description
E-2514	Propane sub cooler
E-2511A/B-	Propane vaporizer

Table 4.1.5 Piping Unit Operations

Unit Operations (Model Name)	Description
CGP-100/200	Line from HV-408/411 to V-2519A/B
CGP-101/201	Line from V-2519A/B to K-2509A1/B1
CGP-102/202	Line from K-2509A2/B2 to E-2513A/B

	2512A/B
CGP-103/203	Line from E-2512A/B to FV-443/444
CGP-104/204	Line from HV-459/440 to V-2520A/B
CGP-105/205	Line from V-2520A/B to K-2519A2/B2
CGP-106/206	Line from FV-443/444 to V-2519A/B
CGP-107/207	Line from FV-428/440 to V-2520A/B
CGP-108	Line from HV-456/457 to E-2513
CGP-109	Line from V-2518 to HV-459/473
CGP-110	Line from E-2511 to HV-408/411

4.2 DYNAMIC MODEL DETAILS

The following size data of the unit operations were used for the dynamic simulations.

Vessel (V-2519A/B, V-2520A/B, V-2517, V-2518)

Figure 4.2.1 Data for V-2519A/B

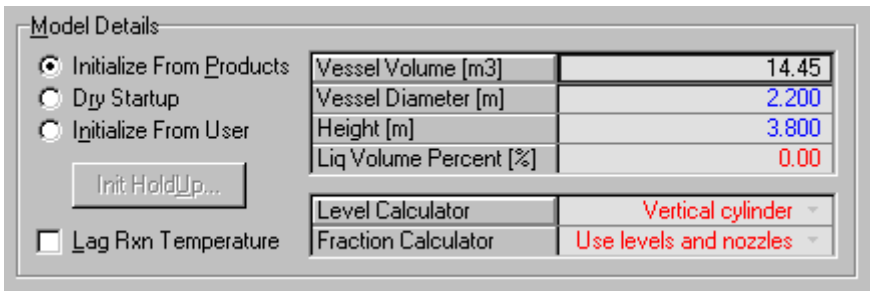


Figure 4.2.2 Data for V-2520A/B

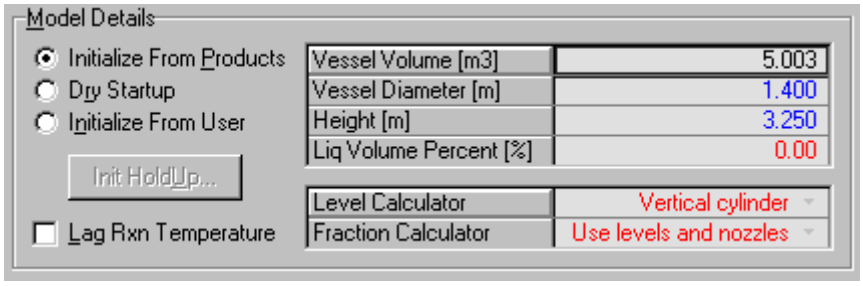


Figure 4.2.3 Data for V-2517

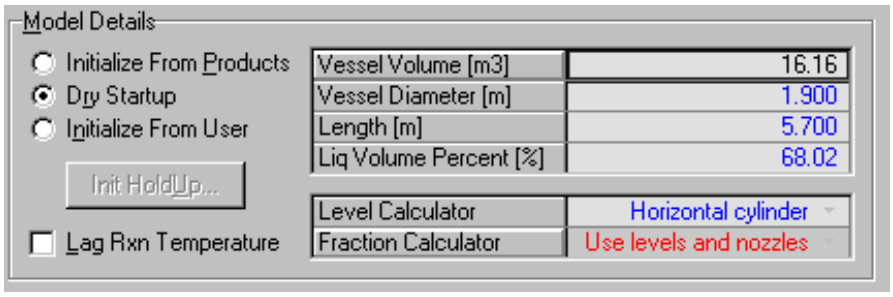


Figure 4.2.4 Data for V-2518 1

Air coolers(E-2512A/B and E-2513)

The holdup volumes of two air coolers are more import factors to effect the pressure than one of cooling water exchanger.

