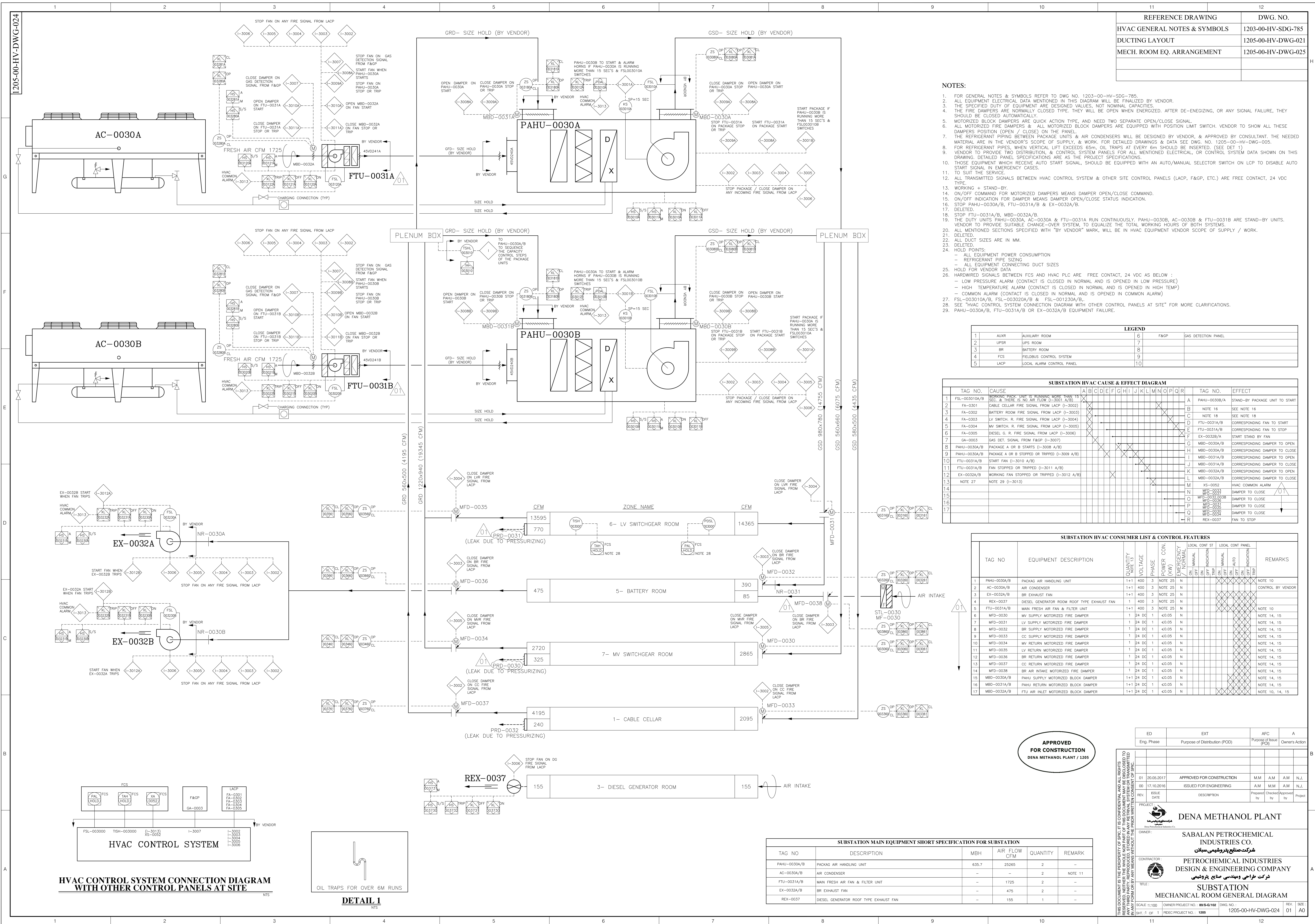




REFERENCE DRAWING	DWG. NO.
HVAC GENERAL NOTES & SYMBOLS	1203-00-HV-SDG-785
DUCTING LAYOUT	1205-00-HV-DWG-021
MECH. ROOM EQ. ARRANGEMENT	1205-00-HV-DWG-025

