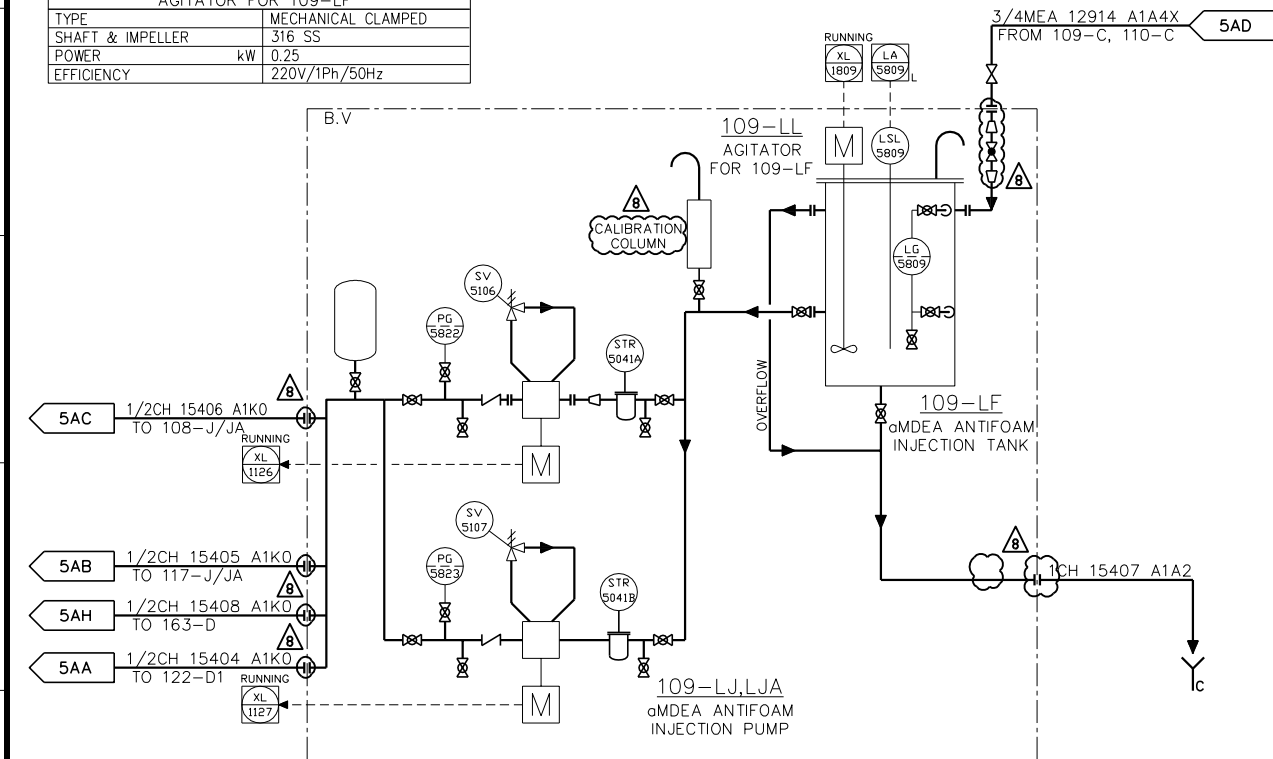


109-LF	
oMDEA ANTIFOAM INJECTION TANK	
DES./OPER.TEMP	°C 70/AMB
DES./OPER.PRESS	kg/cm2G FULL OF WATER/ATM
THICKNESS	mm 3 (SHELL), 5 (BOTTOM)
MATERIAL	316 SS
DIMENSION	mm ID.640 x H.800 (TOP/BOTT.)
CAPACITY	m3 0.2

109-LL	
AGITATOR FOR 109-LF	
TYPE	MECHANICAL CLAMPED
SHAFT & IMPELLER	316 SS
POWER	kW 0.25
EFFICIENCY	220V/1Ph/50Hz

109-L  
oMDEA ANTIFOAM  
INJECTION UNIT

109-LJ/LJA	
oMDEA ANTIFOAM INJECTION PUMP	
FLOWRATE	LPH 5 (MAX)
SUCT./OPR. PRESS.	kg/cm2G 0/15.5
POWER	0.25kW/220V/1Ph/50Hz
RPM	1500



