CURRICULUM

FOR THE TRADE OF

DIAMOND LASER SAWING MACHINE OPERATOR

(Production/ Manufacturing Unit)

UNDER

APPRENTICESHIP TRAINING SCHEME

GOVERNMENT OF INDIA

MINISTRY OF SKILL DEVELOPMENT AND ENTREPRENEURSHIP

DIRECTORATE GENERAL OF TRAINING

1. **Category of trade** : Non-Engineering

2. Name of the Trade : Diamond Laser Sawing Machine Operator (Production/ Manufacturing Plant)

3. **Duration of Apprenticeship Training** : **15 Months**

Break up of the Apprenticeship Training

(i) **Duration of Basic Training** : 3 Months / 500 Hrs

(ii) **Duration of Practical Training/ On-the-job Training** : 12 Months

4. **Entry Qualification** : Passed 8th Class

(A) <u>Basic training components</u>

(i) Employability Skills - 110 Hrs

(ii) Basic numeracy - Not Applicable

(iii) Trade theory - 120 Hrs

(iv) Trade practical - 270 Hrs

(B) Practical Training/On-the job training : 12 Months

CONTENTS

1. ACKNOWLEDGEMENT

Diamond Manufacturing Sector sincerely acknowledges with thanks the contribution and cooperation extended by Shri. P.A. Mistry, Regional Deputy Director of Employment & Training to bring out this curriculum for the trade of **Diamond Laser Sawing Machine Operator** under Apprenticeship Training Scheme.

We also acknowledge the team member of apprentice authority for their timely guidance and support for preparing this course curriculum.

2. BACKGROUND

2. 1. Apprenticeship Training Scheme under Apprentice Act 1961

The Apprentices Act, 1961 was enacted with the objective of regulating the programme of training of apprentices in the industry by utilizing the facilities available therein for imparting on-the-job training. The Act makes it obligatory for employers in specified industries to engage apprentices in designated trades to impart Apprenticeship Training on the job in industry to school leavers and person having National Trade Certificate(ITI pass-outs) issued by National Council for Vocational Training (NCVT) to develop skilled manpower for the industry. There are four categories of apprentices namely; **trade apprentice, graduate, technician and technician (vocational) apprentices.**

Qualifications and period of apprenticeship training of **trade apprentices** vary from trade to trade. The apprenticeship training for trade apprentices consists of basic training followed by practical training. At the end of the training, the apprentices are required to appear in a trade test conducted by NCVT and those successful in the trade tests are awarded the National Apprenticeship Certificate.

The period of apprenticeship training for graduate (engineers), technician (diploma holders and technician (vocational) apprentices is one year. Certificates are awarded on completion of training by the Department of Education, Ministry of Human Resource Development.

2. 2. Changes in Industrial Scenario

Recently we have seen huge changes in the Indian industry. The Indian Industry registered an impressive growth during the last decade and half. The number of industries in India have increased manifold in the last fifteen years especially in services and manufacturing sectors. It has been realized that India would become a prosperous and a modern state by raising skill levels, including by engaging a larger proportion of apprentices, will be critical to success; as will stronger collaboration between industry and the trainees to ensure the supply of skilled workforce and drive development through employment. Various initiatives to build up an adequate infrastructure for rapid industrialization and improve the industrial scenario in India have been taken.

2. 3. Reformation

The Apprentices Act, 1961 has been amended and brought into effect from 22nd December, 2014 to make it more responsive to industry and youth. Key amendments are as given below:

* Prescription of number of apprentices to be engaged at establishment level instead of trade-wise.

* Establishment can also engage apprentices in optional trades which are not designated, with the discretion of entry level qualification and syllabus.

* Scope has been extended also to non-engineering occupations.

* Establishments have been permitted to outsource basic training in an institute of their choice.

* The burden of compliance on industry has been reduced significantly.

* Prescription of number of apprentices to be engaged at establishment

3. RATIONALE

[Need for Apprenticeship as Diamond Laser Sawing Machine Operator]

The candidate trained in this job role will be employed only in the production section for manufacturing diamond laser cutting products. It provides knowledge of manufacturing procedures carried out at production floor.