NOTES:

1. FOR GENERAL NOTES & SYMBOLS REFER TO DWG NO. 1203-00-HV-DWG-785.
2. ALL EQUIPMENT ELECTRICAL DATA MENTIONED IN THIS DIAGRAM WILL BE FINALIZED BY VENDOR.
3. THE SPECIFIED DUTY OF EQUIPMENT ARE DESIGNED VALUES, NOT NOMINAL CAPACITIES.
4. THE FIRE DAMPERS ARE NORMALLY CLOSED TYPE. THEY WILL BE OPEN WHEN ENERGIZED. AFTER DE-ENERGIZING, OR ANY SIGNAL FAILURE, THEY SHOULD BE CLOSED AUTOMATICALLY.
5. MOTORIZED BLOCK DAMPERS ARE QUICK ACTION TYPE, AND NEED TWO SEPARATE OPEN/CLOSE SIGNAL.
6. ALL MOTORIZED FIRE DAMPERS & ALL MOTORIZED BLOCK DAMPERS ARE EQUIPPED WITH POSITION LIMIT SWITCH. VENDOR TO SHOW ALL THESE DAMPERS POSITION (OPEN / CLOSE) ON THE PANEL.
7. THE REFRIGERANT PIPING BETWEEN PACKAGE UNITS & AIR CONDENSERS WILL BE DESIGNED BY VENDOR, & APPROVED BY CONSULTANT. THE NE MATERIAL ARE IN THE VENDOR'S SCOPE OF SUPPLY, & WORK. FOR DETAILED DRAWINGS & DATA SEE DWG. NO. 1205-00-HV-DWG-005.
8. FOR UNIT DUTY UNITS PAHU-0030A, FTU-0031A/B, EX-0032A/B, OIL TRAPS AT EVERY 6m SHOULD BE INSERTED. (SEE DET 1)
9. VENDOR TO PROVIDE TWO DISTRIBUTION, & CONTROL SYSTEM PANELS FOR ALL MENTIONED ELECTRICAL, OR CONTROL SYSTEM DATA SHOWN ON DRAWING. DETAILED PANEL SPECIFICATIONS ARE AS THE PROJECT SPECIFICATIONS.
10. THOSE EQUIPMENT WHICH RECEIVE AUTO START SIGNAL, SHOULD BE EQUIPPED WITH AN AUTO/MANUAL SELECTOR SWITCH ON LCP TO DISABLE START SIGNAL IN EMERGENCY CASES.
11. TO SUIT THE SERVICE.
12. ALL TRANSMITTED SIGNALS BETWEEN HVAC CONTROL SYSTEM & OTHER SITE CONTROL PANELS (LACP, F&GP, ETC.) ARE FREE CONTACT, 24 VDC.
13. WORKING + STAND-BY.
14. ON/OFF COMMAND FOR MOTORIZED DAMPERS MEANS DAMPER OPEN/CLOSE COMMAND.
15. ON/OFF INDICATION FOR DAMPER MEANS DAMPER OPEN/CLOSE STATUS INDICATION.
16. STOP PAHU-0030A/B, FTU-0031A/B & EX-0032A/B.
17. DELETED.
18. STOP FTU-0031A/B, MBD-0032A/B.
19. STOP PAHU-0030A, FTU-0031A/B, EX-0032A/B & FTU-0031A RUN CONTINUOUSLY. PAHU-0030B, AC-0030B & FTU-0031B ARE STAND-BY UNITS.
20. VENDOR TO PROVIDE SUTURE CHANGE-OVER SYSTEM, TO EQUALIZE THE TOTAL WORKING HOURS OF BOTH SYSTEMS.
21. ALL MENTIONED SECTIONS SPECIFIED WITH "BY VENDOR" MARK, WILL BE IN HVAC EQUIPMENT VENDOR SCOPE OF SUPPLY / WORK.
22. DELETED.
23. ALL DUCT SIZES ARE IN MM.
24. DELETED.
25. HOLD POINTS:
 - ALL EQUIPMENT POWER CONSUMPTION
 - REFRIGERANT PIPE SIZING
 - ALL EQUIPMENT CONNECTING DUCT SIZES
26. HOLD FOR VENDOR DATA.
27. HARDWIRED SIGNALS BETWEEN FCS AND HVAC PLC ARE : FREE CONTACT, 24 VDC AS BELOW :
 - LOW PRESSURE ALARM (CONTACT IS CLOSED IN NORMAL AND IS OPENED IN LOW PRESSURE)
 - HIGH TEMPERATURE ALARM (CONTACT IS CLOSED IN NORMAL AND IS OPENED IN HIGH TEMP)
 - COMMON ALARM (CONTACT IS CLOSED IN NORMAL AND IS OPENED IN COMMON ALARM)
28. PLC-001230A/B, FSL-003020A/B/B & FSL-001230A/B.
29. SEE "HVAC CONTROL SYSTEM CONNECTION DIAGRAM WITH OTHER CONTROL PANELS AT SITE" FOR MORE CLARIFICATIONS.
30. PAHU-0030A/B, FTU-0031A/B EX AND EX-0032A/B EQUIPMENT FAILURE.

