

JOB SPECIFICATION AND SKILL TEST

JOB TITLE : **MECHANICAL FITTER, L-2**
SECTOR : **MECHANICAL ENGINEERING**
SUB SECTOR : **GENERAL MAINTAINANCE**

COUNCIL FOR TECHNICAL EDUCATION AND VOCATIONAL TRAINING
NATIONAL SKILL TESTING BOARD

MADHYAPUR THIMI - 17, SANOTHIMI, BHAKTAPUR

25th June 2006 (2063.03.11)

The National Skill Standard and Test was developed by

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Recommended by Mechanical Technical Sub Committee.

25th June 2006 (2063.03.11)

The National Skill Standard and Test was revised by

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Recommended by Mechanical Technical Sub Committee.

29th Jun 2013 (2070.03.15)

JOB SPECIFICATION

1	JOB TITLE: Mechanical fitter LEVEL: 2
2	JOB DESCRIPTION: Mechanical fitter level – 2: Inspects and tests transmission belts, conveyer belts, chain sprockets, gears, bearings, bushes, couplings, oil seals, and necessary equipment for defects/faults; services and repairs/replaces the defective parts and also performs preventative maintenance of machine components and equipment as listed.
3	<u>LIST OF TASKS:</u> <ol style="list-style-type: none">1. Inspecting and testing for defects/faults and identifying the problem.2. Dismantling machine parts/components.3. Maintaining/repairing/replacing parts/components.4. Assembling parts/components.5. Performing preventative maintenance on machines and equipment.6. Testing the operation.
4	QUALIFYING NOTES (Entry Requirements, etc.) Physical Requirement: Normal health Educational Requirement: Able to read and understand specification Examination requirements: This job specification requires performance as well as written test with covering related technical knowledge parts.

TASK SPECIFICATION	
5	<p>TASK NO: 1</p> <p>Inspecting and testing for defects/faults and identifying the problem.</p> <p style="text-align: right;">JOB TITLE: Mechanical fitter, L - 2</p>
6	<p>TASK ELEMENTS</p> <ul style="list-style-type: none"> 1.1 Consults manufacturer's instructions/drawings/manuals/information about the proper functioning of the parts/components. 1.2 Determines methods of sequence of operation for inspecting and testing. 1.3 Selects appropriate tools and equipment. 1.4 Manipulates controls to determine system of machines/equipment performance. 1.5 Adjusts/sets or regulates the equipment settings. 1.6 Detects fault, logs and writes Equipment History Card (EHC). 1.7 Tags/marks the identified faults in the machinery/equipment.

TASK SPECIFICATION	
7	<p>TASK PERFORMANCE REQUIREMENTS</p> <p>Vernier calipers and callipers</p> <p>Micrometers</p> <p>Feeler gauge</p> <p>Dial gauge</p> <p>Hand tools set</p> <p>Tools specified in the manual of the equipment</p> <p>Warning signs</p>

8	TASK PERFORMANCE STANDARDS <ul style="list-style-type: none"> - Machine/equipment inspected and test operated safely to determine the faults. - Appropriate tools and equipment selected. - Settings and other regulators manipulated safely to required position. - Fault detected, logged and Equipment History Card (EHC) filled. - Identified faults and tagged/marked. 				
TASK TRAINING DATA					
9	TASK NO. 1				
10	T.E No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGIENE
	1.1 1.2 1.3 1.4 1.5 1.6 1.7	Knowledge of the scope of maintenance/service/repair work involved. Knowledge of principle of testing and fault findings. Knowledge about the controls of the equipment and its general performance. Knowledge of procedure for determining the faults. Knowledge of use of measuring instruments for testing and faultfindings. Knowledge about standard diagram at flow charts / recording system. Knowledge about preventive maintenance of machine and equipment.		Interpret sketches, drawings symbols and instructions in the concern manuals.	Hazards due to wrongly manipulated controls. Follow the rules and regulation of common safety.

TASK PERFORMANCE TEST (SKILL ASSESSMENT)

11	<p>TASK TITLE: Inspecting and testing for defects/faults and identifying the problem.</p> <p>TASK NO: 1</p>	<p>LOCATION OF TEST:</p> <p>CANDIDATE'S NAME:</p> <p>EVALUATOR'S NAME:</p>	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (COMMENT)
	<p>DID THE CANDIDATE?</p> <p>1.1 Consult manufacturer's instructions/drawings/manuals/information about the proper functioning of the components.</p> <p>1.2 Determine methods of sequence of operation for inspecting and testing.</p> <p>1.3 Select appropriate tools and equipment.</p> <p>1.4 Manipulate the controls to determine system of machines/equipment performance.</p> <p>1.5 Adjust/set or regulates the equipment settings.</p> <p>1.6 Detect fault, log and fill Equipment History Card (EHC).</p> <p>1.7 Tag/mark the identified faults in the machinery/equipment.</p>		

TASK SPECIFICATION	
5	<p>TASK NO: 2</p> <p>Dismantling machine parts/components.</p> <p style="text-align: right;">JOB TITLE: Mechanical Fitter, L -2</p>
6	<p>TASK ELEMENTS</p> <p>2.1 Consults instructions/drawings/manufacturer's manuals/information. 2.2 Determines methods and sequence of operation for dismantling. 2.3 Dismantles the equipment as required. 2.4 Identifies the defect.</p>

TASK SPECIFICATION	
7	<p>TASK PERFORMANCE REQUIREMENTS</p> <p>Hand tools set Mallet Drifting pin Lifting devices Cleansing agents Tools specified in the manual of the equipment</p>
8	<p>TAKS PERFORMANCE STANDARDS</p> <ul style="list-style-type: none"> - The component dismantled without damage. - Defects identified.