The greater degree of relevance of the training with latest advancements of the industry will enhance the employability opportunities.

1. Knowledge of gowning procedure for entry into manufacturing area.
2. Ability to use latest machines and their different techniques related to manufacturing operations.
3. Knowledge of material (diamond) movement process, stone packaging in packet
4. Acquire knowledge of rough diamond stone, basic knowledge to operate computerized laser machine.
5. Ability to use the computer for electronic documentation of information and understand instructions while batch production.
6. Ability to use the company software to manage and update logs.
7. Exposure to production planning, batch creation and packaging of the final products.
8. Prioritize the queries obtained and plan for the day.
9. Resolve the query within the target turnaround time (TAT).
10. Ability to concentrate on task at hand and complete it without errors.
11. Ability to understand the system information and location information of materials available and maintain accuracy.
12. Identify and resolve the queries in day-to-day manufacturing operations.
13. Exposure to regulations, use of work equipment, maintenance, control of materials to health with respect to Safety and Security aspects.
14. Ability to understand the additional information required and contact details of the relevant personnel in the department.

15. Ability to manage expectations of other sections of the organisation.
16. Able to communicate and behave in a professional manner when dealing with colleagues and supervisors.
17. Knowledge of Risk and impact of not following defined procedures/work instructions.
18. Able to understand clearly and gaining extensive knowledge of the company, services offered and related solutions to problems.
19. Exposure to Reporting and documentation.
20. Ability to understand and maintain health, safety and security standards during manufacturing process.

Laser Sawing Machine Operator: Also known as Laser Cutter or Laser Operator or Laser Sawyer, the laser machine operator uses the laser machine to cut the diamond.

Brief Job Description: The individual at work needs to cut the rough diamond along the marking by fixing it on a dop or cassette or holder, then slicing it using the laser machine. A laser sawing operator is responsible for delivering perfect cut roughs in the stipulated time, while minimizing weight loss and breakage.

Personal Attributes: The job requires the individual to have: attention to details; good eyesight; steady hands; ability to work in a process driven team; ability to multitask; ability to work for long hours in sitting position in front of a computer; and a lot of patience.

4. JOB ROLE

Brief description of Job role:
Cutting the rough diamond using a laser sawing machine as per the markings, in order to remove inclusions and maximise yield, while ensuring minimum breakage.

This is about cutting the rough diamond into smaller pieces as per the markings so that inclusions are removed and maximum yield is achieved as per the planned cut.

This covers the following:

Collect the rough diamond dops or cassettes from the supervisor.

- match specifications such as shape, size, dimensions, etc., and marking of the fixed received as per those mentioned on the bag.

Set the doped rough diamond in the laser sawing machine

- follow the marking specifications in terms of the type of cut,and the number of cuts required
- select the holder /dop type for the size of the rough to be cut and the method by which it will be cut, e.g., one-sided for single rough and double-sided cassette for multiple roughs to be cut at a time

place the fixed rough on the platform of laser sawing machine

- check the alignment of the fixed rough on the holder with respect to marking for the planned cut
- enter the dimensions of the rough in the computer program
- align the laser beam cutting line with the marking on the rough before starting to cut
- start the laser machine
- continuously monitor the cutting process on screen
- stop the laser cutting machine immediately in case any problem such as faulty cut or damage to the stone is observed stop the laser machine once the rough has been sawed as per the marked line
- change the alignment and repeat the process if another cut is required
- remove the cut pieces from the laser sawing machine and clean the platform
- bag the cut pieces and label as per the company's procedure
- return to the supervisor for further processing

Return the uncut roughs if:

- the alignment on the holder is not accurate
- there is anticipated problem with the planned cut such that sawing can lead to breakage

Follow safety procedures at work

- to ensure that the door of the laser machine is closed after placing the fixed rough and before starting the machine
- not to operate the machine while touching rough
- to wear proper safety equipment like gloves and eye glasses while working

