

# Model Curriculum

## Jigger Machine Operator

**SECTOR: TEXTILE**  
**SUB-SECTOR: PROCESSING**  
**OCCUPATION: DYEING & PRINTING**  
**REF. ID: TSC/ Q 5207**  
**NSQF LEVEL: 4**



## Certificate

### CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

**TEXTILE SECTOR SKILL COUNCIL**

for the

**MODEL CURRICULUM**

Complying to National Occupational Standards of Job Role/ Qualification Pack: '**Jigger Machine  
Operator**' QP No. 'TSC/ Q 5207' **NSQF Level 4**'

Date of Issuance: **August, 9<sup>th</sup>, 2017**

Valid up to: **August 9<sup>th</sup>, 2020**

\* Valid up to the next review date of the Qualification Pack

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# Jigger Machine Operator

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Jigger Machine Operator”, in the “Textile” Sector/Industry and aims at building the following key competencies amongst the learner.

<b>Program Name</b>	<b>Jigger Machine Operator</b>		
<b>Qualification Pack Name &amp; Reference ID.</b>	<b>Jigger Machine Operator, TSC/ Q 5207, version 1.0</b>		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	09-08-2017
<b>Pre-requisites to Training</b>	10th standard, preferably		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>• Perform taking charge of shift and handing over shift</li> <li>• Operate the Jigger machine</li> <li>• Prepare the sample for check quality of processed fabric</li> <li>• Maintain work area, tools and machines</li> <li>• Gain behavioral skill for team working</li> <li>• Maintain health, safety and security at work place</li> <li>• Comply with industry and organizational requirement</li> </ul>		

This course encompasses 7 out of 7 Compulsory National Occupational Standards (NOS), 1 out of 1 Optional NOS of “**Jigger Machine Operator**” Qualification Pack issued by “TSC: Textile Sector Skill Council”

Sr. No	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Taking charge of shift and handing over shift to Jigger Machine Operator</b></p> <p><b>Theory Duration</b> (hh:mm) 08:00</p> <p><b>Practical Duration</b> (hh:mm) 35:00</p> <p><b>Corresponding NOS Code</b> TSC/N 5201</p>	<ul style="list-style-type: none"> <li>Gain knowledge on general discipline</li> <li>Gain knowledge on basic skills of communication</li> <li>Understand the role of Jigger machine operator</li> <li>Perform tasks while taking charge of shift and handing over shift</li> <li>Become familiar in faults identification</li> </ul>	<p><u>Class room requirements:</u> a batch of 25 people seating capacity with a screen and projector</p>
2	<p><b>Operating the Jigger Machine</b></p> <p><b>Theory Duration</b> (hh:mm) 03:30</p> <p><b>Practical Duration</b> (hh:mm) 37:30</p> <p><b>Corresponding NOS Code</b> TSC/N 5202</p>	<ul style="list-style-type: none"> <li>Gain knowledge on machine parts &amp; its function</li> <li>Gain knowledge on preparation activities of Jigger machine</li> <li>Perform Starting and feeding operation</li> <li>Perform machine settings regarding processing parameters</li> </ul>	<p>1. <u>common for every batch:</u> poster/video visuals for work method</p> <p>2. <u>Class room requirements:</u> a batch of 25 people seating capacity with a screen and projector</p>
3	<p><b>Check the quality of a sample of the processed fabric</b></p> <p><b>Theory Duration</b> (hh:mm) 04:30</p> <p><b>Practical Duration</b> (hh:mm) 17:30</p> <p><b>Corresponding NOS Code</b> TSC/N 5203</p>	<ul style="list-style-type: none"> <li>Perform mangle pressure setting</li> <li>Perform and check the processed sample matching with the standard</li> </ul>	<p>1. <u>common for every batch:</u> poster/video visuals for work method</p> <p>2. <u>Class room requirements:</u> a batch of 25 people seating capacity with a screen and projector</p>