108-LF	
PHOSPHATE INJECTION TANK	
DES./OPER.TEMP	°C 70/AMB
DES./OPER.PRESS	kg/cm2G FULL OF WATER/ATM
THICKNESS	mm 3 (SHELL), 5 (BOTTOM)
MATERIAL	304 SS
DIMENSION	mm ID.800 x H.1100 (TOP/BOTT.)
CAPACITY	m3 0.5

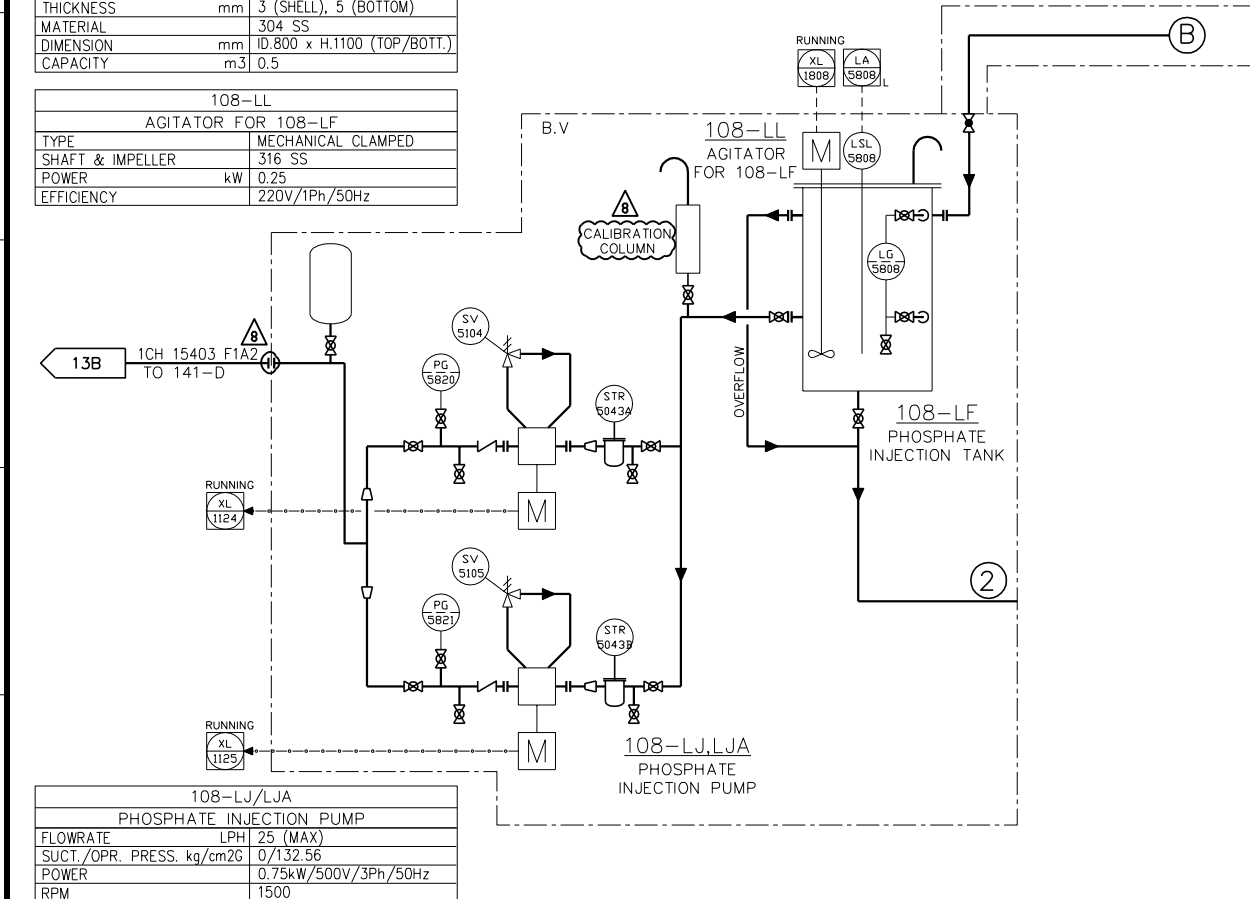
108-LL	
AGITATOR FOR 108-LF	
TYPE	MECHANICAL CLAMPED
SHAFT & IMPELLER	316 SS
POWER	kW 0.25
EFFICIENCY	220V/1Ph/50Hz