Report problems to the supervisor/reporting authority about

- impractical markings
- machine failures

5. LEARNING OUTCOMES

A. GENERIC OUTCOME

- Recognize & comply safe working practices, environment regulation and housekeeping.
- Work in a team, understand and practice soft skills, technical English to communicate with required clarity.
- Understand and explain the concept in quality tools and labour welfare legislation and apply such in day to day work to improve productivity & quality.
- Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
- Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.
- Understand and apply basic computer working, basic operating system and uses internet services to get accustomed & take benefit of IT developments in the industry

B. SPECIFIC OUTCOME

- Issuance of raw, primary and secondary packaging of materials, storage and labelling of all the materials.
- Allocate the materials to storage at proper location using standard storing procedure.
- Material verification by reconciliation process.
- Identification of approved materials and rejected materials to be used in routine manufacturing operations.
- Prepare detailed reports for the management.
- A detailed understanding of the different materials with proper identification label with specified environmental condition.
- Plan and organize assigned work.
- Detect & resolve issues during execution demonstrate possible solutions and agree tasks within the team.
- Communicate with required clarity and understand technical English.

1. GENERAL INFORMATION

1.	Name of the Trade	:	Diamond Laser Sawing Macjine Operator (Production / Manufacturing Unit)
2.	Duration of Apprenticeship Training	:	15 Months
	Basic Training	:	3 Months
	Practical Training	:	12 Months
3.	Duration of Basic Training	:	
	a. Block –i	:	3 months
4.	Total duration of Basic Training	:	3 Months
5.	Duration of Practical Training (On -job Training)	:	52 Weeks or 12 Months
6.	Entry Qualification	:	Passed 8th class
7.	Selection of Apprentices	:	The apprentices will be selected as per Apprenticeship Act amended time to time.
8.	Rebate for ITI passed trainees	:	NA

Note: *Industry may impart training as per above time schedule, however this is not fixed. The industry may adjust the duration of training considering the fact that all the components under the syllabus must be covered. However the flexibility should be given keeping in view that no safety aspect is compromised and duration of industry training to be remains as 1 year.*

7. COURSE STRUCTURE

Training duration details:

Time (in hours)	500 Hrs (3 Months)	12 months
Basic Training	Block– I	-----
Practical Training (On - job training)	----	Block – II

Components of Training	Duration of Training in Months ➡														
⬇	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Basic Training Block – I															
Practical Training Block - II															

8. SYLLABUS

8.1 BASIC TRAINING

(BLOCK – I)

DURATION: 03 MONTHS

GENERAL INFORMATION

1)	Name of the Trade	:	Diamond Laser Sawing Machine Operator (Production / Manufacturing Unit)
2)	Hours of Instruction	:	500 Hrs.
3)	Batch size	:	20
4)	Power Norms	:	NA
5)	Space Norms	:	192 Sq. m.
6)	Examination	:	The internal assessment will be held on completion of each Block.
7)	Instructor Qualification	:	

a) B.Sc./ M.sc.(Physics) or Master of Science from recognized university/Board with one/two year post qualification experience respectively in the relevant field.

8) Tools, Equipment's & Machinery required: - As per Annexure – I

8.1.1 Details of Syllabus of Core Skill

Duration 500Hrs

Sr. No.	Trade Practical (Professional Skills)	Duration 270Hrs	Trade Theory (Professional Knowledge)	Duration 120Hrs
1	*Site Visit to Manufacturing Plant		* Work function of each departments * Processes of departments	
2	* Basic information about Diamond Laser Sawing Machines		* Type of Products * Application of Product safety measures for products	
3	* Good documentation practices		* Knowledge of Regulatory and compliances	
4	* Work Environment		* Safety * Gowning Procedures * Instrument Handling	
5	*Material Handling process		* Knowledge about material safety datasheet * Application of material Storage of material	
6	*Safety Precaution in production area		* Knowledge about material safety datasheet * Knowledge about personal protective equipments	
7	* Equipment/Instrument Qualification and Re Qualification		* Knowledge of instrument SOP * Application of Instrument	
8	* Waste Disposal		* Knowledge about Safety	

