JOB SPECIFICATION
AND
SKILL TEST

JOB TITTLE : LATHE SETTER OPERATOR, L – 2
SECTOR : MECHANICAL
SUB-SECTOR : METAL MACHINING

Council for Technical Education and Vocational Training
NATIONAL SKILL TESTING BOARD
Madhyapur thimi – 17, Sanothomi, Bhaktapur, Nepal
May 2006

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1989

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Recommended by Mechanical Technical Sub Committee.

May, 2006

JOB SPECIFICATION	
1	**JOB TITLE : LATHE SETTER OPERATOR** **LEVEL : 2**
2	**JOB DESCRIPTION** The Lathe Setter Operator prepares and operates lathe machine to perform:- facing, knurling, turning external taper, external profile, radius and angular shoulders, bearing journal on shaft, parting off, plain boring and cutting single entry V form threads (external-internal).
3	**LIST OF TASKS** 1. Knurling. 2. Turning external taper. 3. Turning external profile. 4. Turning radius and angular shoulders. 5. Turning bearing journal on shaft. 6. Grinding tools. 7. Performing plain boring operation. 8. Cutting single entry external & internal V-form thread.
4	**QUALIFYING NOTES (entry requirements, etc.)** - Normal health - Educational requirements: able to read and write in order to understand specification.

	TASK SPECIFICATION
5	**TASK NO. :** 1 **KNURLING** **JOB TITLE:** LATHE SETTER OPERATOR, L-2
6	**TASK ELEMENTS** 1.1 Ascertains job requirements from drawing, instruction and/or other specifications. 1.2 Determines sequences and methods of performing the process. 1.3 Selects, aligns and clamps the tool. 1.4 Positions and secures work piece on machine. 1.5 Sets machine controls as required (speed, feed and depth of cut). 1.6 Ensures coolant supply. 1.7 Operates automatic or manual controls. 1.8 Checks accuracy of job using measuring instruments and gauges. 1.9 Repositions work piece, changes tools and resets machine, if necessary. 1.10 Follows safety rules.

TASK SPECIFICATION	
7	**TASK PERFORMANCE REQUIREMENTS** **Drawing instruction:** Working drawing/specification. **Machine tools & accessories:** Centre lathe machine, revolving center, drill chuck with key. **Measuring instruments & gauges:** Outside calipers and steel rule. **Fitting tools:** Spanner set, wire brush (brass), hammer and mallet. **Cutting Tools:** knurling tools and center drill. **Consumable materials:** Coolant, lubricants and job materials as specified in drawing.
8	**TASK PERFORMANCE STANDARDS** Materials selected as specified, appropriate tools selected for required knurling operation. Speed selected appropriate to material and size of work piece. Adequate coolant supplied to prevent overheating of work piece and cutting tool. Controls operated automatically or manually without tool breakage or damage to work piece. Work piece repositioned, tools changed and machine reset as required. Knurled within tolerance as specified below: Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns.

9	10	**TASK TRAINING DATA**			
TASK No.	T. E. No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGINE
1	1	Knowledge of sequential operation involved in knurling.	Reading numerical and computation of simple arithmetical procedure such as addition, subtraction, multiplication and division.	Interpretation of working drawing to determine knurling operation.	Hazards associated with chuck keys and unsecured work piece.
	2	Knowledge of knurling tool and methods of clamping			
	3	Knowledge of procedures for securing and positioning work piece on lathe.			
	4	Knowledge of factors affecting surface finish and quality of job.			
	5	Knowledge of application of coolants.			

TASK PERFORMANCE TEST (Skill Assessment)			
11	TASK TITLE : **KNURLING** TASK No. : 1	LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (comments)
	DID THE CANDIDATE? 1.1 Select, align and clamp the appropriate tool. 1.2 Tighten and align the work piece to allow knurling operation. 1.3 Select and set the appropriate speed, feed, and depth of cut. 1.4 Supply adequate coolants to prevent overheating of work piece and tool. 1.5 Select and manipulate appropriate controls. 1.6 Reposition the work piece, change the tool as required, 1.7 Produce the work piece within tolerance as specified below:- Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns. 1.8 Produce the work piece within specified time. 1.9 Clean used tools, measuring instruments and return to specified place. 1.10 Clean machine and surrounding. 1.11 Follow safety rules.		