108-L  
PHOSPHATE  
INJECTION UNIT

108-LL  
AGITATOR FOR 108-LF

108-LF  
PHOSPHATE  
INJECTION TANK

108-LJ/LJA  
PHOSPHATE  
INJECTION PUMP



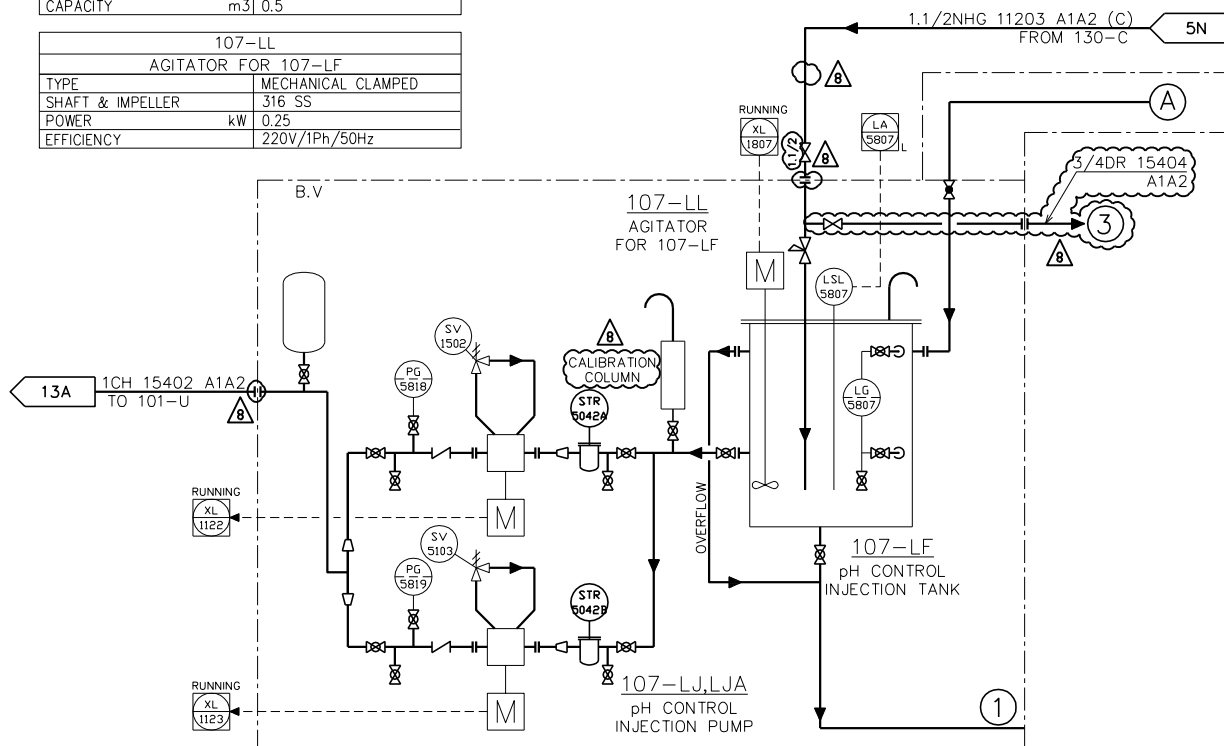
108-LJ/LJA	
PHOSPHATE INJECTION PUMP	
FLOWRATE	LPH 25 (MAX)
SUCT./OPR. PRESS.	kg/cm2G 0/132.56
POWER	0.75kW/500V/3Ph/50Hz
RPM	1500

107-LF	
pH CONTROL INJECTION TANK	
DES./OPER.TEMP	°C 70/AMB
DES./OPER.PRESS	kg/cm2G FULL OF WATER/ATM
THICKNESS	mm 3 (SHELL), 5 (BOTTOM)
MATERIAL	304 SS
DIMENSION	mm ID.800 x H.1100 (TOP/BOTT.)
CAPACITY	m3 0.5