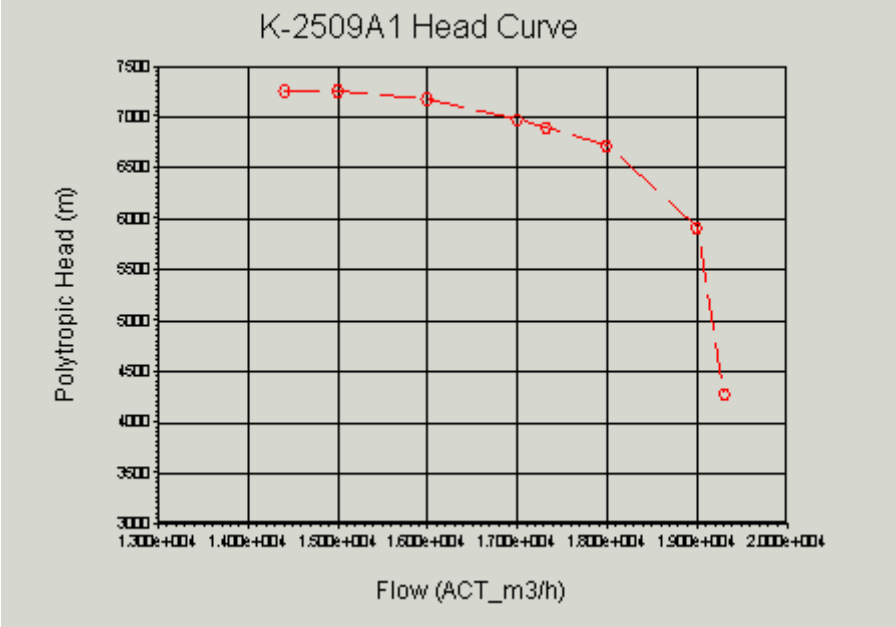
Figure 4.2.5 Data for E-2512A/B

Figure 4.2.6 Data for E-2514

Compressors(K-2509A1/B1 and K-2509A2/B2)

Each compressor performance curves at compressor speed of 8341 rpm were used for dynamic modeling.