LEGEND					
1	AUXR	AUXILIARY ROOM	6	F&P	GAS DETECTION PANEL
2	UPSR	UPS ROOM	7		
3	BR	BATTERY ROOM	8		
4	FCS	FIELDBUS CONTROL SYSTEM	9		
5	LACP	LOCAL ALARM CONTROL PANEL	10		

SUBSTATION HVAC CAUSE & EFFECT DIAGRAM																						
	TAG NO.	CAUSE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	TAG NO.	EFFECT
1	FSL-00300A/B	WORKING PACK. UNIT IS RUNNING MORE THAN 15 SEC. & THERE IS NO AIR FLOW (I-3001, A/9)																		A	PAHU-00308/A	STAND-BY PACKAGE UNIT TO START
2	FA-0301	CABLE CELLAR FIRE SIGNAL FROM LACP (I-3002)																		B	NOTE 16	SEE NOTE 16
3	FA-0302	BATTERY ROOM FIRE SIGNAL FROM LACP (I-3003)																		C	NOTE 18	SEE NOTE 18
4	FA-0303	LV SWITCH. R. FIRE SIGNAL FROM LACP (I-3004)																		D	FTU-0031A/B	CORRESPONDING FAN TO START
5	FA-0304	MY SWITCH. R. FIRE SIGNAL FROM LACP (I-3005)																		E	FTU-0031A/B	CORRESPONDING FAN TO STOP
6	FA-0305	DIESEL G. R. FIRE SIGNAL FROM LACP (I-3006)																		F	EX-00329A/B	START STAND-BY FAN
7	GA-0003	GAS DET. SIGNAL FROM F&GP (I-3007)																		G	MBD-0032A/B	CORRESPONDING DAMPER TO OPEN
8	PAHU-0030A/B	PACKAGE A OR B STARTS (I-3008 A/B)																		H	MBD-0032A/B	CORRESPONDING DAMPER TO OPEN
9	PAHU-0030A/B	PACKAGE A OR B STOPPED OR TRIPPED (I-3009 A/B)																		I	MBD-0031A/B	CORRESPONDING DAMPER TO OPEN
10	FTU-0031A/B	START FAN (I-3010 A/B)																		J	MBD-0031A/B	CORRESPONDING DAMPER TO OPEN
11	FTU-0031A/B	FAN STOPPED OR TRIPPED (I-3011 A/B)																		K	MBD-0032A/B	CORRESPONDING DAMPER TO OPEN
12	EX-0032A/B	WORKING FAN STOPPED OR TRIPPED (I-3012 A/B)																		L	MBD-0032A/B	CORRESPONDING DAMPER TO OPEN
13	NOTE 27	NOTE 29 (I-3013)																		M	XS-0052	HVAC COMMON ALARM
14																				N	MBD-0033	DAMPER TO CLOSE
15																				O	MBD-0032, 0035, 0038	DAMPER TO CLOSE
16																				P	MBD-0031	DAMPER TO CLOSE
17																				Q	MBD-0030	DAMPER TO CLOSE
																				R	MBD-0034	DAMPER TO CLOSE
																				R	RED-0037	FAN TO STOP