	TASK SPECIFICATION
5	**TASK NO. :** 2 **TURNING EXTERNAL TAPER.** **JOB TITLE:** LATHE SETTER OPERATOR, L-2
6	**TASK ELEMENTS** 2.1 Ascertains job requirements from drawing/instruction or other specifications. 2.2 Selects appropriate materials. 2.3 Determines sequences and methods of operations as required by specifications. 2.4 Selects and clamps appropriate cutting tools. 2.5 Positions and secures work piece on machine and sets machine components to the requirement. 2.6 Sets machine controls as required (speed, feed and depth of cut) 2.7 Ensures coolant supply. 2.8 Operates automatic or manual controls. 2.9 Checks accuracy of job using measuring instruments and gauges. 2.10 Repositions work piece, changes tools and resets machine, if necessary. 2.11 Follows safety rules.

TASK SPECIFICATION	
7	**TASK PERFORMANCE REQUIREMENTS** **Drawing/instruction:** Working drawing and metal table book. **Machine tools & accessories:** Lathe machine, bench/pedestal grinding machine, drill chuck, with key, revolving center, lathe dog, face plate and dog carrier etc. **Measuring Instruments & gauges:** Vernier caliper, micrometer (inside and outside), bevel protractor, dial test indicator, telescopic gauge and taper plug gauge. **Fitting tools:** Steel hammer and mallets. **Cutting Tools:** Lathe tools and center drill. **Consumable materials:** Coolant, lubricants and job materials as specified in drawing.
8	**TASK PERFORMANCE STANDARDS** Materials selected as specified, appropriate tools selected and clamped securely, work piece secured and aligned to allow taper turning operation. Appropriate speed, feed and depth of cut selected and set, coolant supplied adequately to prevent overheating of work piece and cutting tools. Controls operated automatically or manually without tool breakage or damage to work piece. Work piece repositioned, tools changed and machine reset. Taper turned within tolerances as specified below:- Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns.

9	10	**TASK TRAINING DATA**			
TASK No.	T. E. No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGINE
2	1	Knowledge of use and care of measuring instruments such as inside and outside calipers, micrometer and limit taper plug gauge.	Interpretation and computation of imperial and metric units for linear and angular measurement.	Interpretation of conventional symbols and working drawing for taper turning.	Importance of using emergency stop.
	2	Knowledge of types of taper and their applications. Methods of taper turning on lathe machine.	Calculation to determine the amount of tail stock offset or compound slide swivel for specified taper.		Results of improper manipulation and situation like flying broken tools and excessive chips formation.
	3	Knowledge of sequential operation involved in producing work piece.			
	4	Knowledge of turning tools and methods of aligning and clamping.	Interprets the metal table provided to calculate the required tapered angle to be set.		
	5	Knowledge of procedure for securely clamping work piece in different work holding devices.			
	6	Knowledge of factors affecting surface finish and quality of job.			
	7	Knowledge of application of coolants.			
	8	Knowledge of manual and automatic controls.			

TASK PERFORMANCE TEST (skill assessment)			
11	TASK TITLE : **TURNING EXTERNAL TAPER** TASK No. : 2	LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (comments)
	DID THE CANDIDATE? 2.1 Select the specified material. 2.2 Select, align and clamp the appropriate tools securely. 2.3 Tighten and align the work piece to allow taper tuning operations. 2.4 Select and set the appropriate speed, feed, depth of cut and machine component. 2.5 Supply adequate coolants. 2.6 Select and manipulate appropriate controls. 2.7 Reposition the work piece, change the tools as required. 2.8 Produce the work piece within tolerance as specified below:- Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns. 2.9 Produce the work piece within specified time. 2.10 Clean used tools, measuring instruments and return to specified place. 2.11 Clean machine and surrounding. 2.12 Follow safety rules.		

