



## CTS PRESENTATION ASSESSMENT FORM

Presenter's Name	MUHAMMAD ALIEF BIN ZULKEFLI	Date	3/11/2024
Position	EQUIPMENT OPERATOR 2	SCORE	
Topic	CENTRIFUGAL PUMP		
Objective	PROMOTION		
Assessor (s)	MOHD SYUKRI BIN AWANG		

Assessment Criteria	Rating (Please ✓ where appropriate)									
	STRONG			ADEQUATE			IMPROVEMENT NEEDED			
	10	9	8	7	6	5	4	3	2	
<b>A Presentation Skill (20%)</b>										
a. The presenter was well prepared and delivered the material in a clear and structured manner.		✓								
b. The presenter was knowledgeable about the topic and able to relate the importance of the subject matter to his job			✓							
c. The presentation contained practical examples and useful techniques that applied to current work.			✓							
<b>B Creativity (20%)</b>										
a. Did the presenter show creative thinking in the method of development and presentation?			✓							
b. Did presenter get audience involved in "learning" the material?			✓							
<b>C Content (60%)</b>										
a. Did the presenter cover all the key points of the subject matter			✓							
b. Did the presentation incorporate strong, effective supporting material throughout?			✓							
c. Did the presenter give clear and concert explanation and example?				✓						
d. Was the presenter able to answer questions on subject matter? Answers were correct and corresponded with the required understanding?			✓							

**Additional Comments:**

\* need to read the manual more  
 a overall good

Assessed By:	Verified By:
	
Name: MOHD SYUKRI BIN AWANG	Name: M. KHAIRUL RIDHWAN AZLI
Position: Fg 2	Position: CTS FIELD SERVICE MANAGER
Date: 3-11-2024	Date: 3/11/24

## ATTENDANCE FORM

Purpose:  Meeting  Training / Seminar / Workshop

Type of Training:  Classroom  Practical / Hands On  Technical Sharing

Training Facilitator / Trainer: MUHAMMAD ALIFF B. ZULKIFLI

Topic/Subject	CENTRIFUGAL PUMP	Date	3/11/2024
Venue	MEETING ROOM	Time	2:30 PM
Meeting Coordinator		Meeting/ Training Duration	

No.	Name	Position	Signature
1	MUHAMMAD MOOR HANBA	EOT	
2	AIDIL HANAPPU	FE	
3	MOHD HUSJAM B. MAT	EO	
4	ENGRU NAZRI	GET	
5	HAFRIZ HEDJANI	FE	
6	HAFIZUDDIN	FEI	
7	AHMAD SHAMSER BIN MOHAMMAD	EOT	
8	AHMAD SHAFRI BIN MOHAMMAD	GEU	
9	SAHRI IZHAM B. MUAS	EOT	
10	MUHAMMAD AHMUDIN	EOT	
12	M. IKMAL HANI BIN SALIH	EOX	
13	MUHAMMAD AMIR B. MOHD JUANDA	EOT	
14	MUHAMMAD AFHAN B. YUSMAN	EOT	
15	M. HAIRAL RESLI	EOT	

16. NUR IZZAH  
Remark / Comment

# Centrifugal Pump

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*Prepared by:*

**Muhammad Aliff bin Zulkefli**

*Department:*

**Coiled Tubing Services**

# Table of Content

**01**

**Function**

**05**

**Troubleshoot**

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**Maintenance &  
Services**

# Objectives

**01** Explain the function of a centrifugal pump

**05** Maintain and service the centrifugal pump

**02** Identify centrifugal pump's various components

**06** Troubleshoot common pump problems

**03** Describe how the centrifugal pump operates

**04** Identify different pump models

01

# Function

# C-Pump

- A centrifugal pump employs a centrifugal force to develop a pressure that moves a fluid.