Figure 4.2.7 Compressor performance curve for K-2509A1/B1



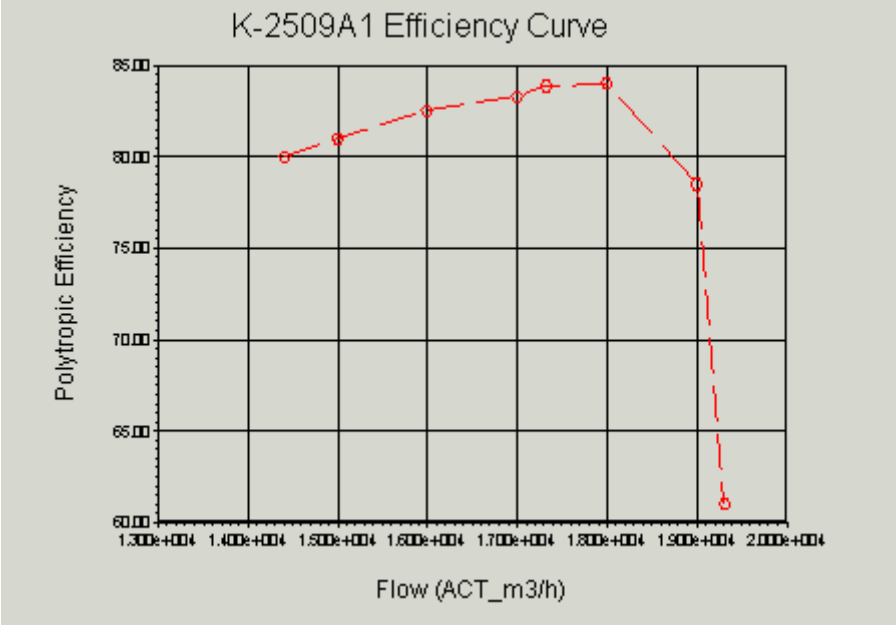
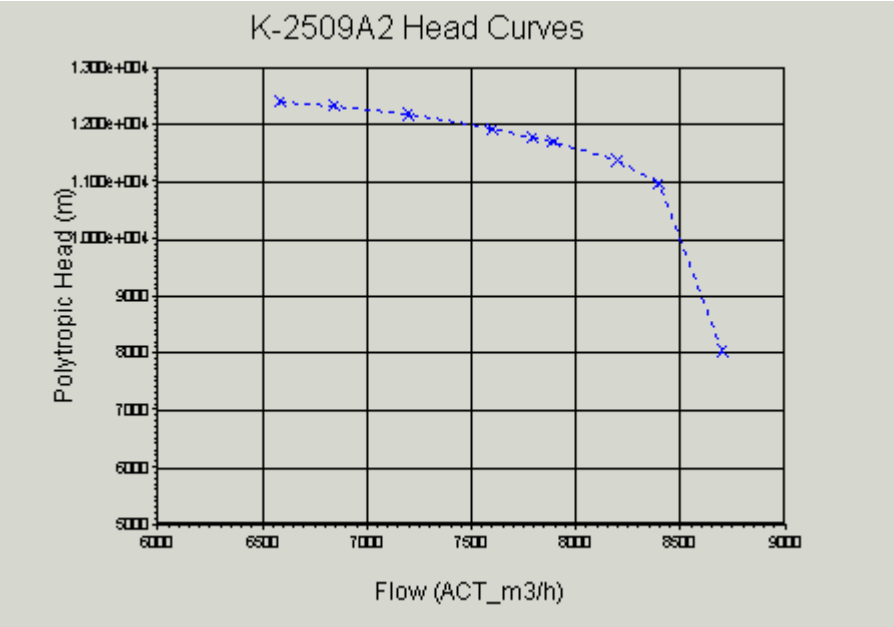