9	*Labelling Practice and Printing		* Knowledge about concerned SOP's of labelling * Training on Label Printing	
10	*Entry and Exit Procedure for Single stone diamond		* Gowning Process * Knowledge about classification of single stone diamond	
11	*Advance Good Documentation Practice		* Knowledge of applicable regulatory guidelines * Knowledge of departmental SOP's Knowledge of DP's	
12	*Practical approach of 4P-Process		* Learning of 4P concept * Meaning of 4P Implementation process of 4P	
13	*Kaizen Implementation at workplace		* Meaning and concept of Kaizen * Effectiveness of Kaizen concept Category of Kaizen	

8.1.2 EMPLOYABILITY SKILLS

GENERAL INFORMATION

1)	**Name of the subject**	:	**EMPLOYABILITY SKILLS**
2)	**Applicability**	:	ATS- Mandatory for fresher only
3)	**Hours of Instruction**	:	110 Hrs.
4)	**Examination**	:	The examination will be held at the end of Training by NCVT.
5)	**Instructor Qualification**	:	

i) MBA/BBA/MLW/MHRD with two years experience or graduate in sociology/social welfare/Economics with two years experience and trained in Employability skill from DGET Institute.

And

Must have studied in English/Communication Skill and Basic Computer at 12th /diploma level

OR

i) Existing Social Study Instructor duly trained in Employability Skill from DGET Institute.

8.1.3 SYLLABUS OF EMPLOYABILITY SKILLS

Block – I

Basic Training

Topic No.	Topic	Duration (in hours)
	English Literacy	20
1	**Pronunciation :** Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)	
2	**Functional Grammar** Transformation of sentences, Voice change, Change of tense, Spellings.	
3	**Reading** Reading and understanding simple sentences about self, work and environment	
4	**Writing** Construction of simple sentences Writing simple English	
5	**Speaking / Spoken English** Speaking with preparation on self, on family, on friends/ classmates, on know, picture reading gain confidence through role-playing and discussions on current happening job description, asking about someone's job habitual actions. Cardinal (fundamental) numbers ordinal numbers. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.	

	I.T. Literacy	
1	**Basics of Computer** Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.	
2	**Computer Operating System** Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.	
3	**Word processing and Worksheet** Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion & creation of Tables. Printing document. Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel Sheets	20
4	**Computer Networking and INTERNET** Basic of computer Networks (using real life examples), Definitions of Local Area Network (LAN), Wide Area Network (WAN), Internet, Concept of Internet (Network of Networks), Meaning of World Wide Web (WWW), Web Browser, Web Site, Web page and Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication. Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cyber crimes.	

	Communication Skill	
1	**Introduction to Communication Skills** Communication and its importance Principles of Effective communication Types of communication - verbal, non verbal, written, email, talking on phone. Non verbal communication -characteristics, components-Para-language Body - language Barriers to communication and dealing with barriers. Handling nervousness/ discomfort.	
2	**Listening Skills** Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening. Triple- A Listening - Attitude, Attention & Adjustment. Active Listening Skills.	15
3	**Motivational Training** Characteristics Essential to Achieving Success The Power of Positive Attitude Self awareness Importance of Commitment Ethics and Values Ways to Motivate Oneself Personal Goal setting and Employability Planning.	
4	**Facing Interviews** Manners, Etiquettes, Dress code for an interview Do's & Don'ts for an interview	
5	**Behavioral Skills** Problem Solving Confidence Building Attitude	

Topic No.	Topic	Duration (in hours)
	Entrepreneurship skill	
1	**Concept of Entrepreneurship** **Entrepreneurship** - Entrepreneurship - Enterprises:- Conceptual issue Entrepreneurship vs. Management, Entrepreneurial motivation. Performance & Record, Role & Function of entrepreneurs in relation to the enterprise & relation to the economy, Source of business ideas, Entrepreneurial opportunities, The process of setting up a business.	
2	**Project Preparation & Marketing analysis** Qualities of a good Entrepreneur, SWOT and Risk Analysis. Concept & application of Product Life Cycle (PLC), Sales & distribution Management. Different Between Small Scale & Large Scale Business, Market Survey, Method of marketing, Publicity and advertisement, Marketing Mix.	**15**
3	**Institutions Support** Preparation of Project. Role of Various Schemes and Institutes for self-employment i.e. DIC, SIDA, SISI, NSIC, SIDO, Idea for financing/ non financing support agencies to familiarizes with the Policies /Programmes & procedure & the available scheme.	
4	**Investment Procurement** Project formation, Feasibility, Legal formalities i.e., Shop Act, Estimation & Costing, Investment procedure - Loan procurement - Banking Processes.	
	Productivity	
1	**Productivity** Definition, Necessity, Meaning of GDP.	

