

SECTION 5 - SPECIFICATION FOR SERVICE AND MAINTENANCE

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SECTION 5 - SPECIFICATION FOR SERVICE AND MAINTENANCE

5.1 GENERAL

The work covered by this Specification is for the supply of all materials, labour and necessary incidentals for the comprehensive service and maintenance of the complete Lift System.

All work to be performed under this Specification shall be in accordance with the best commercial practice and must be in strict accordance with this specification.

5.2 WORKMANSHIP AND MATERIALS

The work described in this Specification shall be performed by workmen skilled in the service, maintenance and repair of the Lift System and shall be executed in accordance with the best commercial practice.

All materials to be supplied in connection with work under this Specification shall be new and unused, and shall generally be of the best quality as regards manufacture and performance.

5.3 SUPERVISION

Lift Contractor shall have a Technician in charge of the service, maintenance and repair work to be carried out under this Specification. This Technician must be thoroughly competent in supervising the service, maintenance and repair of Lifts of all types and shall be in the employment of Lift Contractor, and acceptable to the Superintending Officer.

Lift Contractor shall have in his direct capacity employ workmen who are especially skilled in the service, maintenance and repair of Lifts of all types.

5.4 SCOPE OF WORK

The work covered under this Specification is to service and maintain all machinery and equipment comprising the complete Lift System. The service and maintenance of the complete Lift System shall be in strict accordance to the servicing and maintenance schedule as set out in Clause 5.5 below.

Lift Contractor shall immediately repair any defect in any part or parts of the machinery or equipment of the complete Lift System observed during routine inspection and service.

Lift Contractor shall also provide emergency service for a period of 24hrs if required to do so by the Superintending Officer or Client Department. For mantrap incident, the Contractor shall arrive at site within 30 minutes after complained.

5.5 SERVICING AND MAINTENANCE SCHEDULE

The Lift Contractor shall inspect and service all machinery and equipment comprising the complete Lift System in accordance with the periodic service schedule attached herewith and at the time of such inspections shall perform when necessary the normal services listed below:-

Execute the following:

- i) Regularly and systematically examine, adjust, lubricate as required, and if conditions warrant, repair or replace with genuine parts only:

Machine, motor and controller parts including worms gears (for Geared Machine), thrust bearings, brake magnet coils or brake motors, brake shoes, windings, commutators, rotating elements, contacts, coils, resistance for operating and motor circuits, magnets frame and other mechanical parts.



- ii) Clean and adjust as necessary all machines, ropes, sheaves, fixing, controllers, gates, doors, locks, wiring, motors and safety appliances.
- iii) Provide necessary materials and renew or replenish as required grease, oil and waste, driving motors and inverters, lamps for signals, indicators and lighting, fuse elements for control signals and transformers.
- iv) To renew guide shoe gibs or guide rollers when necessary to ensure smooth and quiet operation and, except where roller guides are used to keep the guide rails properly lubricated.
- v) To renew all wire ropes as often as is necessary to maintain an adequate factor of safety to equalize tension on all hoisting ropes, and repair or replace travelling cables.
- vi) To examine, lubricate, adjust and if conditions warrant, repair or replace all accessory equipment furnished and installed by Lift Contractor with exceptions as stated hereinafter.
- vii) To examine periodically all safety devices and governors and customary annual safety tests.
- viii) To attend all Jabatan Keselamatan Dan Kesihatan Pekerjaan (JKKP) inspection.

Inspect and submit a written report to the Superintending Officer of the periodic service schedule which covers the following:-

- i) Condition of the car structure fixings, guides and counter weights
- ii) Condition of ropes, leading sheaves and fixings
- iii) Condition of safety gear
- iv) Condition of governor
- v) Condition of landing door or gate locking devices
- vi) Condition of controller
- vii) Condition of brake
- viii) Condition of reduction gear (for Geared Machine ONLY);
 - thrust bearings
 - main bearings
 - worm gear
 - spur wheel
- ix) Condition of gear oil (for Geared Machine ONLY)
- x) Condition of terminal limit switches
- xi) Condition of final limit switches
- xii) Condition of wiring
- xiii) Condition of motors
- xiv) Date ropes last renewed
- xv) Date brake linings last renewed
- xvi) Date gear oil last renewed
- xvii) Date safety gear last tested
- xviii) Details of any repairs required

5.6 SERVICE AND MAINTENANCE RECORDS

Lift Contractor shall provide a service and maintenance record book for the complete Lift System. This record book shall be kept in the Machine Room/owner of the Lift System and brief details of all service, maintenance and repairs carried out on the complete Lift System shall be entered by Lift Contractor into this book for checking purposes. The address and telephone number of Lift Contractor's service station shall also be entered into this record book to facilitate emergency service calls.