TASK SPECIFICATION	
5	**TASK NO. :** 3 **TURNING EXTERNAL PROFILES.** **TITLE:** LATHE SETTER OPERATOR, L-2
	TASK ELEMENTS 3.1 Ascertains job requirements from drawing instruction and/or other specifications. 3.2 Wears safety clothing. 3.3 Selects appropriate materials. 3.4 Selects form tools, marking tools and measuring instruments and gauges. 3.5 Determines sequences and methods of operations as required by specifications. 3.6 Grinds and sharpens form tools, if necessary. 3.7 Mounts, aligns and positions the work piece on machine. 3.8 Sets machine controls as required (speed, feed, and depth of cut). 3.9 Ensures coolant supply. 3.10 Performs profile turning 3.11 Checks accuracy of job using measuring instruments and gauges. 3.12 Repositions work piece, if necessary. 3.13 Changes tools and resets machine, if necessary. 3.14 Follows safety rules.

TASK SPECIFICATION	
7	**TASK PERFORMANCE REQUIREMENTS** **Drawing instruction:** Working drawing and metal table book. **Machine tools & accessories:** Lathe machine, revolving center and drill chuck with key. **Measuring Instruments & gauges:** Vernier caliper, micrometer (inside and outside), dial test indicator, slip gauge set, filler gauge and radius gauge **Fitting tools:** Steel hammer and mallets. **Cutting Tools:** Lathe tools and center drill. **Consumable materials:** Coolant, lubricants and job materials as specified in drawing.
8	**TASK PERFORMANCE STANDARDS** Materials selected as specified, appropriate tools selected and clamped securely as required, work piece securely tightened and aligned to allow turning external profile operation, appropriate speed, feed and depth of cut selected and set, coolant supplied adequately to prevent overheating of work piece and cutting tools. Controls operated automatically or manually without tool breakage or damage to work piece, work piece repositioned, tools changed and machine reset. Profile turned within tolerance as specified below: Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns.

9	10	**TASK TRAINING DATA**			
TASK No.	T. E. No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGINE
3	1	Knowledge of use and care of measuring instruments such as inside and outside calipers, micrometers, etc.	Interpretation and computation of imperial and metric units for linier and angular measurement.	Interpretation of conventional symbols and working drawing.	Importance of using emergency stop.
	2	Knowledge of profile turning on lathe machine			Result of improper manipulation and situation like flying broken tools and excessive chip formation.
	3	Knowledge of sequential operation involved in producing work piece.			
	4	Knowledge of profile turning tools and methods of aligning and clamping tools.			
	5	Knowledge of procedure for securing work piece in work holding devices.			
	6	Knowledge of factors affecting surface finish and quality of job.			
	7	Knowledge of application of coolants.			
	8	Knowledge of manual and automatic controls.			
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TASK PERFORMANCE TEST (skill assessment)			
11	TASK TITLE : **TURNING EXTERNAL PROFILES** TASK No. : 3	LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (comments)
	DID THE CANDIDATE? 3.1 Select the specified material. 3.2 Select, align and clamp the appropriate tool. 3.3 Tighten and align the work piece to allow profile turning operation. 3.4 Select and set the appropriate speed, feed and depth of cut. 3.5 Supply adequate coolants. 3.6 Select and manipulate appropriate controls. 3.7 Reposition the work piece and change the tools, if required. 3.8 Produce the work piece within tolerance as specified below:- Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns. 3.9 Produce the work piece within specified time. 3.10 Clean used tools, measuring instruments and return to specified place. 3.11 Clean machine and surrounding. 3.12 Follow safety rules.		

	TASK SPECIFICATION
5	**TASK NO. :** 4 **TURNING RADIUS & ANGULAR SHOULDERS.** **JOB TITLE:** LATHE SETTER OPERATOR, L-2
6	**TASK ELEMENTS** 4.1 Ascertains job requirements from drawing instruction and/or other specifications. 4.2 Wears safety clothing. 4.3 Selects appropriate materials. 4.4 Determines sequences and methods of operation as required by specifications. 4.5 Selects form tools, marking tools and measuring instruments and gauges. 4.6 Grinds and sharpens form tools, if necessary. 4.7 Mounts, aligns and positions the work piece on machine. 4.8 Sets machine controls as required (speed, feed, and depth of cut). 4.9 Ensures coolant supply. 4.10 Performs radius and angular shoulders turning. 4.11 Checks accuracy of job using measuring instruments and gauges. 4.12 Repositions work piece, if necessary. 4.13 Changes tools and resets machine, if necessary. 4.14 Follows safety rules.