107-LL	
AGITATOR FOR 107-LF	
TYPE	MECHANICAL CLAMPED
SHAFT & IMPELLER	316 SS
POWER	kW 0.25
EFFICIENCY	220V/1Ph/50Hz

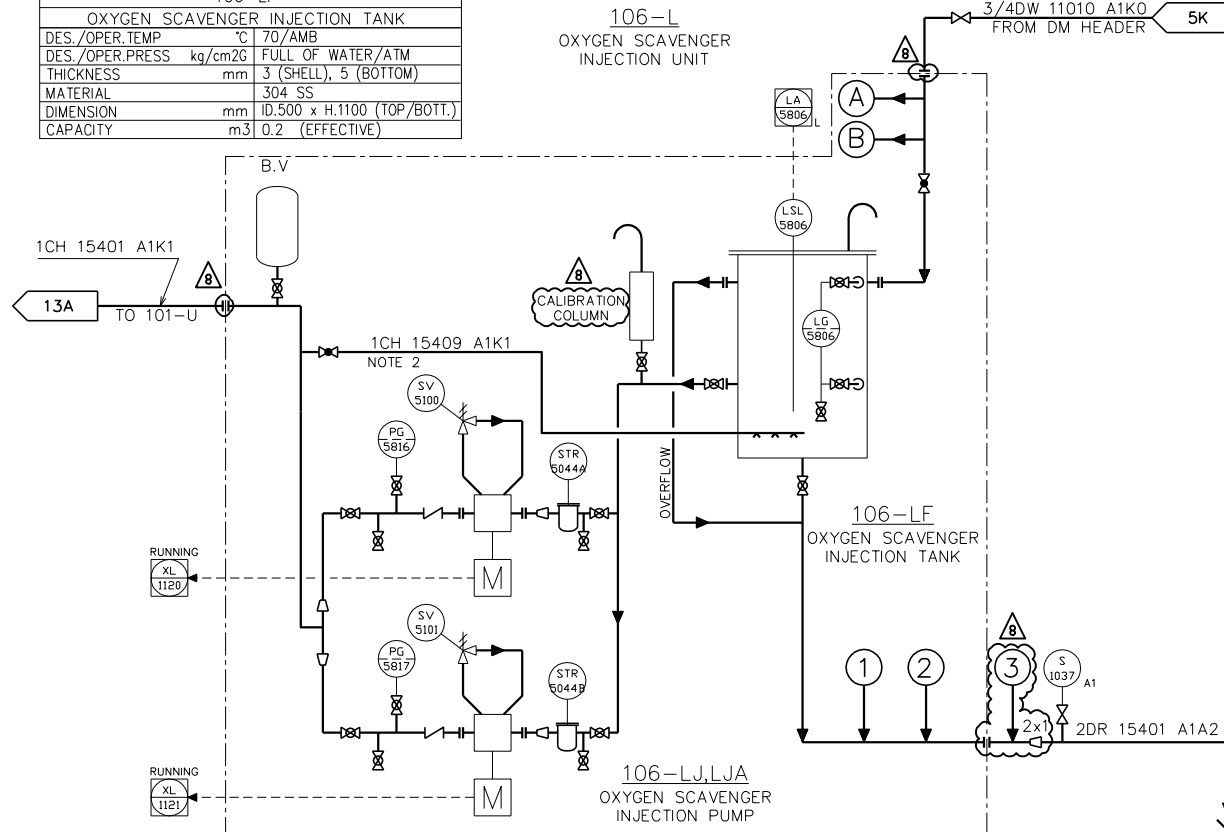
107-L  
pH CONTROL  
INJECTION UNIT

107-LJ/LJA	
pH CONTROL INJECTION PUMP	
FLOWRATE	LPH 31.5 (MAX)
SUCT./OPR. PRESS.	kg/cm2G 0/4.49
POWER	0.25kW/220V/1Ph/50Hz
RPM	1500



106-LF	
OXYGEN SCAVENGER INJECTION TANK	
DES./OPER.TEMP	°C 70/AMB
DES./OPER.PRESS	kg/cm2G FULL OF WATER/ATM
THICKNESS	mm 3 (SHELL), 5 (BOTTOM)
MATERIAL	304 SS
DIMENSION	mm ID.500 x H.1100 (TOP/BOTT.)
CAPACITY	m3 0.2 (EFFECTIVE)