<p>4</p>	<p><b>Maintain work area, tools and machines</b></p> <p><b>Theory Duration</b> (hh:mm) 12:00</p> <p><b>Practical Duration</b> (hh:mm) 22:00</p> <p><b>Corresponding NOS Code</b> TSC/N 9001</p>	<ul style="list-style-type: none"> <li>Gain knowledge on Housekeeping system</li> <li>Identify and know unique functions of basic hand tools like cleaning hook, cleaning stick, bag, etc.</li> <li>Handling equipment importance's</li> <li>Perform maintenance activities for handling equipment</li> </ul>	<p>1. common for every batch: poster/video visuals for work method</p> <p>2. <u>Class room requirements:</u> a batch of 25 people seating capacity with a screen and projector</p>
<p>5</p>	<p><b>Working in a team</b></p> <p><b>Theory Duration</b> (hh:mm) 12:00</p> <p><b>Practical Duration</b> (hh:mm) 19:00</p> <p><b>Corresponding NOS Code</b> TSC/N 9002</p>	<ul style="list-style-type: none"> <li>Understand the team work and its importance</li> <li>Gain Knowledge about the basic requirements for team working</li> </ul>	<p><u>Class room requirements:</u> a batch of 25 people seating capacity with a screen and projector</p>
<p>6</p>	<p><b>Maintain health, safety and security at work place</b></p> <p><b>Theory Duration</b> (hh:mm) 27:00</p> <p><b>Practical Duration</b> (hh:mm) 56:00</p> <p><b>Corresponding NOS Code</b> TSC/N 9003</p>	<ul style="list-style-type: none"> <li>Gain knowledge about the general safety Rules</li> <li>Gain knowledge about the importance of personal protective equipment like apron, cap, earplugs, nose mask etc. and their application under different working conditions.</li> <li>Gain knowledge on various health hazards relevant to workplace and basic first aid training.</li> <li>Identify and select right equipment such as fire extinguisher &amp; based on type of fire.</li> <li>Become good practice on first aid, firefighting etc.</li> </ul>	<p>1. A sample of <u>following items for each trainee:</u> apron, head cap, nose mask, ear plug, shoes</p> <p>2. <u>common for every batch:</u> first aid materials, fire extinguisher, work method posters/pictures,</p> <p>3. <u>Class room requirements:</u> 25 people seating capacity</p>

7	<p><b>Comply with industry and organisational requirement</b></p> <p><b>Theory Duration</b> (hh:mm) 14:00</p> <p><b>Practical Duration</b> (hh:mm) 32:00</p> <p><b>Corresponding NOS Code</b> TSC/N 9004</p>	<ul style="list-style-type: none"> <li>• Know about organizational and industry standards</li> <li>• Know the requirements for self-development</li> <li>• Gain knowledge on Organizational &amp; Industry standards</li> </ul>	<p><u>Class room requirements:</u> 25 people seating capacity with a screen and projector</p>
	<p><b>COMPULSORY NOS: Total Duration</b></p> <p><b>Theory Duration 81:00</b></p> <p><b>Practical Duration 219:00</b></p>	<p><b>Unique Equipment Required:</b> Apron, head cap, nose mask, earplug, shoe, Fabric trolley, Fabric roll, Empty Fabric roll, Pen &amp; Pencil</p>	

OPTIONS (Optional to Choose any or all or none)

OPTION 1 : Solar power drive attachment

1	<p><b>Operation and Maintenance of solar attachment</b></p> <p><b>Theory Duration</b> (hh:mm) 10:00</p> <p><b>Practical Duration</b> (hh:mm) 20:00</p> <p><b>NOS Code</b> TSC/N 7904</p>	<ul style="list-style-type: none"> <li>• Know about the operation of solar power system and their main components</li> <li>• Know the cleaning procedures of solar power system components</li> <li>• Gain knowledge on maintenance activities of solar power components such as Batteries, Charge controller, Solar panels etc</li> </ul>	<p><u>1. common for every batch:</u> poster/video visuals for work method</p> <p><u>2. Class room requirements:</u> a batch of 25 people seating capacity with a screen and projector</p>
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	<b>OPTION 1 :</b> <b>Total Duration</b>  <b>Theory Duration</b> <b>10:00</b>  <b>Practical Duration</b> <b>20:00</b>	<b>Unique Equipment Required:</b> Laptop, white board, marker, projector, first aid kit	
<b>GRAND Total Duration Minimum Duration for the QP= 300 hr</b>  <b>Theory: <u>81 hr</u></b> <b>Practical: <u>219 hr</u></b>  <b>Maximum Duration for the QP= <u>330 hr</u></b>  <b>Theory:<u>91 hr</u></b> <b>Practical: <u>239 hr</u></b>	<b>Unique Equipment Required:</b> Apron, head cap, nose mask, earplug, shoe, Fabric trolley, Fabric roll, Empty Fabric roll, Pen & Pencil		