TASK SPECIFICATION	
7	**TASK PERFORMANCE REQUIREMENTS** **Drawing instruction:** Working drawing and metal table book. **Machine tools & accessories:** Lathe machine, revolving center and drill chuck with key. **Measuring Instruments & gauges:** Vernier caliper, micrometer (inside and outside), dial test indicator, slip gauge set, filler gauge, radius gauge and template. **Fitting tools:** Steel hammer and mallets. **Cutting Tools:** Lathe tools and center drill. **Consumable materials:** Coolant, lubricants and job materials as specified in drawing.
8	**TASK PERFORMANCE STANDARDS** Materials selected as specified, appropriate tools selected and clamped securely as required, work piece securely tightened and aligned to allow radius and angular shoulders turning operation, appropriate speed, feed and depth of cut selected and set, coolant supplied adequately to prevent overheating of work piece and cutting tools. Controls operated automatically or manually without tool breakage or damage to work piece, work piece repositioned, tools changed and machine reset. Radius and angular shoulders turned within tolerance as specified below: Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns.

9	10	**TASK TRAINING DATA**			
TASK No.	T. E. No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGINE
4	1	Knowledge of use and care of measuring instruments such as inside and outside calipers, micrometers and template.	Reading and computation of imperial and metric units for linear measurement.	Interpretation of conventional symbols and working drawing.	Importance of using emergency stop. Result of improper manipulation and situation like flying broken tools and excessive chips formation.
	2	Knowledge of radius and angular shoulders.			
	3	Knowledge of sequential operation involved in producing work piece.			
	4	Knowledge of cutting tools and methods of aligning and clamping tools.			
	5	Knowledge of procedure for securing work piece in work holding devices.			
	6	Knowledge of factors affecting surface finish and quality of job.			
	7	Knowledge of applications of coolants.			
	8	Knowledge of manual and automatic controls.			

TASK PERFORMANCE TEST (skill assessment)			
11	TASK TITLE : **TURNING RADIUS & ANGULAR SHOULDERS** TASK No. : 4	LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (comments)
	DID THE CANDIDATE? 4.1 Select the specified material. 4.2 Select, align and clamp the appropriate tool. 4.3 Tighten and align the work piece to allow profile tuning operations. 4.4 Select and set the appropriate speed, feed and depth of cut. 4.5 Supply adequate coolants. 4.6 Select and manipulate appropriate controls. 4.7 Reposition the work piece and change the tools as required. 4.8 Produce the work piece within tolerance as specified below:- Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns. 4.9 Produce the work piece within specified time. 4.10 Clean used tools, measuring instruments and return to specified place. 4.11 Clean machine and surrounding. 4.12 Follow safety rules.		

TASK SPECIFICATION	
5	**TASK NO. :** 5 **TURNING BEARING JOURNAL ON SHAFT.** **JOB TITLE:** LATHE SETTER OPERATOR, L-2
6	**TASK ELEMENTS** 5.1 Ascertains job requirements from drawing, instructions and/or other specifications. 5.2 Wears safety clothing. 5.3 Selects appropriate materials. 5.4 Selects measuring instruments. 5.5 Determines sequences and methods of operations as required by specification. 5.6 Selects and clamps appropriate cutting tools. 5.7 Positions and secures work piece on machine. 5.8 Sets machine controls as required (Speed, feed, and depth of cut). 5.9 Ensures coolant supply. 5.10 Performs turning bearing journals. 5.11 Checks accuracy of job using measuring instruments and gauges. 5.12 Repositions work piece, if necessary. 5.13 Changes tools and resets machine, if necessary. 5.14 Follows safety rules.