2	**Affecting Factors** Skills, Working Aids, Automation, Environment, Motivation How improves or slows down.	10
3	**Comparison with developed countries** Comparative productivity in developed countries (viz. Germany, Japan and Australia) in selected industries e.g. Manufacturing, Steel, Mining, Construction etc. Living standards of those countries, wages.	
4	**Personal Finance Management** Banking processes, Handling ATM, KYC registration, safe cash handling, Personal risk and Insurance.	
	Occupational Safety, Health & Environment Education	15
1	**Safety & Health** Introduction to Occupational Safety and Health importance of safety and health at workplace.	
2	**Occupational Hazards** Basic Hazards, Chemical Hazards, Vibroacoustic Hazards, Mechanical Hazards, Electrical Hazards, Thermal Hazards. Occupational health, Occupational hygienic, Occupational Diseases/ Disorders & its prevention.	
3	**Accident & safety** Basic principles for protective equipment. Accident Prevention techniques - control of accidents and safety measures.	
4	**First Aid** Care of injured & Sick at the workplaces, First-Aid & Transportation of sick person	
5	**Basic Provisions** Idea of basic provision legislation of India. of safety, health, welfare under legislation of India.	
6	**Ecosystem** Introduction to Environment. Relationship between Society and Environment, Ecosystem and Factors causing imbalance.	

7	**Pollution** Pollution and pollutants including liquid, gaseous, solid and hazardous waste.	
8	**Energy Conservation** Conservation of Energy, re-use and recycle.	
9	**Global warming** Global warming, climate change and Ozone layer depletion.	
10	**Ground Water** Hydrological cycle, ground and surface water, Conservation and Harvesting of water	
11	**Environment** Right attitude towards environment, Maintenance of in -house Environment	
	Labour Welfare Legislation	
1	**Welfare Acts** Benefits guaranteed under various acts- Factories Act, Apprenticeship Act, Employees State Insurance Act (ESI), Payment Wages Act, Employees Provident Fund Act, The Workmen's compensation Act.	**05**
	Quality Tools	
1	**Quality Consciousness :** Meaning of quality, Quality Characteristic	
2	**Quality Circles :** Definition, Advantage of small group activity, objectives of quality Circle, Roles and function of Quality Circles in Organization, Operation of Quality circle. Approaches to starting Quality Circles, Steps for continuation Quality Circles.	**10**
3	**Quality Management System :** Idea of ISO 9002 and BIS systems and its importance in maintaining qualities.	
4	**House Keeping :** Purpose of Housekeeping, Practice of good Housekeeping.	
5	**Quality Tools** Basic quality tools with a few examples	

8.2 PRACTICAL TRAINING (ON-JOB TRAINING)

(BLOCK – I)

DURATION: 12 MONTHS

		GENERAL INFORMATION
1)	**Name of the Trade**	:**Diamond Laser Sawing Machine Operator (Production /Manufacturing Unit)**
2)	**Batch size**	: a) Apprentice selection as per Apprenticeship Guidelines.
3)	**Examination**	: i) The internal assessment will be held on Completion of the training duration. :ii) Shift In-charge will be conducting exam at the end of training.

.4.**Instructors Qualification:**

i) 10th or 12th passed or Degree/Diploma in computer, Electrical or Mechanical or Bachelor/Master of Science(Physics) from recognized university/Board with one/two year post
qualification experience respectively in the relevant field.