SUBSTATION HVAC CONSUMER LIST & CONTROL FEATURES														REMARKS
TAG NO	EQUIPMENT DESCRIPTION	QUANTITY	VOLTAGE	PHASE	POWER CON.	EMERGENCY NORMAL	LOCAL CONTROL	LOCAL CONTROL	LOCAL CONTROL	LOCAL CONTROL	LOCAL CONTROL	LOCAL CONTROL	LOCAL CONTROL	
							ON MANUAL	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	ON OFF	
							ON TIE	ON TIE	ON TIE	ON TIE	ON TIE	ON TIE	ON TIE	
1	PAHU-0030A/B	PACKAG AIR HANDLING UNIT	1+1	400	3	NOTE 25	N							NOTE 10
2	AC-0030A/B	AIR CONDENSER	1+1	400	3	NOTE 25	N							CONTROL BY VENDOR
3	EX-0032A/B	BR EXHAUST FAN	1+1	400	3	NOTE 25	N							
4	REX-0037	DIESEL GENERATOR ROOM ROOF TYPE EXHAUST FAN	1	400	3	NOTE 25	N							
5	FTU-0031A/B	MAIN FRESH AIR FAN & FILTER UNIT	1+1	400	3	NOTE 25	N							NOTE 10
6	MFD-0030	MV SUPPLY MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
7	MFD-0031	LV SUPPLY MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
8	MFD-0032	BR SUPPLY MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
9	MFD-0033	CC SUPPLY MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
10	MFD-0034	MV RETURN MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
11	MFD-0035	LV RETURN MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
12	MFD-0036	BR RETURN MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
13	MFD-0037	CC RETURN MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
14	MFD-0038	LV AIR INTAKE MOTORIZED FIRE DAMPER	1	24	DC	1	0.05	N						NOTE 14, 15
15	MBD-0030A/B	PAHU SUPPLY MOTORIZED BLOCK DAMPER	1+1	24	DC	1	0.05	N						NOTE 14, 15
16	MBD-0031A/B	PAHU RETURN MOTORIZED BLOCK DAMPER	1+1	24	DC	1	0.05	N						NOTE 14, 15
17	MBD-0032A/B	FTU AIR INLET MOTORIZED BLOCK DAMPER	1+1	24	DC	1	0.05	N						NOTE 10, 14, 15

ED	EXT	AFC	A
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Owner's Action

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			01	20.05.2017	APPROVED FOR CONSTRUCTION	M.M	A.M	A.M	N.J.
			07	17.10.2016	ISSUED FOR ENGINEERING	A.M			N.J.
			REV.	ISSUE DATE	DESCRIPTION	Prepared by	Checked by	Approved by	Project
PROJECT									
 Dena Petrochemical Industries Co.			DENA METHANOL PLANT						
OWNER:			SABALAN PETROCHEMICAL INDUSTRIES CO. شرکت صنایع پتروشیمی سابالان						
CONTRACTOR:			PETROCHEMICAL INDUSTRIES DESIGN & ENGINEERING COMPANY شرکت طراحی و مهندسی صنایع پتروشیمی						
TITLE:			SUBSTATION MECHANICAL ROOM GENERAL DIAGRAM						
SCALE: 1:100		OWNER PROJECT NO. : 89-S-Q-102	DWG. NO. :		1205-00-HV-DWG-024		REV. 01	SIZE: A0	
SHEET NO. OF 1		PROJECT PROJECT NO. : 1205							

SUBSTATION MAIN EQUIPMENT SHORT SPECIFICATION FOR SUBSTATION					
TAG_NO	DESCRIPTION	MBH	AIR_FLOW CFM	QUANTITY	REMARK
PAHU-0030A/B	PACKAG AIR HANDLING UNIT	635.7	25265	2	-
AC-0030A/B	AIR CONDENSER	-	-	2	NOTE 11
FTU-0031A/B	MAIN FRESH AIR FAN & FILTER UNIT	-	1725	2	-
EX-0032A/B	BR EXHAUST FAN	-	475	2	-
REX-0037	DIESEL GENERATOR ROOF TYPE EXHAUST FAN	-	155	1	-