Figure 4.2.8 Compressor performance curve for K-2509A2/B2



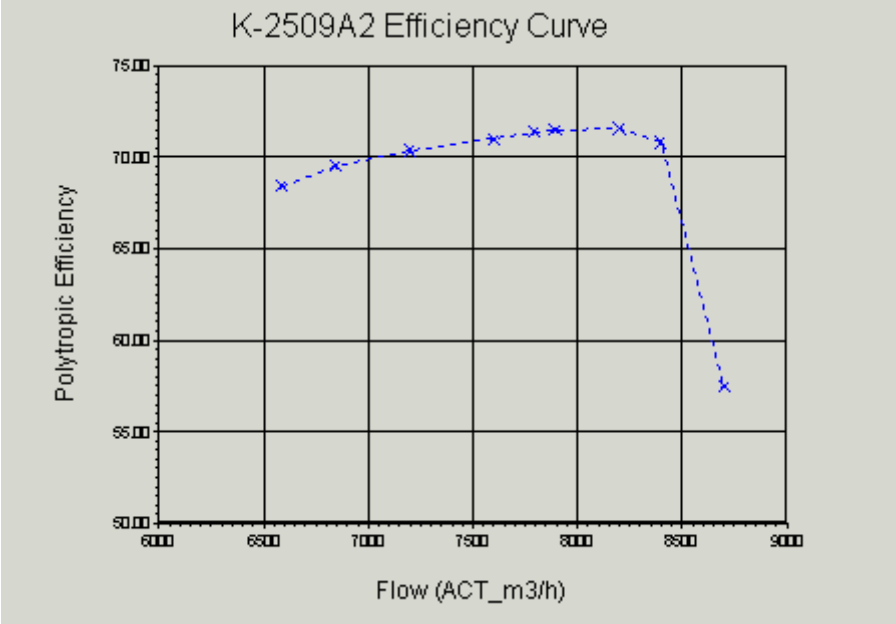
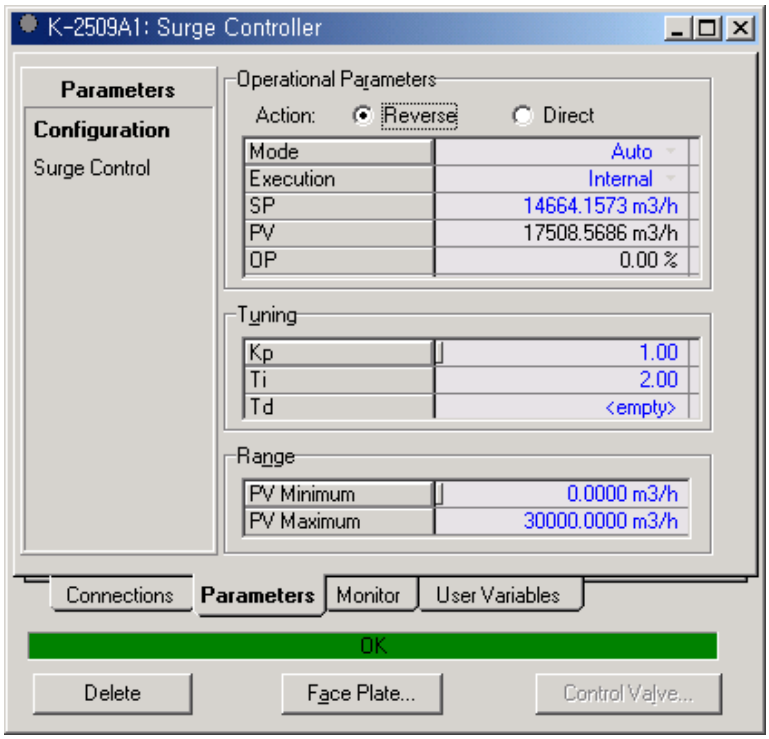