Lift Contractor shall also keep an accurate detailed record in duplicate of all service, maintenance and repair work carried out. This record shall be in the form of a Maintenance/Repair Sheet, and



shall be countersigned by the Superintending Officer each time the Lift System is attended to by Lift Contractor.

5.7 RATES FOR SERVICE AND MAINTENANCE

The rates for the service and maintenance of the complete Lift System shall be as shown in the Schedule of Price for this contract.

These rates shall be quoted for by Lift Contractor at the time he submits his tender, and shall hold good for the period of **THREE (3) years** commencing from the end of the Defects and Liability period. Lift Contractor may be required to enter into a contract for service and maintenance of Lift System (a copy of this Standard Form may be inspected at the office of the Pengarah Cawangan Kejuruteraan Mekanikal, Ibu Pejabat J.K.R., Kuala Lumpur).

5.8 LIFT INSPECTION REPORT

Make of Lift: _____ Location: _____ Lift No: _____

Certificate of Fitness No: _____ Date of Inspection: _____

Date of Issue: _____

ITEM	EQUIPMENT	CONDITION
1.	Car structure, fixing, guides & counter weights	
2.	Ropes, Leading Sheaves and Fixings	
3.	Safety Gear	
4.	Governor	
5.	Landing Door and Gate Locking Devices	
6.	Controller	
7.	Brake	
8.	Reduction Gear (for geared machine only):	
	Thrust Bearings	
	Main Bearings	
	Worm Gear	
	Spur Wheel	
9.	Gear Oil (for geared machine only)	
10.	Terminal Limit Switches	
11.	Final Limit Switches	
12.	Wiring	
13.	Motors	
14.	Ropes last renewed date:	
15.	Brake Linings renewed date:	
16.	Gear Oil, last renewed date:	
17.	Safety Gear last tested dated;	
18.	Details of repairs required:	
19.	Other Remarks:	

Signature of Lift Competent Person: _____

Name of Lift Competent Person: _____

Company Stamp: _____ Date: _____

Signature of Superintending Officer/Owner Representative: _____

Name: _____

Stamp: _____ Date: _____



5.9 PERIODIC SERVICE AND MAINTENANCE SCHEDULE

No.	Item	Frequency				
		Every Month	Every 2 Month	Every 3 Month	Every 6 Month	Every Year
1	MOTOR ROOM					
a	Check for abnormal noise, vibration and temperature rise of all machines. If abnormal, determine the source, adjust, repair or replace as necessary.	X				
b	Inspect all bearings and bushes. Lubricate or replace as necessary.	X				
c	Inspect gearbox oil level, condition, leaks, play and backlash. Adjust, repair or replace as necessary.	X				
d	Inspect the over speed governor for abnormal noise and vibration. Clean, repair or replace as necessary.	X				
e	Inspect the condition of all relays, contactors and contact inside the controller. Clean, repair or replace as necessary.	X				
f	Inspect all the fuses and terminal wires. Retighten or replace as necessary.	X				
g	Inspect EBOPS – the condition and operation of the battery, emergency light and ventilation fan. Replace as necessary.	X				
h	Inspect any leakage from traction machine cover gasket and oil seals. Repair or replace as necessary.	X				
i	Clean the traction machine and lift controller.	X				
j	Inspect the controller cooling operation. Replace as necessary.	X				
k	Check and adjust speed governor and compensating pulley.	X				
l	Clean controller and its component.	X				
m	Clean brake wheels.	X				
n	Clean and adjust controller switches.		X			
o	Inspect and adjust brake system as necessary.		X			



No.	Item	Frequency				
		Every Month	Every 2 Month	Every 3 Month	Every 6 Month	Every Year
p	Check the governor switches.			X		
q	Check and record the incoming voltage. If abnormal, trace the faults and rectify as necessary.			X		
r	Check and record the controller voltage. If abnormal, trace the faults and rectify as necessary.			X		
s	Check the operation of safety gears. Adjust, repair or replace as necessary.				X	
t	Grease the secondary sheaves, car top sheaves and counterweight top sheaves.				X	
u	Check the condition of worm gears and thrust bearing of the gear boxes (geared m/c only). Lubricate or replace as necessary.					X
v	Check and tighten screws of controllers.					X
w	Dismantle, clean and adjust the electro-magnetic brakes of gearless machines.					X
x	Test all safety devices. Repair or replace as necessary.					X
2	HOIST WAY					
a	Check movement of door switches and emergency stop switch. Adjust or replace as necessary.	X				
b	Check operation of weighing devices. Repair or replace as necessary.	X				
c	Inspect the condition of guide rails. Top up rail lubricators as necessary.	X				
d	Clean hoist ways, beams, slow-down cams, outside cages, rails and counterweight rails.	X				
e	Clean main sheaves, secondary sheaves and rope sheaves on car tops and counterweight tops.	X				
f	Clean ropes. Oil if necessary.	X				
g	Inspect the operation of ventilation fan. Clean or replace as necessary.	X				
h	Clean and adjust terminal limit switches		X			