OR

5. Infrastructure for On-Job Training: - As per Annexure–I

8.2.1 Syllabus for Practical Training/ On the Job Training Duration – 12 Months

1) Introduction of Course. 2) Focus on rough stone, mines and past or 3) History of Diamond 4) Laser Machine Operating System. 5) Factors & Characteristics of the Diamond 6) Characteristics of the Laser Machines 7) Safety & Health	1) Knowledge of the Diamond & Diamond Laser Cutting Machines
8) Why the Laser cutting is Necessary ? **9)** How the Laser cutting is helpful in business of job ? **10)** Focus on accurate diamond cutting job	Method of Laser cutting
11) Focus on Marking of the Diamond	To see the Accuracy to stick the diamond before laser cutting
12) Focus on Minimum weight loss	See the accuracy of cutting , Timing
13) What id the difference between Laser sawing & Manual sawing **14)** Practical knowledge of various different machines used in diamond laser cutting	**1,**Practical knowledge about "JIG" , How to stick diamond into JIG & set into setup computerized machines **2,** Laser micro machines **3,** Laser ultimate machines **4,** Laser advantage Machines **5,** Laser new diode machines **6,** Laser quazer machines (1/1 Manual process) **7,**Laser water jet (Manual) **8,** Plate sawing 9, 4P Machines (Four process on rough diamond) **Laser Sawing (Ultimate Micro)**
15) Practical Knowledge & Guidance	**1 Machine Start (Set-up station)** 1.1 Press the power button "ON". 1.2 Put the amplifier "ON"(for set-up 3,4&5 only.) 1.3 Write down the password. 1.4 Set the required program. 1.5 Set the jig on the table. 1.6 Write the jig No.

	1.7 Set the diamonds. 1.8 See that the cursor remains on the diamond marking. 1.9 Always fill the jig sheet of setup machine completely. **2 Machine start (Ultimate micro)** 2.1 When the power resumes, Make "ON " the green switch. 2.2 Write down the password. 2.3 Make the pump " ON ", Turn clockwise. **3 Production Set-up** 3.1 Double click the "Ultimate "icon. 3.2 Enable the amplifier. 3.3 Run the "home" cycle. 3.4 To start the laser, open" Laser control" and click on the" Turn on laser ". 3.5 Set current and frequency into the "laser control" up to previously used level. 3.6 Do not change the current and frequency without prior permission of Incharge. 3.7 Put the set jig on the table, write down the set jig No. and press "Start" button. 3.8 Check the IIOFFSET" on 1st diamond. 3.9 When diamond cuts push next button, the table will reach to the next diamond. 3.10 Check the "OFFSET" on 11th position also . 3.11 Always fill the data sheet of ultimate micro machine completely. **4 Switchina "OFF" the machine.** 4.1 Open the "laser control" and click on the "laser to standby". 4.2 Disable the amplifier. 4.3 Close the programme. 4.4 Shut down the computer. 4.5 Make "OFF" the pump, Turn anti-clockwise

	4.6 Make the main switch " OFF ". **5. Shutting down the Set-up Station** 5.1 Close the program 5.2 Shut down the computer 5.3 Press the power button "OFF"

9. ASSESSMENT STANDARD

Assessment Guideline:

Appropriate arrangements should be made to ensure that there will be no artificial barriers to assessment. The nature of special needs should be taken into account while undertaking assessment. Due consideration to be given while assessing for team work, avoidance/reduction of scrape/wastage and disposal of scarp/wastage as per procedure, productivity, regulatory compliances , behavioural attitude and regularity in training.

The following marking pattern to be adopted while assessing:

a) Weightage in the range of 60-75% to be allotted during assessment under following performance level:

For this grade, the candidate with occasional guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of an acceptable standard of craftsmanship.

In this work there is evidence of:

Good skill levels in reagent manufacturing.
Machine Handling
Many tolerances while undertaking different work are in line with those demanded by the component/job.
A fairly good level of neatness and consistency in the accuracy
Occasional support in completing the project/job.

b) Weightage in the range of above75%- 90% to be allotted during assessment under following performance level:

For this grade, the candidate, with little guidance and showing due regard for safety procedures and practices, has produced work which demonstrates attainment of a reasonable standard of craftsmanship.

In this work there is evidence of

Very Good skill levels in reagent manufacturing.
Machine Handling with trouble shooting.
Meeting exact tolerances while undertaking different work are in line with those demanded by the component/job.
A fairly very good level of neatness and consistency in the inventory accuracy
Rare support in completing the project/job.

c) Weightage in the range of above 90% to be allotted during assessment under following performance level:

For performance in this grade, the candidate, with minimal or no support in organization and execution and with due regard for safety procedures and practices, has produced work which demonstrates attainment of a high standard of craftsmanship.