TASK TRAINING DATA					
9	TASK NO.2				
10	T.E No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGIENE
	2.1 2.1.1	Knowledge on rules of maintenance. Knowledge of procedure of dismantling component or equipment.		Know the coding procedure of dismantling parts. Know spare parts codes.	Malfunction of machine and equipment due to unmatched parts.
	2.2	Knowledge of identifying techniques of finding defects.			

TASK PERFORMANCE TEST (SKILL ASSESSMENT)			
11	TASK TITLE: Dismantling machine parts/components TASK NO: 2		LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:
12	TEST FACTORS AND ITEMS		STANDARD MET
	DID THE CANDIDATE? 2.1 Consult instructions/drawings/manufacturer's manuals/information. 2.2 Determine methods and sequence of operation for dismantling. 2.3 Dismantle the equipment as required. 2.4 Identify the defect. 2.5 Finish the job within specified time.		STANDARD NOT MET (COMMENT)

TASK SPECIFICATION	
5	<p>TASK NO: 3</p> <p>Maintaining/repairing/replacing parts/components. JOB TITLE: Mechanical Fitter, L-2</p>
6	<p>TASK ELEMENTS</p> <p>3.1 Consults manuals, drawings and specifications. 3.2 Determines methods and sequence of operation for maintaining and repairing. 3.3 Performs the required operation for maintaining and repairing. 3.4 Maintains/services/replaces the parts as per requirement.</p>

TASK SPECIFICATION	
7	<p>TASK PERFORMANCE REQUIREMENTS</p> <p>Vernier caliper and callipers Micrometers Feeler gauge Dial gauge Hand tools set Tools specified in the manual of the equipment</p>
8	<p>TAKS PERFORMANCE STANDARDS</p> <ul style="list-style-type: none"> - Manuals, drawings and specifications consulted. - Methods and sequence of operation determined for maintaining and repairing. - Required operation performed for maintaining and repairing. - Parts maintained/serviced/ replaced as required.

TASK TRAINING DATA					
9	TASK NO. 3				
10	T.E No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGIENE
	3.1	Knowledge of basic repair and maintenance.		Interpret drawings.	
	3.2	Knowledge of use of measuring instruments.			
	3.3	Knowledge of proper use of hand tools and tools specified by manufacturer.			
	3.4	Knowledge of spare parts and maintaining/servicing/replacing parts.			

ASK PERFORMANCE TEST (SKILL ASSESSMENT)				
11	TASK TITLE: Maintaining/repairing/replacing parts/components. TASK NO: 3		LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS		STANDARD MET	STANDARD NOT MET (COMMENT)
	DID THE CANDIDATE? 3.1 Consult manuals, drawings and specifications. 3.2 Determine methods and sequence of operation for repairing. 3.3 Perform required operations for repairing. 3.4 Replace parts/components.			

TASK SPECIFICATION	
5	<p>TASK NO: 4</p> <p>Assembling the parts/components.</p> <p style="text-align: right;">JOB TITLE: Mechanical Fitter, L-2</p>
6	<p>TASK ELEMENTS</p> <p>4.1 Consults drawings/manufacturer's manuals/information.</p> <p>4.2 Determines methods and sequence of operation for assembling.</p> <p>4.3 Assembles the equipment as required.</p> <p>4.4 Sets/adjusts for proper functioning.</p> <p>4.5 Lubricates as required.</p>

TASK SPECIFICATION	
7	<p>TASK PERFORMANCE REQUIREMENTS</p> <p>Hand tools set</p> <p>Mallet , Drifting pin</p> <p>Lifting devices</p> <p>Vernier caliper and callipers</p> <p>Micrometers</p> <p>Feeler gauge, Dial gauge</p> <p>Rust losers</p> <p>Degreasing bath</p> <p>Tools specified in the manual</p>
8	<p>TAKS PERFORMANCE STANDARDS</p> <ul style="list-style-type: none"> - Methods and sequence of operation determined for assembling. - Equipment assembled as required. - Set/adjusted for proper functioning. - Lubricated as required.

TASK TRAINING DATA					
9	TASK NO. 4				
10	T.E No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGIENE
	4.1	Knowledge of determining methods and sequence of operation for assembling.		Interpret drawings.	Maintain tidiness of work area
	4.2	Knowledge of assembling procedure of equipment.			
	4.3	Knowledge of setting/adjusting for proper functioning.			
	4.4	Knowledge of gaskets, gland packings, seals and adhesives.			
	4.5	Knowledge of lubricants and lubricating.			