# 02 Component in C-Pump

# C-Pump

➤ **Component:**

- **Impeller**

- Open impeller

- **Wear Plates**

- Shims : ideal clearance between impeller & front wear plate is 1/16 inch

- **Wear Rings**

- **Shaft**

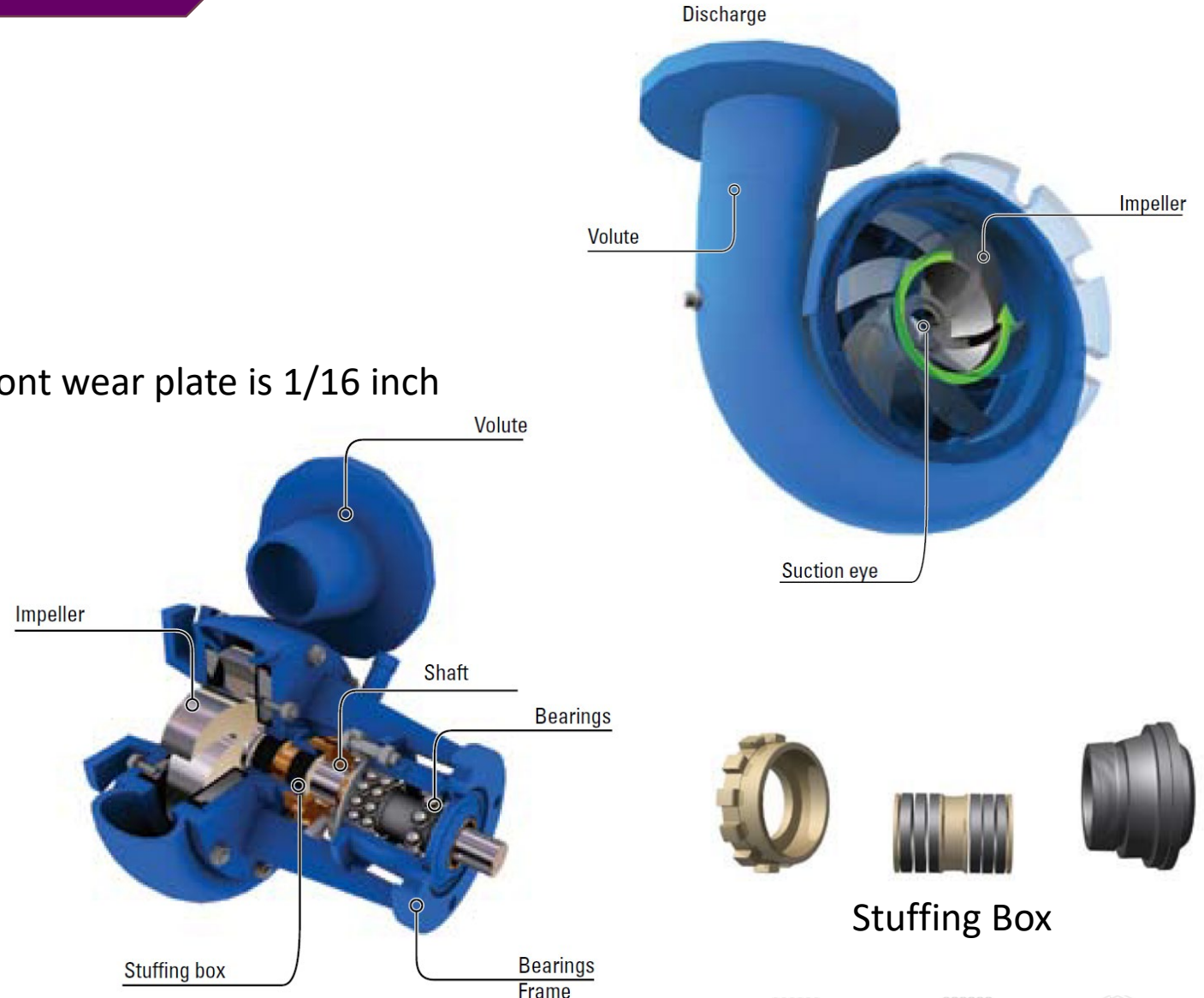
- **Volute**

- **Bearings**

- **Bearing Frame**

- **Stuffing Box**

- **Packing Seals**



# Types of Impeller

01

Open



02

Semi-Closed



03

Close



**03**

# Types of C-Pump

# Types of C-Pump

## ➤ Types of C-Pump:

1. Serva (5x6)

- Shut in Pressure: 50-60 psi

2. Gardner Denver (4x5)

- Shut in Pressure: 40-50 psi

# 04 Maintenance & Services

# Maintenances

- Ensure adequate lubrication for packing
- Do not over-tighten the packing nut.
- Drain the packing lube system.
- Periodically add a small amount of grease to lubricate the bearings.

05

# Troubleshoot

Symptom	Solution
Pump will not prime.	<ul style="list-style-type: none"> <li>a. The pump is too high above the fluid source.</li> <li>b. The seals or packing are taking in air around the shaft.</li> <li>c. Too much clearance between the impeller and front wear plate.</li> <li>d. The pump speed is too slow.</li> <li>e. There is restriction or blockage in the suction.</li> <li>f. There are worn parts, impeller, wear plates, or volute.</li> <li>g. The impeller is loose on the shaft or the key is broken.</li> </ul>
Low discharge pressure.	<ul style="list-style-type: none"> <li>a. There are worn parts, impeller, wear plates, or volute.</li> <li>b. There is restriction in the suction.</li> <li>c. The pump speed is too slow.</li> <li>d. There is too much clearance between impeller, and front wear plates.</li> </ul>
Pump is noisy or vibrates.	<ul style="list-style-type: none"> <li>a. Cavitation</li> <li>b. Worn bearings</li> <li>c. Out of balance</li> <li>d. Loose mounting bolts</li> <li>e. Misaligned coupling</li> <li>f. Speed too high</li> <li>g. Broken impeller vane</li> <li>h. Aeration</li> </ul>
Pump leaks around bolts at volute.	<ul style="list-style-type: none"> <li>a. Wear plates are not sealing at the volute.</li> <li>b. There is excessive clearance between the volute and frame.</li> </ul>