106-L  
OXYGEN SCAVENGER  
INJECTION UNIT



106-LJ/LJA	
OXYGEN SCAVENGER INJECTION PUMP	
FLOWRATE	LPH 1.5 (MAX)
SUCT./OPR. PRESS.	kg/cm2G 0/4.49
POWER	0.25kW/220V/1Ph/50Hz
RPM	1500

# NOTES

- FOR GENERAL NOTES AND SYMBOLS SEE DRAWING 4A, 4B.
- FOR MIXING PURPOSE.

REV	DESCRIPTION	DATE	BY	CHK	APP	DATE	BY	CHK	APP
1	RE-ISSUED FOR CONSTRUCTION (AFC-3)	14/11/13	TS	ABA	DU	HCB	ANG	HN	US
2	RE-ISSUED FOR CONSTRUCTION (AFC-2)	25/06/13	TS	ABA	DU	HCB	AN	HN	US
3	RE-ISSUED FOR CONSTRUCTION (AFC-1)	10/04/13	TS	ABA	DU	HCB	AN	HN	US
4	ISSUED FOR CONSTRUCTION (AFC)	25/11/12	EB	ABA	DU	HN	LI	SH	US
5	RE-ISSUED FOR APPROVAL (AFD-1)	29/06/12	EB	ABA	DU	HN	LI	SH	US
6	ISSUED FOR APPROVAL (AFD)	22/06/12	EB	ABA	DU	HN	LI	SH	US
7	ISSUED FOR DETAIL DESIGN (AFD-2)	14/02/12	EB	ABA	DU	HN	LI	SH	US

PROJECT NAME : KALTIM-5 PROJECT  
2500 MTPD AMMONIA AND 3500 MTPD UREA  
BONTANG, EAST KALIMANTAN, INDONESIA  
CLIENT NAME : PT. PUPUK KALIMANTAN TIMUR  
Engineering Services by KBR Technical Services, Inc.

KBR	
Engineering Services by KBR Technical Services, Inc.	
THIS DOCUMENT/ SOFTWARE CONTAINS TECHNICAL INFORMATION THAT IS SUBJECT TO U.S. EXPORT CONTROL REGULATIONS, INCLUDING RESTRICTIONS ON THE EXPORT, SALE OR TRANSFER OF U.S. ORIGIN ITEMS (GOODS, TECHNOLOGY OR SOFTWARE) TO SANCTIONED/ EMBARGOED COUNTRIES, ENTITIES OR PERSONS. IT MAY NOT BE EXPORTED OR RE-EXPORTED EXCEPT AS AUTHORIZED UNDER APPLICABLE U.S. EXPORT CONTROL REQUIREMENTS.	
THIS DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO KELLOGG BROWN & ROOT. THIS INFORMATION IS TO BE HELD IN CONFIDENCE; NO DISCLOSURE, REPRODUCTION OR OTHER USE OF THIS DOCUMENT IS TO BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF KELLOGG BROWN & ROOT.	
THIS DRAWING EMBODIES PROPRIETARY INFORMATION OF TOYO ENGINEERING CORPORATION. THE DRAWING OR THE MATERIAL DESCRIBED THEREON MAY NOT BE COPIED OR DISCLOSED IN ANY FORM OR MEDIUM TO THIRD PARTIES FOR USE OTHER THAN THE PURPOSE FOR WHICH IT HAS BEEN PROVIDED HEREIN, OR IN PART IN ANY MANNER EXCEPT AS EXPRESSLY PERMITTED BY TOYO ENGINEERING CORPORATION.	
CONTRACTOR :	ISSUE MARK
TOYO ENGINEERING CORPORATION	14/Nov/13

CONTRACTOR WORK NUMBER : 10107 / BA096300 / 11-018-01

PIPING & INSTRUMENT FLOW DIAGRAM  
CHEMICAL INJECTION

SCALE : DWG. NO. K5-01-E1-PD-13D-T  
DOC. NO. K5-01-E1-PD-044-T SHEET 044/073 REV.8