**Grand Total Course Duration: 300 Hours, 0 Minutes, with Optional NOS 330 Hours**

*(This syllabus/ curriculum has been approved by TSC: Textile Sector Skill Council)*



## Trainer Prerequisites for Job role: “Jigger Machine Operator ” mapped to Qualification Pack: “Jigger Machine Operator /TSC Q 5207, Version 1.0”

Sr. No.	Area	Details
1	<b>Description</b>	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “Jigger Machine Operator /TSC Q5207, Version 1.0
2	<b>Personal Attributes</b>	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organized and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	<b>Minimum Educational Qualifications</b>	Preferably equivalent to 10th (Normal literacy of reading, writing and understanding)
4a	<b>Domain Certification</b>	Certified for Job Role: “Jigger Machine Operator” mapped to QP: “Jigger Machine Operator TSC/ Q 5207, Version 1.0”. Minimum accepted score 80%
4b	<b>Platform Certification</b>	Required that the Trainer is certified for MEP/Q 0102 Job Role: “Trainer” with atleast 80% score
5	<b>Experience</b>	Minimum 2 years’ experience as Jigger Machine Operator

## CRITERIA FOR ASSESSMENT OF TRAINEES

**Job Role: Jigger Machine Operator (Solar power drive attachment)**  
**Qualification Pack: TSC/Q5207**  
**Sector Skill Council: Textile Sector Skill Council**

### Guidelines for Assessment:

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/ set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% in aggregate marks to successfully clear the assessment
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation	
				Theory	Skills Practical
<b>1. TSC/ N5201 (Taking charge of shift and handing over shift to Jigger Machine Operator)</b>	PC1. come at least 10 - 15 minutes earlier to the work place	<b>37</b>	2	0	2
	PC2. bring the necessary operational tools to the department		1	0	1
	PC3. meet the previous shift operator and discuss with him/ her regarding the issues faced by them with respect to the quality or production or spare or safety or any other specific instruction etc.		3	1	2
	PC4. understand the fabric being processed & process running on the machine		2	0	2
	PC5. ensure the technical details are mentioned on the job card display on the machine		2	1	1
	PC6. check for the availability of the spare trolley for unloading the fabric		1	1	0
	PC7. check the next batch to be processed is ready near the machine		1	1	0
	PC8. ensure the required dyes & chemicals are already weighed & prepared		1	1	0
	PC9. check the cleanliness of the		2	0	2

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation	
				Theory	Skills Practical
	machines & other work areas				
	PC10. question the previous shift operator for any deviation in the above and bring the same to the knowledge of his/ her shift superior as well that of the previous shift as well.		2	0	2
	PC11. hand over the shift to the incoming operator in a proper manner		2	0	2
	PC12. ensure proper communication regarding fabric quality & the process running on the machine while providing the details		3	1	2
	PC13. provide all relevant information regarding the stoppages or breakdown in the machine, any damage to the fabric or machine.		2	0	2
	PC14. ensure the empty trolley is near the machine for unloading the fabric		1	0	1
	PC15. ensure the next lot to be processed, which is already stitched & arranged properly is ready near the machine		1	0	1
	PC16. ensure the required dyes & chemicals for the next lot or next process are weighed & prepared		1	0	1
	PC17. get clearance from the incoming counterpart before leaving the work spot		2	0	2
	PC18. report to his/ her shift superiors as well as that of the incoming shift operator in case his/ her counterpart doesn't report for the incoming shift		2	0	2
	PC19. ensure the shift has to be properly handed over to the incoming shift operator		1	1	0
	PC20. report to his/ her shift superior about the quality / production / safety issues/ any other issue faced in his/ her shift and leave the department only after getting concurrence for the same from his/ her superiors		2	0	2