Figure 4.2.8A Compressor Surge Controller for K-2509A1/B1 1



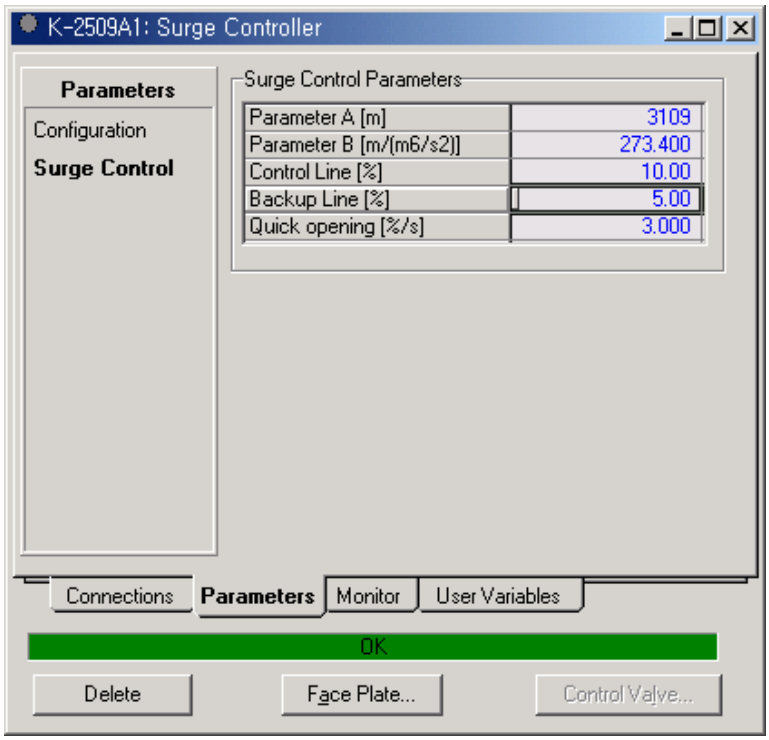
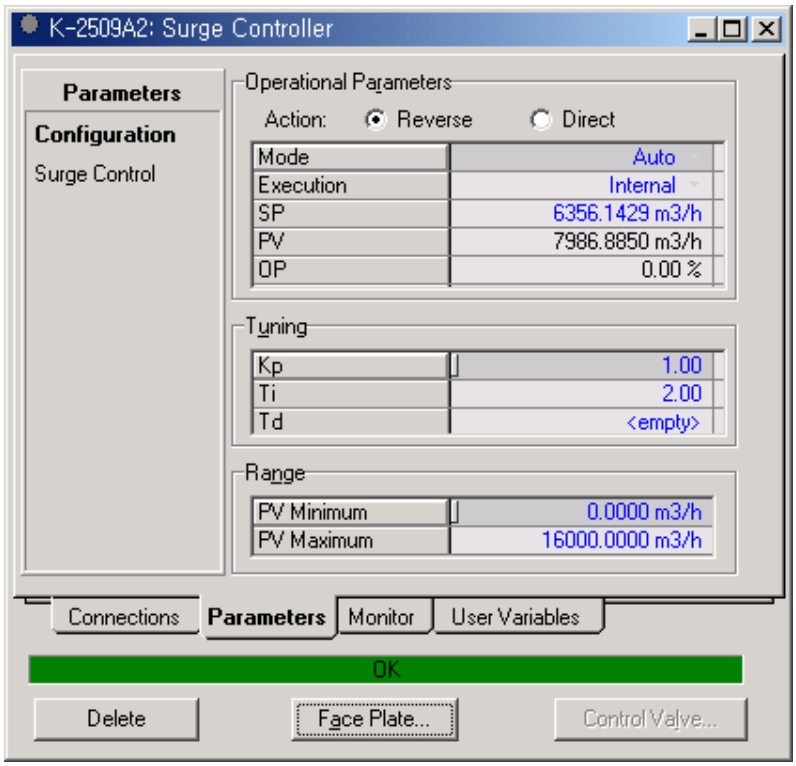
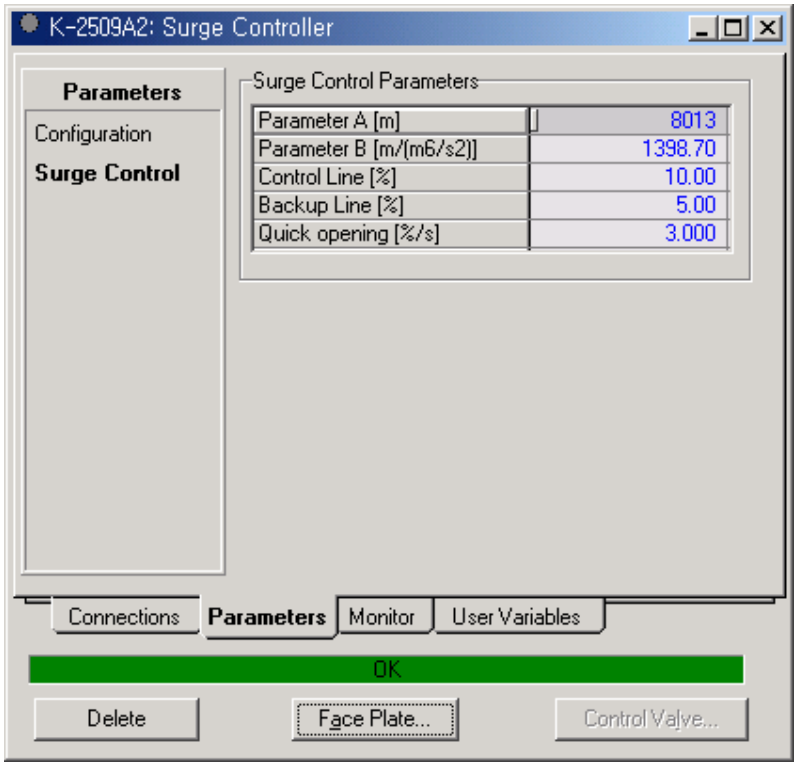


Figure 4.2.8B Compressor Surge Controller for K-2509A2/B2 1





Valves and Piping

Valve unit operation can be used as piping unit operation as well as its original valve operation in HYSYS dynamic simulation. The hold-up volume of pure valve unit operation is assumed as it was added to piping volume.