TASK SPECIFICATION	
7	**TASK PERFORMANCE REQUIREMENTS** **Drawing/instruction:-** Working drawing and metal table book. **Machine tools & accessories:-** Lathe machine, revolving center, dead and half center and drill chuck with key. **Measuring instruments and gauges:-** Vernier caliper, micrometer (inside and outside) and dial test indicator. **Fitting tools:-** Spanner set, hammer and mallets. **Cutting tools:-** Cutting tools (roughing and finishing) and center drill. **Consumable materials:-** Coolant, lubricants and job materials as specified in drawing.
8	**TASK PERFORMANCE STANDARDS** Dressed in appropriate safety clothing, materials selected as specified, appropriate tools and measuring instruments selected for turning bearing journals operations, speed, feed and depth of cut selected appropriate to material and size of work piece, controls operated either automatically/manually without tool breakage or damage to work piece, adequate coolant supplied to prevent overheating of work piece, work piece repositioned, tools changed and machine reset as required, used tools and instruments cleaned and return to specified place, machine and surrounding cleaned. Tolerance:- As per the size of the bearing specified.

9	10	**TASK TRAINING DATA**			
TASK No.	T. E. No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGINE
5	1	Knowledge of use and care of measuring instruments such as inside and outside calipers, inside and out side micrometer.	Reading metric and imperial system of units for linear measurement.	The reading & interpretation of working drawing to determine, dimensions of required materials, working sequence, and degree of accuracy.	Importance of using emergency stop.
	2	Knowledge of sequential operations involved in producing work piece.			
	3	Knowledge of inserting procedures & securing work piece in different work holding device.			
	4	Knowledge of the factors affecting surface finish and quality of the job.			
	5	Knowledge of shoulders turning.			
	6	Knowledge of applications of coolants.			
	7	Knowledge of manual and automatic controls.			

TASK PERFORMANCE TEST (skill assessment)			
11	TASK TITLE : **TURNING BEARING JOURNAL ON SHAFT** TASK No. : 5	LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (comments)
	DID THE CANDIDATE? 5.1 Wear appropriate safety clothing. 5.2 Select materials as specified according to the working drawing. 5.3 Select appropriate measuring instruments. 5.4 Select appropriate tools and clamp in position securely. 5.5 Tighten and align work piece securely to allow operations. 5.6 Select appropriate speed, feed and depth of cut corresponding to materials and size. 5.7 Maintain adequate supply of coolant to prevent overheating of cutting tools and work piece. 5.8 Choose the most appropriate sequence of machining operation. 5.9 Produce the work piece as per the size of the bearing specified. 5.10 Produce the work piece within specified time. 5.11 Clean used tools, measuring instruments and return to specified place. 5.11 Clean machine and surrounding. 5.12 Follow safety rules.		

TASK SPECIFICATION	
5	**TASK NO. :** 6 **GRINDING TOOLS.** **JOB TITLE:** LATHE SETTER OPERATOR, L-2
6	**TASK ELEMENTS** 6.1 Receives instructions/drawing. 6.2 Wears protective clothing/safety goggles. 6.3 Selects appropriate measuring instruments or gauges. 6.4 Adjusts tool rest/fits drill grinding jig. 6.5 Ensures safety guards in operation. 6.6 Grinds to the required geometry. 6.7 Cleans the working area. 6.8 Follows safety rules.

TASK SPECIFICATION	
7	**TASK PERFORMANCE REQUIREMENTS** **Drawing/ instruction:** Metal table book/working drawing. **Machine tools & accessories:** Bench/pedestal grinding machine. **Measuring Instruments & gauges:** Bevel protractor and gauges. **Fitting tools:** Safety goggles. **Cutting tools:** Cutting tool materials. **Consumable materials:** Coolant in coolant pod.
8	**TASK PERFORMANCE STANDARDS** Dressed in appropriate safety clothing and safety glass. Appropriate measuring instrument and gauge selected. Tool rest adjusted within 2mm from the grinding wheel. All safety guards in operation while grinding. The tool grinding should conform to the specified in metal table book.

9	10	**TASK TRAINING DATA**			
TASK No.	T. E. No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGINE
6	1	Knowledge of parts of pedestal grinding machine and its function, knowledge of care and use of grinding wheel.	Interpretation and computation of imperial and metric system of linear measurement.		Importance of safety clothing and goggles during grinding operation.
	2	Knowledge of importance of safety guards in operation in grinding.			
	3	Knowledge of shape of turning tools for different operations.			
	4	Knowledge of importance of various cutting angles and grinding processes.			
	5	Knowledge of importance of cleaning machine.			
	6	Knowledge of effect of over heating the tool while grinding.			