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC21. collect the wastes from waste collection bags, weigh them and transport to storage area		1	0	1
	PC22. ensure the machine and its work place is clean		2	0	2
	<b>Total</b>		<b>37</b>	<b>7</b>	<b>30</b>
<b>2. TSC/ N5202 (Operating the Jigger Machine)</b>	PC1. understand the task mentioned in the work order	<b>35</b>	2	1	1
	PC2. ensure that the machine is empty & clean		2	0	2
	PC3. load the fabric from the batch/trolley in the center of the machine		2	0	2
	PC4. ensure fabric is crease-less and evenly fed onto the machine		2	0	2
	PC5. prepare the chemical/dye-stuff required		2	0	2
	PC6. inject the chemical in the machine tank/dispenser		2	0	2
	PC7. know the operations of the machine & the plc programs		2	0	2
	PC8. read & understand the process being followed to do the task		3	1	2
	PC9. check the ph, temp & other parameters during the process		3	1	2
	PC10. maintain even temp across the width of machine		2	0	2
	PC11. maintain even & minimum tension on the fabric		2	0	2
	PC12. drain the machine once sample is approved		1	0	1
	PC13. unload the fabric from the machine after completion of the process		1	0	1
	PC14. make sure the machine is kept clean at all times ,before loading, while running & after unloading the fabric		2	0	2
	PC15. follow the preventive maintenance schedule & ensure the machine is running smoothly		2	0	2
	PC16. check that all controls are functioning properly		2	0	2
	PC17. ensure the right quality of water , steam & air is available for proper functioning of machine		2	0	2

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC18. cool down the machine after completion of job		1	0	1
	<b>Total</b>		<b>35</b>	<b>3</b>	<b>32</b>
<b>3. TSC/N 5203 (Check the quality of a sample of the fabric processed at jigger)</b>	PC1. cut sample as per the time / no. of turn mentioned in the work order to avoid any delay	<b>19</b>	3	1	2
	PC2. cut proper size of the sample		1	0	1
	PC3. cut the sample from same place every time		1	0	1
	PC4. clean hands or cutting tools to avoid soiling of the sample		2	0	2
	PC5. develop techniques for various types of dyestuffs used in the process such as direct, reactive, vat, sulphur etc.		3	1	2
	PC6. manage soaping chemical, temp & no. of soaping/ washings for different dyestuff		3	1	2
	PC7. manage method, temp & place of drying of the cut sample		3	1	2
	PC8. compare the sample with the standard attached to the work order or in the master file		2	0	2
	PC9. take the sample to your supervisor if the sample is not matching to the standard for decision		1	0	1
	<b>Total</b>		<b>19</b>	<b>4</b>	<b>15</b>
<b>4. TSC/ N9001 (Maintain work area, tools and machines)</b>	PC1. handle materials, machinery, equipment and tools with care and use them in the correct way	<b>29</b>	3	1	2
	PC2. use correct lifting and handling procedures		1	0	1
	PC3. use materials to minimize waste		2	1	1
	PC4. maintain a clean and hazard free working area		3	1	2
	PC5. maintain tools and equipment		3	1	2
	PC6. carry out running maintenance within agreed schedules		2	1	1
	PC7. carry out maintenance and/or cleaning within one's responsibility		1	0	1
	PC8. report unsafe equipment and other dangerous occurrences		1	1	0
	PC9. ensure that the correct machine guards are in place		2	1	1

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC10. work in a comfortable position with the correct posture		3	1	2
	PC11. use cleaning equipment and methods appropriate for the work to be carried out		2	1	1
	PC12. dispose of waste safely in the designated location		2	0	2
	PC13. store cleaning equipment safely after use		2	0	2
	PC14. carry out cleaning according to schedules and limits of responsibility		2	1	1
	<b>Total</b>		<b>29</b>	<b>10</b>	<b>19</b>
<b>5.TSC/ N9002 (Working in a team)</b>	PC1. be accountable to the own role in whole process	<b>26</b>	2	1	1
	PC2. perform all roles with full responsibility		3	1	2
	PC3. be effective and efficient at workplace		4	1	3
	PC4. properly communicate about company policies		2	1	1
	PC5. report all problems faced during the process		1	1	0
	PC6. talk politely with other team members and colleagues		2	1	1
	PC7. submit daily report of own performance		1	0	1
	PC8. adjust in different work situations		2	0	2
	PC9. give due importance to others' point of view		2	1	1
	PC10. avoid conflicting situations		3	1	2
	PC11. develop new ideas for work procedures		2	1	1
	PC12. improve upon the existing techniques to increase process efficiency		2	1	1
<b>Total</b>	<b>26</b>	<b>10</b>	<b>16</b>		
<b>6. TSC/ N9003 (Maintain health, safety and security at workplace)</b>	PC1. comply with health and safety related instructions applicable to the workplace	<b>71</b>	5	1	4
	PC2. use and maintain personal protective equipment such as "ear plug", "nose mask", "head cap" etc., as per protocol		5	1	4
	PC3. carry out own activities in line		3	1	2