No.	Item	Frequency				
		Every Month	Every 2 Month	Every 3 Month	Every 6 Month	Every Year
	and position switches. Check rubber rollers of terminal limit switches. Adjust or replace as necessary.					
i	Check travelling cables condition and alignment. Adjust or replace as necessary.		X			
j	Check movement of limit switches. Adjust, repair or replace as necessary.		X			
k	Check the operation of terminal limit switches and final limit switches. Replace if necessary.			X		
l	Check the traction rope for broken wires, wear, elongation and even tension. Replace if necessary.			X		
m	Check the compensating chains or ropes. Adjust, repair or replace as necessary.				X	
n	Check the wear of guide shoes of cars and counterweights. Replace as necessary.				X	
o	Clean all the wiring in the junction boxes of every floor and car cages. Tighten all screw and check the condition of cables at conduit inlets and outlets.					X
3	LIFT CAR					
a	Check indicator lamps and indicators. Replace as necessary.	X				
b	Check the annunciator panel and car lights. Repair or replace as necessary.	X				
c	Check the alarm bell, intercom and voice synthesizer. Repair or replace as necessary.	X				
D	Check the operation of emergency light and fan. Repair or replace as necessary.	X				
E	Check levelling difference, brake slippage, acceleration, deceleration and riding comfort.	X				
F	Check movement of car control buttons, switches, etc. Repair or replace as necessary.	X				
g	Inspect the function of car safety device	X				



No.	Item	Frequency				
		Every Month	Every 2 Month	Every 3 Month	Every 6 Month	Every Year
	(safety edge/photocell/full height sensor). Repair or replace as necessary.					
H	Clean and check push buttons of car control panels. Repair or replace as necessary.		X			
I	Clean and adjust safety gears.		X			
J	Clean and adjust door hangers, door rails, interior of hanger case. If necessary, adjust the rollers, car door hangers, door connecting ropes and chains.		X			
K	Check door shoes. Replace as necessary.		X			
L	Check and adjust interior door switches. Replace worn parts if necessary.		X			
M	Check and lubricate the bearings of door motors.				X	
4	LIFT PIT					
A	Inspect lift pit cleanliness and ensure the lift pit is in dry condition.	X				
B	Check the compensating pulley and compensating rope. Lubricate as necessary.	X				
C	Inspect the clearance of compensating pulley. Adjust as necessary.	X				
D	Clean and adjust car and counterweight guide shoes. Adjust if necessary.		X			
E	Check oil of oil buffers. Top-up as necessary.				X	
F	Check buffer spring. Repair or replace as necessary.				X	
5	LANDING DOOR & LIFT LOBBY					
a	Check and adjust door operators, door openings mechanisms and door levers.	X				
b	Clean, oil and adjust door closures and levers.	X				
c	Check and clean the hall buttons. Repair or replace as necessary.				X	



No.	Item	Frequency				
		Every Month	Every 2 Month	Every 3 Month	Every 6 Month	Every Year
6	AUTOMATIC RESCUE DEVICE (ARD)					
a	Test the operation of ARD (power failure test). Repair or replace as necessary.	X				
b	Inspect the battery condition and electrolyte level. Top-up or replace as necessary.	X				
c	Check the battery charger unit. Replace as necessary.	X				
7	CENTRAL SUPERVISORY PANEL					
a	Inspect the operation of central supervisory panel and intercom master unit. Repair or replace as necessary.	X				



5.10 AGREEMENT FOR COMPREHENSIVE SERVICE AND MAINTENANCE

Within thirty (30) days from the receipt of the Letter of Acceptance (LA), the Contractor shall sign an agreement for comprehensive service and maintenance of the lift. The sample of the agreement as attached in Appendix C.

5.11 SCHEDULE OF RATES FOR COMPREHENSIVE SERVICE AND MAINTENANCE OF LIFT SYSTEM

The tenderer is to note that the prices quoted for this shall not be included in the tender price and it will be binding in the event the government decides to accept it immediately after the warranty period.

These prices should not be subjected to variation for the period of **THREE (3) YEARS** after warranty period.

RATES BASED ON CONTRACT PERIOD OF THREE (3) YEARS ONLY

For the comprehensive service and maintenance of the complete lift system and ancillary equipment at the above premises in accordance with the specified maintenance specifications	Charges per year (RM) -----
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Tandatangan pentender: _____

Nama dan alamat:
(dengan cop) _____

Tarikh: _____

Tandatangan saksi: _____

Nama dan alamat: _____

Tarikh: _____

----- **END OF SECTION 5** -----