

Aerator Roots Blower

Energy Savings and Lubrication Improvement

The Equipment Information



Na	PARTS NAME	MATERIAL	Na	PARTS NAME .	MATERIAL	No.	PARTS NAME	MATERIAL
1	CASTING	FC 25	9	ROTOR	FC 30	B1	BEARING	-
2	SIDE COVER	FC 25	10	GEAR	SCM 4	B2	BEARING	
3	FRONT COVER	FC 25	11	GEAR WASHER	S35C	01	OIL SEAL	SBXI 456812
4	GEAR COVER	FC 25	12	SPLATTER	SS41P	Pl	O-RING	G115
5	BEARING HOLDER	FC 25	13	BEARING NUT	AN10	¥1.	V-RING	¥45
6	BEARING COVER	SS41P	14	BEARING WASHER	AW10			1
7	COOLING PIPE	ACRYL	15	FLINGER	NER	-		and the second
8	OIL GAUGE	ACRYL	1					1

Machine: Aerator Root Blower Driven by: ABB Motor, 37 kW(72 Amp) Serviced: N/A hrs Oil Capacity: 8 Liters Lube Oil Type: Shell Omala S4 GX 220



Manufacturer: Ito Engineering Co., Ltd. Volt: 380V / 3Phase3Wire Energy Cost: 3.35 THB/Unit Oil Serviced: N/A hrs. Oil Analysis: No

Oil Change Interval: 12 Months Vibration Issue: High

The Equipment Information



Machine: Aerator Root Blower Driven by: ABB Motor, 37 kW(72 Amp) Serviced: N/A hrs Oil Capacity: 8 Liters Lube Oil Type: Shell Omala S4 GX 220 Manufacturer: Ito Engineering Co., Ltd. Volt: 380V / 3Phase3Wire Energy Cost: 3.35 THB/Unit Oil Serviced: N/A hrs. Oil Analysis: No

Oil Change Interval: 12 Months Vibration Issue: High



Before: 28 Apr – 04 May 2017







SAVINGS CALCULATION





SAVINGS CALCULATION

Date:	Oil	Amp	kW	
28 Apr 2017	Shell Omala S4 GX 220	66.36	37.12	
05-09 May 2017	RP Synfilm GT 220	57.85	32.36	

- Savings (only due to Electric Consumption) = 12.82% 4.76 kW X 12 hrs X 330 days (11 Months) = 18,849.6 kW/year 18,849.6 X 3.35 Bath
- **Cost of Royal Purple Oil (8 Liter)**

- = 63,146.16 THB
- = 4,800 THB
- Return Of Investment with Royal Purple Synfilm GT 220 < 1 Month



IMPLEMENTATION FOR 12 UNITS

Number of	Summary	Energy Cost	Reduction	kWh	Savings	
Equipments	(kW)	(THB)			(THB)	
			10.0%	175,824	589,010.4	
12 pcs	444	5,890,104	12.82%	225,406.4	755,111,3	
			14.0%	246,153.6	824,614.6	

- Total Investment = 57,600 THB
- Payback Period = 1 Month
 - Working hours = 12 hrs x 330 days / year
 - Energy Cost = 3.35 THB/ kWh



Temperature Reduction: ~ 6.0°C

BL7004A NDE – Before









Max. 75.95°C



Temperature Reduction: ~ 11.88°C

BL7004A NDE – Before







Temperature Reduction: ~ 9.32°C

BL7004A NDE – Before











Max. 72.13°C



Temperature Reduction: ~ 4.74°C

BL7004A NDE – Before

BL7004A NDE - After01



Temperature Reduction: ~ 12.14°C

BL7004A NDE – Before

BL7004A NDE – After02



Temperature Reduction: ~ 9.03°C

BL7004A NDE – Before

BL7004A NDE – After03





Temperature Comparison Between BL7004 Series

BL7004A with RP

BL7004C with "S" Synthetic





Temperature Comparison Between BL7004 Series

BL7004A with RP

BL7004C with "S" Synthetic





Foaming in Lubricating Oil: 16-May-2017





Shell Omala S4 GX 220 4,000 hrs



Foaming in Lubricating Oil: 28-June-2017









Tough Jobs Require Tough Solution.