



Technical, Entrepreneurship and Vocational Education and Training Authority (TEVETA)

CRAFT CERTIFICATE IN MECHANICAL FITTING

YEAR 2

Record of Practical Assessment

Learner`s name:_____

Learner`s NRC no.:_____

Learner`s TEVETA No.:_____

Institution Name:_____

Institution TVA No.:_____

Assessment Period:_____

PREFACE

The Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA) is an institution created under the Technical Education, Vocational and Entrepreneurship Training Act Number 13 of 1998, as amended by the Technical Education, Vocational and Entrepreneurship Training (Amendment) Act Number 11 of 2005.

The Act among other things provides that TEVETA shall:

- (a) regulate and conduct national examinations and assessments relating to technical education, vocational and entrepreneurship training;
- (b) charge and collect fees in respect of examinations, assessments and other services provided by the Authority;
- (c) award certificates to persons who succeed in examinations and assessments undertaken under this Act
- (d) do all such things connected with or incidental to the functions of the Authority under this Act.

Through this mandate, the Assessment and Qualifications Division of TEVETA has developed Practical Assessment Tool Kits to enable learners achieve the competences that are congruent with the demand of the workplace tasks. These tool kits in part are also intended to ensure that similar conditions under which all students in TEVET are assessed and examined apply wherever the course is undertaken in Zambia.

The Trainers shall work with the Learners to collect evidence of competence, using the benchmarks provided by the unit standards. During the year, the Learners shall be required to undertake a series of practical assessment tasks. It is the sum of all these assessments tasks that deems a Learner to be competent (or not).

This approach to assessment is not a one-off event but one that gives learners many opportunities to demonstrate skill and allow for the capturing and recording of these demonstrations.

For the Learner to be deemed competent, they must demonstrate competency in every aspect of the practical tasks being undertaken. It must however be understood by the Trainer that Competency does not mean expert. It means that the candidate has attained sufficient skill and knowledge to perform the activity or service to a degree and quality that is acceptable to the industry and the customer in a time within which a competent person at the level could reasonably be expected to perform the task.

While this will be undertaken at institutional level, it is therefore envisaged that the Assessment principles of VALIDITY, RELIABILITY, FAIRENESS and FLEXIBILITY shall at all times be adhered to.

Pre-Assessment

Assessment process explained to the Trainee (✓ if Yes).	<input type="checkbox"/>
Any appeal relating to the outcome of the assessment or the way in which the assessment was conducted shall be made through the TEVETA <u>fair treatment policy</u> as explained to the Trainee (✓ if Yes).	<input type="checkbox"/>

Learner/Trainee Learner/Trainee name: (Print) Learner/Trainee comments:	Assessor/Examiner Assessor/Examiner name: (Print) Assessor/Examiner comments:	
I fully understand the assessment and appeals process.	Theory assessment sighted and checked as satisfactory.	<input type="checkbox"/>
Signature: Date:	Signature: Date:	

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TASK 1: HORIZONTAL SHAPING USING A SHAPING MACHINE

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Make parallel strips from 40 x 160mm diameter bar. This should include. <ul style="list-style-type: none"> Facing off to the required length Shaping to the required dimensions 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

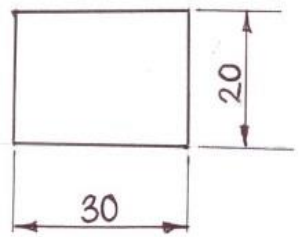
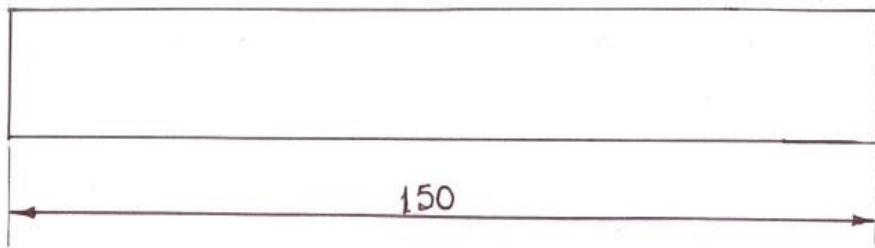
Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:



TASK: 2 GROOVING USING A SHAPER

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Cut a 75mm long key seat on a 50mm diameter shaft. This should include. <ul style="list-style-type: none"> Calculating the width and depth of a key seat Grooving to required dimensions 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK: 3 ANGULAR SHAPING USING A SHAPING MACHINE

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Make Vee block from 50 x 50 x 80mm square bar. This should include. <ul style="list-style-type: none"> Facing off to the required length Performing angular shaping Shaping to required dimensions 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

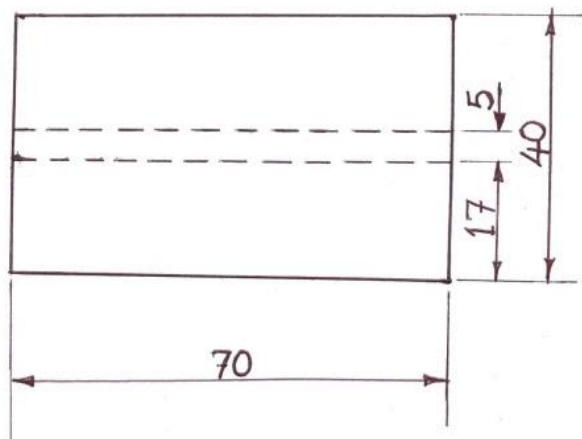
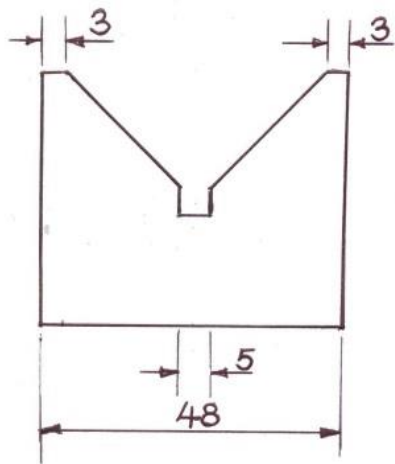
Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:



TASK 4: DISMOUNTING AND MOUNTING OF A BEARING ON A RIG

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety regulations. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Dismount a bearing on the bearing rig. This should include: <ul style="list-style-type: none"> Removing the bearing from the shaft. Inspecting the bearing and shaft 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	Mount the bearing. This should include: <ul style="list-style-type: none"> Cleaning the bearing seat using an emery cloth Applying a thin layer of lubricant on the shaft Mounting and lubricating the bearing 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK 5: REMOVAL AND INSTALLATION OF VEE BELTS

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety regulations. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order Ensuring the guard are in place 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Remove the belts from the pulleys. This should include; <ul style="list-style-type: none"> Reducing the span Removing the belts and the pulleys Inspecting the belts and pulleys' condition 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(C)	Correctly installing the pulleys and the belt. This should include: <ul style="list-style-type: none"> Alignment of pulleys Fitting of the belt 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(d)	Install the belts. This should include: <ul style="list-style-type: none"> Fitting back the pulleys and the belt(s) Aligning and tensioning the belts 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK 6: COUPLING ALIGNMENT

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety regulations. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order Ensuring that the guard is in place 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Align the couplings on the supplied Coupling Rig. This should include: <ul style="list-style-type: none"> Checking the initial alignment and gap between the coupling flanges Dismantling the coupling rig Inspecting the coupling condition and recording the findings Assembling the coupling rig, aligning the couplings and setting the gap between the coupling flanges 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK 7: GEAR BOX MAINTENANCE

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Dismantle the Gearbox. This should include: <ul style="list-style-type: none"> Mate marking Sequential Dismantling of the unit Cleaning and Inspecting the parts 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	Assemble the Gearbox. This should include: <ul style="list-style-type: none"> Align worm wheel to worm shaft Assemble the parts together Set the end float (worm shaft) Lubricating gear box 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK 8: GATE VALVE MAINTENANCE

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Carry out maintenance on a gate valve (Sizes: 4 – 8”) This should include. <ul style="list-style-type: none"> Mate Marking Dismantling parts in sequence Inspecting the seat, and disc Assembling the parts Repacking the valve 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK 9: CENTRIFUGAL PUMP MAINTENANCE