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation	
				Theory	Skills Practical
	with approved guidelines and procedures				
	PC4. maintain a healthy lifestyle and guard against dependency on intoxicants		2	1	1
	PC5. follow environment management system related procedures		3	1	2
	PC6. identify and correct (if possible) malfunctions in machinery and equipment		3	1	2
	PC7. report any service malfunctions that cannot be rectified		2	1	1
	PC8. store materials and equipment in line with organisational requirements		2	0	2
	PC9. safely handle and remove waste		2	0	2
	PC10. minimize health and safety risks to self and others due to own actions		3	1	2
	PC11. seek clarifications, from supervisors or other authorized personnel in case of perceived risks		3	1	2
	PC12. monitor the workplace and work processes for potential risks and threat		2	0	2
	PC13. carry out periodic walk-through to keep work area free from hazards and obstructions, if assigned		3	2	1
	PC14. report hazards and potential risks/ threats to supervisors or other authorized personnel		3	2	1
	PC15. participate in mock drills/ evacuation procedures organized at the workplace		3	1	2
	PC16. undertake first aid, fire-fighting and emergency response training, if asked to do so		5	2	3
	PC17. take action based on instructions in the event of fire, emergencies or accidents		4	1	3
	PC18. follow organisation procedures for shutdown and evacuation when required		2	0	2

National Occupational Standards (NOS)	Performance Criteria (PC)	Total Marks	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC19. identify different kinds of possible hazards (environmental, personal, ergonomic, chemical) of the industry		5	1	4
	PC20. recognise other possible security issues existing in the workplace		3	1	2
	PC21. recognise different measures to curb the hazards		3	1	2
	PC22. communicate the safety plan to everyone		3	2	1
	PC23. attach disciplinary rules with the implementation		2	1	1
	<b>Total</b>			<b>71</b>	<b>23</b>
<b>7. TSC/ N9004 (Comply with industry and organisational requirement)</b>	PC1. perform own duties effectively	<b>39</b>	4	1	3
	PC2. take responsibility for own actions		4	1	3
	PC3. be accountable towards the job role and assigned duties		3	1	2
	PC4. take initiative and innovate the existing methods		4	1	3
	PC5. focus on self-learning and improvement		3	1	2
	PC6. co-ordinate with all the team members and colleagues		3	1	2
	PC7. communicate politely		3	1	2
	PC8. avoid conflicts and miscommunication		3	1	2
	PC9. know the organisational standards		2	1	1
	PC10. implement them in your performance		3	1	2
	PC11. motivate others to follow them		3	1	2
	PC12. know the industry standards		2	1	1
	PC13. align them with organisation standards		2	0	2
	<b>Total</b>			<b>39</b>	<b>12</b>
<b>Total</b>		<b>256</b>	<b>150</b>	<b>69</b>	



OPTIONS					
Option 1: Operation and maintenance of solar attachment					
TOTAL MARKS: 50				Marks Allocation	
Assessible Outcomes	Assessment Criteria	Total Marks	Out of	Theory	Skills Practical
TSC/N7904 Operation and Maintenance of solar attachment	PC1. Clear the weed/ Grass near the solar panels if any	50	3	1	2
	PC2. Clean the surface of the solar panel for dust with wet sponge/cloth		3	1	2
	PC3. Ensure the Charge controller, Batteries are working properly as instructed		3	1	2
	PC4. Prepare Solar powered Handloom/ Khadi machine for operation		4	1	3
	PC5. Switch on the main motor and start the machine for production		3	1	2
	PC6. Check periodically for the working of light indicators and display panel for voltage fluctuation		5	2	3
	PC7. Ensure that the battery is kept at a dry place		4	1	3
	PC8. Check the Electrolyte level of battery and top up the electrolyte whenever required		5	2	3
	PC9. Check for electrolyte/ Distilled water leak from batteries		5	2	3
	PC10. Clean the battery at prescribed intervals for fluff accumulation		3	1	2
	PC11. Clean the inverter, Battery Charger and Charge controller for fiber dust		3	1	2
	PC12. Inspect and ensure the cleanliness of panel boxes		3	1	2
	PC13. Use Personal Protective Equipments while topping up of Distilled water and cleaning		3	1	2
	PC14. Use appropriate tools such as cloth, brush for to various parts of the power system		3	1	2
	<b>Total</b>	<b>50</b>	<b>17</b>	<b>33</b>	