TASK PERFORMANCE TEST (skill assessment)			
11	TASK TITLE : **GRINDING TOOLS** TASK No. : 6	LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (comments)
	DID THE CANDIDATE? 6.1 Dress in appropriate safety clothing. 6.2 Select the appropriate measuring instruments and gauge. 6.3 Adjust the tool rest within 2mm. 6.4 Ensure all safety guards while in operation. 6.5 Grind tool as specified in metal table book. 6.6 Grind the tool without burnt finish. 6.7 Stop the grinding machine and clean the tool rest. 6.8 Grind the tools within specified time. 6.9 Follow safety rules.		

TASK SPECIFICATION	
5	**TASK NO. :** 7 **PERFORMING PLAIN BORING OPERATION.** **JOB TITLE:** LATHE SETTER OPERATOR, L-2
6	**TASK ELEMENTS** 7.1 Ascertains job requirements from drawing instruction and/or other specifications. 7.2 Selects appropriate materials. 7.3 Determines sequences and methods of operations as required by specifications. 7.4 Selects and clamps appropriate cutting tools. 7.5 Positions and secures work piece on machine. 7.6 Sets machine controls as required (speed, feed and depth of cut). 7.7 Ensures coolant supply. 7.8 Operates automatic or manual controls. 7.9 Checks accuracy of job using measuring instruments and gauges. 7.10 Repositions work piece, if necessary. 7.11 Changes tools and resets machine, if necessary. 7.12 Follows safety rules.

TASK SPECIFICATION	
7	**TASK PERFORMANCE REQUIREMENTS** **Drawing instruction:** Working drawing/specification and metal table book. **Machine tools & accessories:** Lathe machine and revolving center. **Measuring instruments & gauges:** Vernier caliper, micrometer (inside and outside), dial test indicator, telescopic gauge and marking gauge. **Fitting tools:** Spanner set, hammer and mallets. **Cutting Tools:** Boring tools, center drill and drill. **Consumable materials:** Coolant, lubricants and job materials as specified in drawing.
8	**TASK PERFORMANCE STANDARDS** Materials selected as specified, appropriate tools selected and clamped securely as required, work piece securely tightened and aligned to allow plain boring operation, appropriate speed, feed and depth of cut selected and set, coolant supplied adequately to prevent overheating of work piece and cutting tools. Controls operated automatically or manually without tool breakage or damage to work piece. Work piece repositioned, tools changed and machine reset. Plain boring performed within tolerance as specified below: Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns.

9	10	**TASK TRAINING DATA**			
TASK No.	T. E. No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGINE
7	1	Knowledge of use and care of measuring instruments such as inside and outside calipers, micrometers and telescopic gauge.	Reading and computation of imperial and metric units for linear measurement.	Interpretation of conventional symbols and working drawing.	Importance of using emergency stop.
	2	Knowledge of boring on lathe machine			Result of improper manipulation and situation like flying broken tools and excessive chips formation.
	3	Knowledge of sequential operation involved in producing work piece.			
	4	Knowledge of boring tools and methods of aligning and clamping tools.			
	5	Knowledge of procedure for securing work piece in different work holding devices.			
	6	Knowledge of factors affecting surface finish and quality of job.			
	7	Knowledge of application of coolants.			
	8	Knowledge of manual and automatic controls.			

TASK PERFORMANCE TEST (skill assessment)			
11	TASK TITLE : **PERFORMING PLAIN BORING OPERATION** TASK No. : 7	LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (comments)
	DID THE CANDIDATE? 7.1 Select the specified material. 7.2 Select, align and clamp the appropriate tool. 7.3 Tighten and align the work piece to allow boring operation. 7.4 Select and set the appropriate speed, feed and depth of cut. 7.5 Supply adequate coolants. 7.6 Select and manipulate appropriate controls. 7.7 Reposition the work piece, if necessary. 7.8 Change the tools as required to complete boring operation. 7.9 Produce the work piece within tolerance as specified below:- Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns. 7.10 Produce the work piece within specified time. 7.11 Clean used tools, measuring instruments and return to specified place. 7.12 Clean machine and surrounding. 7.13 Follow safety rules.		