Figure 4.2.9 Data for HV-408/411,HV-459/473 and HV-456/457

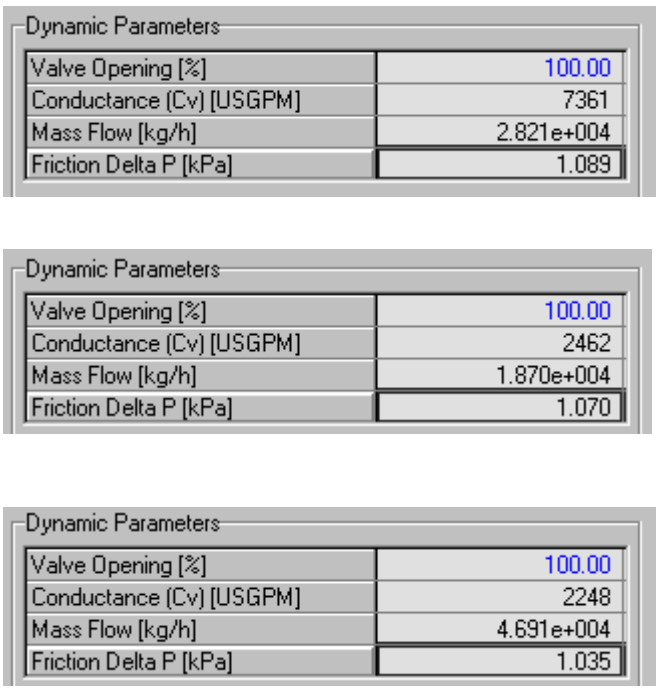


Figure 4.2.10 Data for FV-428/440 and FV-443/444

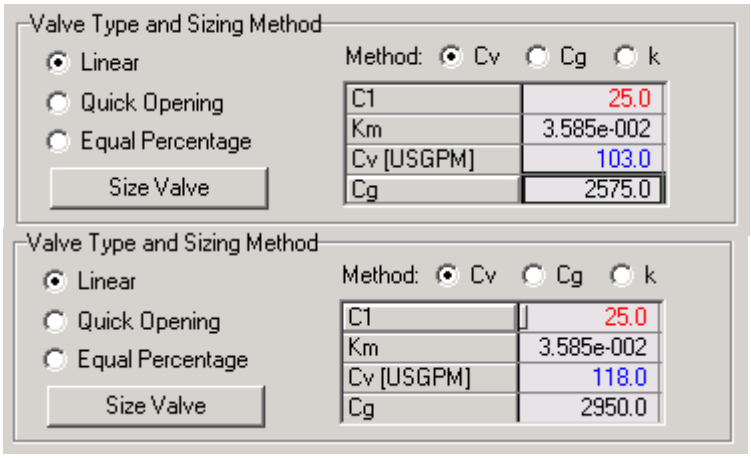


Figure 4.2.11 Data for piping

Name	CGP-100 @TPI	CGP-101 @TPI	CGP-102 @TPI	CGP-103 @TPI
Feed diameter [m]	0.6604	0.6600	0.3048	0.3048
Pipe length [m]	7.000	27.00	58.00	25.00
Pipe (holdup) volume [m3]	2.400	9.240	4.230	1.820
Name	CGP-104 @TPI	CGP-105 @TPI	CGP-106 @TPI	CGP-107 @TPI
Feed diameter [m]	0.3556	0.3556	0.5080	0.5080
Pipe length [m]	5.000	57.00	49.00	49.00
Pipe (holdup) volume [m3]	0.4970	5.660	9.930	9.930
Name	CGP-108	CGP-109	CGP-110	** New **
Feed diameter [m]	0.3370	0.3370	0.3050	
Pipe length [m]	9.200	83.10	70.00	
Pipe (holdup) volume [m3]	0.8000	7.400	5.110	