TASK PERFORMANCE TEST (SKILL ASSESSMENT)			
11	TASK TITLE: Assembling the parts/components.		LOCATION OF TEST:
	TASK NO: 4		CANDIDATE'S NAME:
			EVALUATOR'S NAME:
12	TEST FACTORS AND ITEMS		STANDARD MET
	DID THE CANDIDATE?		STANDARD NOT MET (COMMENT)
	4.1 Consult drawings/manufacturer's manuals/information.		
	4.2 Determine methods and sequence of operation for assembling.		
	4.3 Assemble the equipment as required.		
	4.4 Set/adjust for proper functioning.		
	4.5 Lubricate as required.		

TASK SPECIFICATION	
5	<p>TASK NO: 5 Performing preventative maintenance on machines and equipment. JOB TITLE: Mechanical Fitter, L-2</p>
6	<p>TASK ELEMENTS</p> <p>5.1 Consults related manuals and drawings. 5.2 Collects required tools and equipments. 5.3 Inspects machine and equipment condition. 5.4 Lubricates machine parts as per schedule. 5.5 Adjusts/aligns belt tension, gear mesh, chain tightness, shaft/axle and machine body. 5.6 Maintains logbook and Equipment History Card (EHC).</p>

TASK SPECIFICATION	
7	<p>TASK PERFORMANCE REQUIREMENTS Grease gun, oil can, magnifying glass, screw driver set, pliers set, log book, Equipment History Card, feeler gauge, sim plates, dial gauge, emery paper, wiping cloth(rags), wire brush, lubricants, permanent marker, allen key set, punch set, hammers</p>
8	<p>TASK PERFORMANCE STANDARDS</p> <ul style="list-style-type: none"> - Related manuals and drawing consulted. - Required tools and equipments collected. - Machine and equipment condition inspected. - Machine parts lubricated as per schedule. - Belt tension, gear mesh, chain tightness, shaft/axle and machine body positioned, adjusted/aligned. - Logbook and Equipment History Card (EHC) maintained.

TASK TRAINING DATA					
9	TASK NO. 5				
10	T.E No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGIENE
	5.1 5.3 5.4 5.5 5.6	Knowledge of interpreting manuals and drawings. Knowledge of inspecting machine and equipment conditions. Knowledge of lubricants and lubrication. Knowledge of wear and tear. Knowledge of proper filling logbook and Equipment History Card(EHC).			

ASK PERFORMANCE TEST (SKILL ASSESSMENT)				
11	TASK TITLE: Performing preventative maintenance on machines and equipment. TASK NO: 5		LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS		STANDARD MET	STANDARD NOT MET (COMMENT)
	DID THE CANDIDATE? 5.1 Consult related manuals and drawings. 5.2 Collect required tools and equipments. 5.3 Inspect machine and equipment condition. 5.4 Lubricate machine parts as per schedule. 5.5 Adjust/align belt tension, gear mesh, chain tightness, shaft/axle and machine body. 5.6 Maintain logbook and Equipment History Card (EHC).			

TASK SPECIFICATION	
5	<p>TASK NO: 6</p> <p>Testing the operation.</p> <p style="text-align: right;">JOB TITLE: Mechanical Fitter, L-2</p>
6	<p>TASK ELEMENTS</p> <p>5.1 Tests the performance manually.</p> <p>5.2 Resets/readjusts as required.</p> <p>5.3 Performs inching test.</p> <p>5.4 Tests no load test.</p> <p>5.5 Tests normal operation and adjusts, if necessary.</p>

TASK SPECIFICATION	
7	<p>TASK PERFORMANCE REQUIREMENTS</p> <p>Steel ruler</p> <p>Vernier caliper and callipers</p> <p>Micrometers</p> <p>Feeler gauge</p> <p>Dial gauge</p> <p>Hand tools set</p> <p>Tools specified in the manual of the equipment</p>
8	<p>TAKS PERFORMANCE STANDARDS</p> <ul style="list-style-type: none"> - Performance tested manually. - Reset/readjusted as required. - Inching test performed. - No load test performed. - Normal operation done and adjusted, if necessary.

TASK TRAINING DATA					
9	TASK NO. 5				
10	T.E No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGIENE
	5.1 5.2 5.3 5.4 5.5	Knowledge of testing the performance manually. Knowledge of resetting/readjusting procedure of equipment. Knowledge of inching test. Knowledge of testing procedure of no load test. Knowledge of testing normal operation and adjusting.		Interpret drawings/manufacturers specification.	Follow safety procedures

TASK PERFORMANCE TEST (SKILL ASSESSMENT)				
11	TASK TITLE: Testing the operation. TASK NO: 5		LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS		STANDARD MET	STANDARD NOT MET (COMMENT)
	DID THE CANDIDATE? 5.1 Test the performance manually. 5.2 Reset/readjust as required. 5.3 Perform inching test. 5.4 Perform no load test. 5.5 Test normal operation and adjust, if necessary			