TASK SPECIFICATION	
5	**TASK NO. :** 8 **CUTTING SINGLE ENTRY EXTERNAL & INTERNAL V- THREADS. JOB TITLE:** LATHE SETTER OPERATOR, L-2
6	**TASK ELEMENTS** 8.1 Ascertains job requirements from drawing/instruction/or other specifications. 8.2 Selects appropriate materials. 8.3 Determines sequences and methods of operation as required by specifications. 8.4 Selects and clamps appropriate thread cutting tools. 8.5 Positions and secures work piece on machine. 8.6 Sets machine controls and levers as required (speed, feed, depth of cut and gear train setting). 8.7 Ensures coolant supply. 8.8 Operates automatic or manual controls. 8.9 Checks accuracy of job using measuring instruments and gauges. 8.10 Repositions work piece, if necessary. 8.11 Changes tools and resets machine, if necessary. 8.12 Follows safety rules.

TASK SPECIFICATION	
7	**TASK PERFORMANCE REQUIREMENTS** **Drawing instruction:** Working drawing/specification and metal table book. **Machine tools & accessories:** Lathe machine, revolving center and drill chuck with key. **Measuring instruments & gauges:** Vernier caliper, micrometer (inside and outside), dial test indicator, telescopic gauge, thread gauge and pitch gauge. **Fitting tools:** Spanner set, Allen keys, hammer and mallets. **Cutting Tools:** Thread cutting tools and center drill. **Consumable materials:** Coolant, lubricants and job materials as specified in drawing.
8	**TASK PERFORMANCE STANDARDS** Materials selected as specified, appropriate tools selected and clamped securely, aligned to allow thread cutting operation. Appropriate speed, feed and depth of cut selected and set, coolant supplied adequately to prevent overheating of work piece and cutting tools. Controls operated automatically or manually without tool breakage or damage to work piece, work piece repositioned, tools changed and machine reset. Single entry V- thread cut within tolerance as specified below: Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns.

9	10	**TASK TRAINING DATA**			
TASK No.	T. E. No.	TECHNICAL KNOWLEDGE	APPLIED CALCULATION	GRAPHIC INFORMATION	SAFETY AND HYGINE
8	1	Knowledge of use and care of measuring instruments such as inside and outside calipers, micrometer, threads and pitch gauge (metric).		Interpretation of conventional symbols and working drawing for V threads.	Importance of using emergency stop. Result of improper manipulation and situation like flying broken tools and excessive chips formation.
	2	Knowledge of types of V- threads. Method of thread cutting by single point cutting tools in lathe machine.			
	3	Knowledge of setting gear train.			
	4	Knowledge of sequential operation involved in producing work piece.			
	5	Knowledge of V -thread cutting tools and methods of aligning and clamping tools.			
	6	Knowledge of procedure for securely clamping work piece in different work holding devices.			
	7	Knowledge of factors affecting surface finish and quality of the job.			
	8	Knowledge of application of coolants.			
	9	Knowledge of manual and automatic controls.			

TASK PERFORMANCE TEST (skill assessment)			
11	TASK TITLE : **CUTTING SINGLE ENTRY EXTERNAL & INTERNAL V - THREADS** TASK No. : 8	LOCATION OF TEST: CANDIDATE'S NAME: EVALUATOR'S NAME:	
12	TEST FACTORS AND ITEMS	STANDARD MET	STANDARD NOT MET (comments)
	DID THE CANDIDATE? 8.1 Select, align and clamp the appropriate tool. 8.2 Tighten and align the work piece to allow thread cutting operation. 8.3 Select and set the appropriate speed, feed, depth of cut and gear train. 8.4 Supply adequate coolants. 8.5 Select and manipulate appropriate controls. 8.6 Reposition the work piece, if necessary. 8.7 Change the tools as required to complete thread cutting operations. 8.8 Produce the work piece within tolerance as specified below:- Linear ± 0.05 mm. Angular ± 1 degree. Surface finish 2.0 microns. 8.9 Produce the work piece within specified time. 8.10 Clean used tools, measuring instruments and return to specified place. 8.11 Clean machine and surrounding. 8.12 Follow safety rules.		

SUBJECT-LATHE SETTER OPERATOR L-2	**Skill Testing Division** **NATIONAL SKILL TEST**	SCALE-1:4
DATE-		TIME- hrs