In this work there is evidence of:

Very Good skill levels in reagent manufacturing.
Machine Handling with trouble shooting and general basic maintenance.
Meeting and exceeding tolerances level expectations while undertaking different work are in line with those demanded by the component/job.
A high level of neatness and consistency in the inventory accuracy
Minimal or No Rare support in completing the project/job.

10. FURTHER LEARNING PATHWAYS

Employment opportunities:

On successful completion of this course, the candidates may be gainfully employed in the following industries:

1. Diamond Manufacturing Industry

ANNEXURE – I

TOOLS & EQUIPMENT FOR BASIC TRAINING

INFRASTRUCTURE FOR PROFESSIONAL SKILL & PROFESSIONALKNOWLEDGE TRADE:

Diamond Laser sawing Machine Operator (Production/Manufacturing Unit)

LIST OF TOOLS & EQUIPMENTS FOR 20 APPRENTICES

A : TRAINEES TOOL KIT:-

Sr. No.	Description of Item with detailed specifications	Item type i.e. Machinery / Equipment OR Shop Outfit OR Trainee Toolkit	Quantity Required per one Batch of Students	Quantity Required per one Batch of Students for Instructor	Total Quantity Required (Total of previous two columns)
1.	Eye Glass	Trainee Toolkit	20	1	21
2.	Whitener	Trainee Toolkit	20	1	21
3.	Velvet Tray	Trainee Toolkit	20	1	21
4.	Extractor	Trainee Toolkit	20	1	21
5.	Hand Glows	Trainee Toolkit	20	1	21
6.	Eye Protector Goggles	Trainee Toolkit	20	1	21
7.	Marker Pen / Pen/ Pencil	Trainee Toolkit	20	1	21
8.	Laser Machines	Machinery / Equipment	1	1	1
9.	Laser Ultimate	Machinery / Equipment	1	1	1
10.	Laser Advantage	Machinery / Equipment	1	1	1
11.	Laser New Diode	Machinery / Equipment	1	1	1
12.	Laser Quazer	Machinery / Equipment	1	1	1
13.	Laser Water Jet	Machinery / Equipment	1	1	1
14.	Laser Plate Sawing	Machinery / Equipment	1	1	1
15.	4P (Four Process Laser Machines)	Machinery / Equipment	1	1	1

16.	Revolving Chair	Furniture	20	1	21
17.	Self Walt Cupboard	Furniture	0	01	01
18.	Office Table	Furniture	0	01	01
19.	Cup board	Furniture	0	02	02

K.P. SANGHVI & SONS SURAT

Note: In case of basic training setup by the industry the tools, equipment and machinery available in the industry may also be used for imparting basic training.

INFRASTRUCTURE FOR ON-JOB TRAINING

TRADE: Diamond Laser Sawing Machine Operator (Production/Manufacturing Unit)

Actual training will be conducted in the establishment using their own facility. It depends on the existing facilities available in the establishments. However, the industry should ensure that the broad skills defined against On-Job Training part (i.e. 12 months) are imparted. In case of any short fall the concern industry may impart the training in cluster mode/ any other industry to cover up the short fall.

ANNEXURE-II

GUIDELINES FOR INSTRUCTORS AND PAPER SETTERS

1. Due care to be taken for proper & inclusive delivery among the batch. Some of the following some method of delivery may be adopted:

A) LECTURE

B) LESSON

C) DEMONSTRATION

D) PRACTICE

E) GROUP DISCUSSION

F) DISCUSSION WITH PEER GROUP

G) PROJECT WORK

2. Maximum utilization of latest form of training viz., audio visual aids, integration of IT, etc. may be adopted.

3. The total hours to be devoted against each topic may be decided with due Diligence to safety & with prioritizing transfer of required skills.

For K. P. Sanghvi & Sons

V. S. Parikh

Authorised Signatory

K.P. SANGHVI & SONS SURAT