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This include: <ul style="list-style-type: none"> • Putting on the correct PPE • Observing good house keeping • Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Carry out maintenance on a centrifugal pump (Sizes: 1-2 to 4-3 Warman) This operation includes. <ul style="list-style-type: none"> • Dismantling the pump • Inspecting impeller • Inspecting liners • Inspecting shaft sleeve • Assembling the pump • Repacking pump • Test running the pump 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner`s comments:

Signed:

Examiner Name/Sign:

Learner`s Name/sign:

Date:

Date:

TASK 10: POSITIVE DISPLACEMENT PUMP MAINTENANCE

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> • Putting on the correct PPE • Observing good house keeping • Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Carry out maintenance on a positive displacement pump (vane, gear and screw). This should include: <ul style="list-style-type: none"> • Dismantling the pump • Inspecting pumping element(s) • Inspecting inner casing • Inspecting shaft • Inspecting seals • Assembling the pump • Test running the pump 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK: 11 DISMANTLE AND ASSEMBLE RECIPROCATING PISTON COMPRESSORS

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Dismantle compressor. This should include: <ul style="list-style-type: none"> Mate Marking Sequential dismantling Inspecting the parts (pistons , rings, valves, bearings) 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c)	Assemble the compressor. This should include: <ul style="list-style-type: none"> Assembling the compressor in sequence Lubricating the compressor Test running it 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK 12: BELT CONVEYORS –MAINTENANCE

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Carry out maintenance on belt conveyor. This should include. <ul style="list-style-type: none"> Inspecting structure and belt condition Inspecting the joint(s) Inspecting head and tail pulleys for lagging Removing one belt return idler roller and check bearings Inspect skirting and do adjustments if necessary Record findings Mount the idler back 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:

TASK 13: ASSEMBLY OF A HYDRAULIC CIRCUIT

Activity/Operation		Attempts					
		Satisfactory			Not Satisfactory		
During observation of work activities, the candidate demonstrated that they can:		1	2	3	1	2	3
(a)	Adhere to safety procedures. This should include: <ul style="list-style-type: none"> Putting on the correct PPE Observing good house keeping Arranging the tools in good order 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(b)	Assemble a hydraulic system from the circuit given below. This should include: <ul style="list-style-type: none"> Mounting the hydraulic components Connecting the hoses Test run constructed circuit 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Examiner's comments:

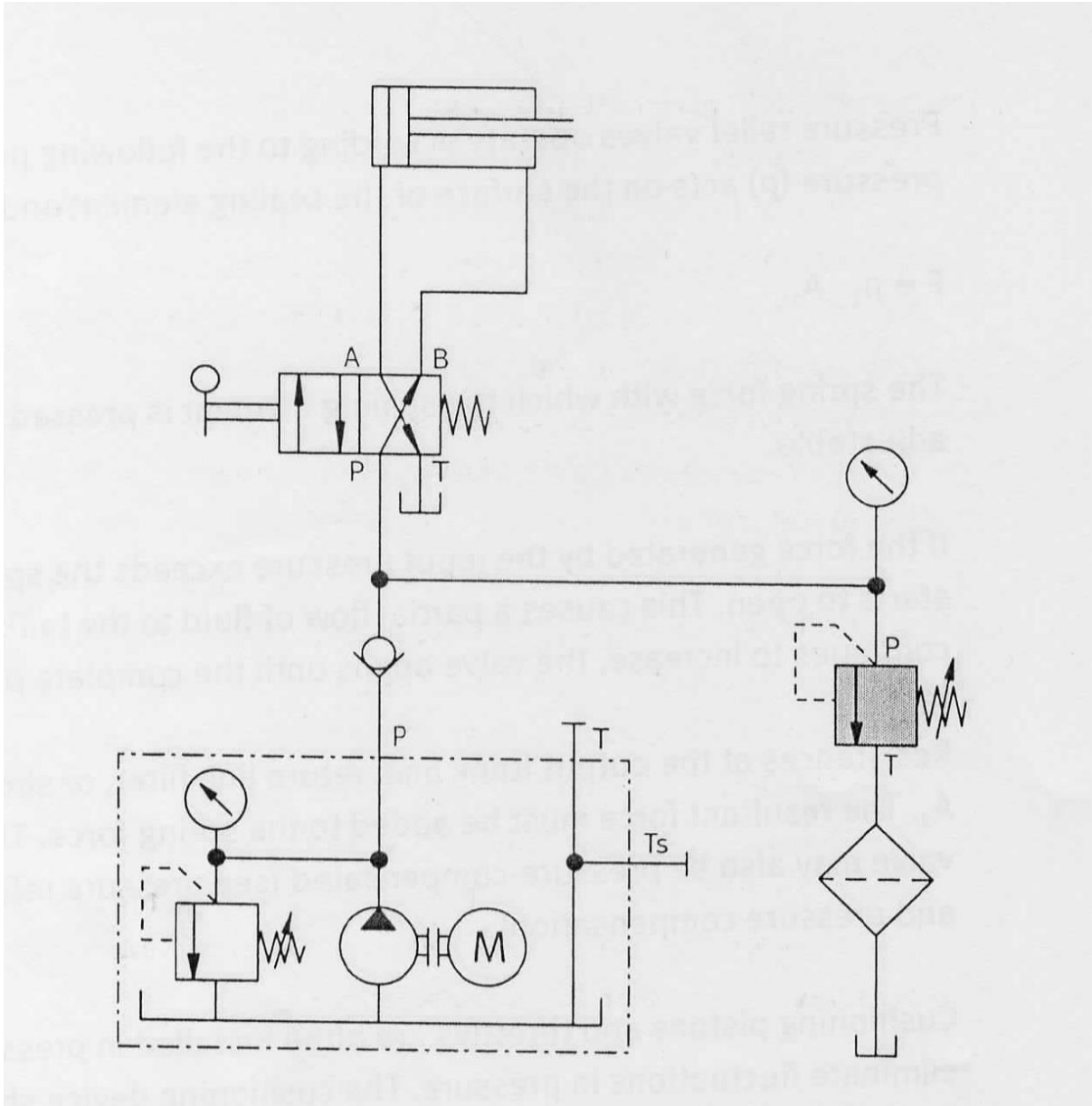
Signed:

Examiner Name/Sign:

Learner's Name/sign:

Date:

Date:



FINAL PRACTICAL ASSESSMENT SUMMARY

Practical assessment summary	Satisfactory	Not Satisfactory
TASK 1: Horizontal Shaping Using a shaper	<input type="checkbox"/>	<input type="checkbox"/>
TASK 2: Grooving Using A shaper	<input type="checkbox"/>	<input type="checkbox"/>
TASK 3: Angular Shaping Using A Shaper	<input type="checkbox"/>	<input type="checkbox"/>
TASK 4: Dismounting and Mounting a Bearing	<input type="checkbox"/>	<input type="checkbox"/>
TASK 5: Removal and Installation of Vee belts	<input type="checkbox"/>	<input type="checkbox"/>
TASK 6: Coupling Alignment	<input type="checkbox"/>	<input type="checkbox"/>
TASK 7: Gearbox Maintenance	<input type="checkbox"/>	<input type="checkbox"/>
TASK 8: Gate valve maintenance	<input type="checkbox"/>	<input type="checkbox"/>
TASK 9: Centrifugal Pump Maintenance	<input type="checkbox"/>	<input type="checkbox"/>
TASK 10: Positive Displacement Pump Maintenance	<input type="checkbox"/>	<input type="checkbox"/>
TASK 11: Dismantle and Assemble A Reciprocating Piston Compressor	<input type="checkbox"/>	<input type="checkbox"/>
TASK 12: Belt conveyor Maintenance	<input type="checkbox"/>	<input type="checkbox"/>
TASK 13. Assembly of a Hydraulic Circuit	<input type="checkbox"/>	<input type="checkbox"/>

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ASSESSMENT OUTCOME

Competent ☐Not Competent ☐

Learner/Trainee	Assessor/Examiner
Learner/Trainee name: _____ (Print)	Assessor/Examiner name: _____ (Print)
Learner/Trainee comments:	Assessor/Examiner comments:
Signature: _____	Signature: _____

Date: _____	Date: _____

VALIDATION OF THE ASSESSMENT

NAME:.....

DATE:.....

POSITION: **PRINCIPAL/HEAD OF INSTITUTION**

SIGNATURE:.....

NAME INSTITUTION:.....

STAMP:

