SLICKLINE ASSISTANT WORKBOOK

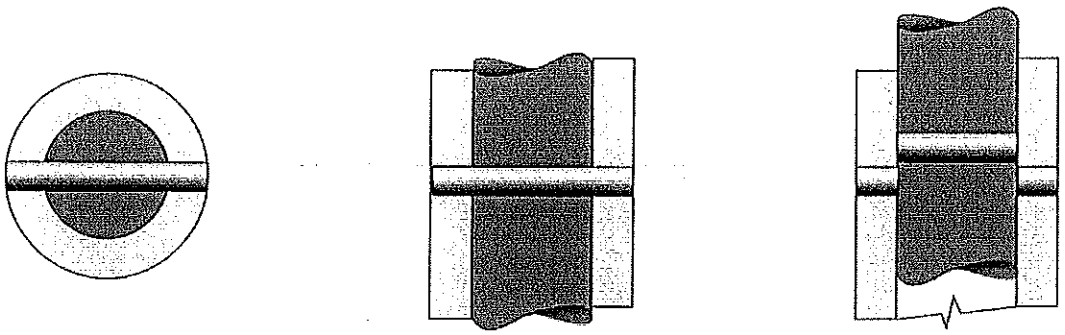
IMPORTANT NOTE:

1. Your point of reference to complete this workbook may be obtained from the following
   - Training Manual and any other training materials provided together with this workbook
   - Your Trainer, Assessor (Slickline Operator), Verifier (FSM) or senior colleagues
   - SOP / Quality Procedures & Processors
2. The completion of this Workbook is a joint effort and responsibility between you and your assessor therefore you have the obligation to request from your assessor to be assessed upon your completion of each topic
3. The completion of this Workbook is part of the MANDATORY requirements which you must fulfill to qualify for a promotion
4. Your training program is mostly self-driven, including this Workbook. It requires individual initiatives, dedication and commitment to complete the process.

NAME	~~MR~~ LENNON CHUNG
DATE OF JOIN	
CONTACT NO.	
RECEIVED DATE	
DATE COMPLETED	

SHEAR PIN DATA

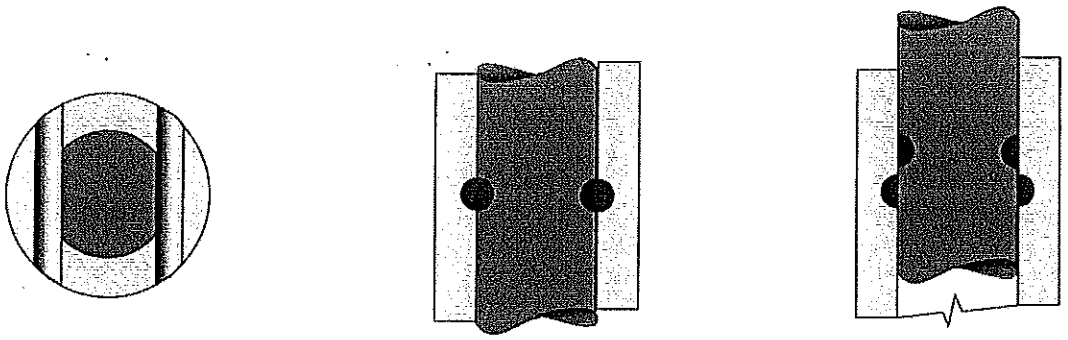
Radial Shear Pins



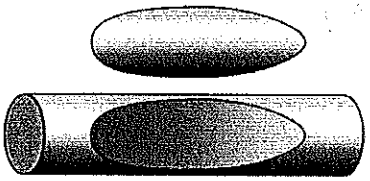
Shearing edges should be sharp and in good condition.

Tangential Shear Pins

Usually of a relatively small diameter as there is an increased shear area over radial types.



Shearing edges should be sharp and in good condition.



Material Strengths:	Aluminium	-	41,000 psi UTS
	Brass	-	43,000 psi UTS
	Mild steel	-	58,000 psi UTS

Note : Stainless steel must never be used as it work hardens and may not shear. Check with a magnet to identify stainless steel from mild steel if in doubt. (Stainless steel is most usually non-magnetic)

TABLE OF CONTENT

INTRODUCTION

CORPORATE PROFILE

Dimension Bid is a Malaysia-based International Well Intervention and Perforation Services company, specializing in Slickline Intervention, Cased Hole Electric Line Logging, Coiled Tubing Services and Braided Line Fishing. Established in 1994 and home-grown, Dimension Bid has developed into a full-fledged intervention service company, having more that 20 years of experience in providing services to National Oil Companies and Multi-National Oil Companies domestically and internationally. Our footprint is located across Malaysia, South East Asia and Central Asia, reflecting our ambition to be a truly global Well Intervention Solutions Partner.

THE GROWTH

Growing from strength to strength our list of client includes Sarawak Shell, ExxonMobil, PCSB and Talisman-Energy Malaysia Limited, ROC Oil, just to name a few. Our involvement expanded from production drilling operations

OUR TEAM

From a humble beginning of 18 employees in 1997, Dimension workforce has now grown to over 200 employees. we believe in realizing full potential of every employee - reason for substantial investment allocated to train everyone, both locally and abroad, in order to achieve the expected high performance and professionalism.

MISSION

To enrich client's business through our expertise in providing an integrated, high-value added solutions in the oil and gas industry.

VISION

To be a Solution Partner of choice to our clients.

THE PHILOSOPHY

Continuous pursuit of excellence in anything we do.

PUBLIC COURSE RECORDS

1. Offshore Safety Orientation

Date Training	Venue	Expiry Date

2. Sea Survival

Date Training	Venue	Expiry Date
24. 4. 2019	MSTS	25. 4. 2023

3. Basic Fire Fighting

Date Training	Venue	Expiry Date
24-26. 4. 2019	MSTS	25. 4. 2023

4. H.U.E.T

Date Training	Venue	Expiry Date
24-26.4.2019	MSTS	25.4.2023

5. Permit to Work

Date Training	Venue	Expiry Date
15.4.2019	Dimension bid Miri office	

6. IWCF

Date Training	Venue	Expiry Date

7. Public Courses

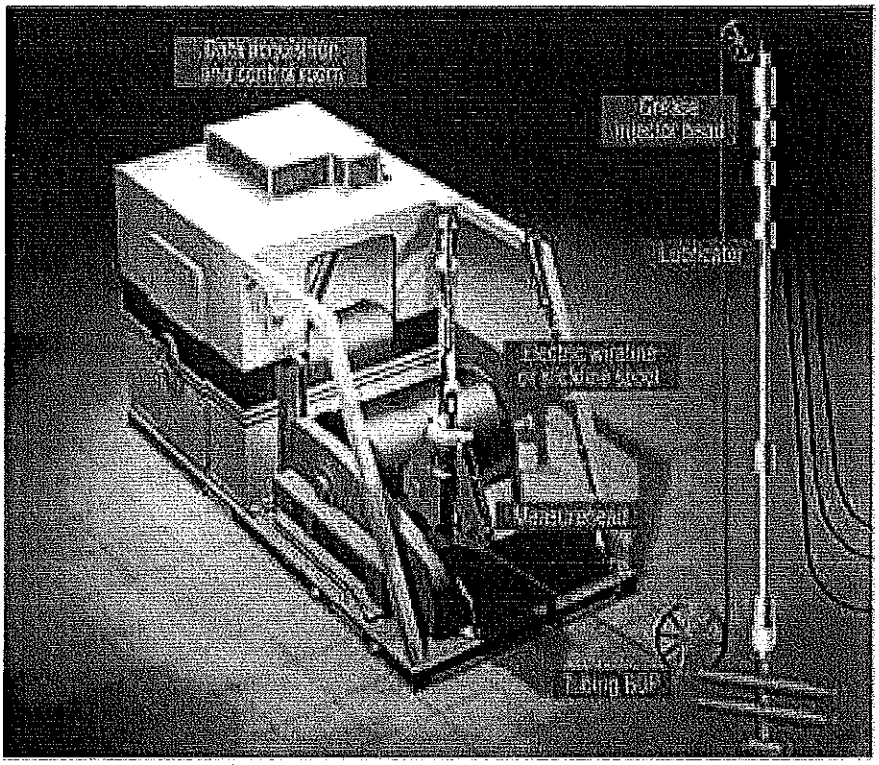
Date Training	Training Topic	Venue
16.4.2019	Working At Height	STS
22-23.4.2019	Rigging and Slingging	BSTS
18.4.2019	H2S Basic Training	SMTC

8. In-house Training

Training Date	Training Category	Training Subject / Title

Training Category: HSE / Technical Presentation / PCE / Surface Equipment / Tools

Module 1: Basic of Wireline - Equipment and Operation



Module 1: Basic of Wireline - Equipment and Operation

	DESCRIPTION	THEORY & ASSIGNMENT		
		DATE	ASSESSED & APPROVED BY	VERIFIED & APPROVED BY
A	**Basic Safety**			
1	PPE	8/4/2019		
2	Responsibilities	8/4/2019		
3	Policies	8/4/2019		
4	Hazard ID & Incident Report	8/4/2019		
5	Operational Safety	8/4/2019		
B	**Surface Equipment Familiarization**			
1	Stuffing box	7/5/2019		
2	Lubricator	7/5/2019		
3	Blow Out Preventer (BOP)	8/5/2019		
4	X-Mass Tree	8/5/2019		
5	Wireline Reel Skid Unit (Single Drum & Double Drum)	9/5/2019		
6	Odometer	18/7/2019		
7	Weight Indicator (200 lbs and 4000 lbs)	18/7/2019		
8	Spooling Device	25/6/2019		
9	Control Panel	10/5/2019		
10	Huskel pump	22-23/7/2016		
11	Power Pack (Electrical & Diesel)	9/5/2019		
12	Air Compressor			
13	Drum	25/6/2019		
C	**Downhole Equipment Familiarization**			
1	Basic Toolstring	13/5/2019		
2	Pulling / Running Tools	14/5/2019		
3	Wireline Wire	23/5/2019		
4	Inspection / Maintenance of Tools ✓	17/6/2019		
D	**Rig-up Wireline Surface Equipment**			
1	Wireline Mast	25-26/7/2019		
2	Lubricator Assembly ✓	4/7/2019		
3	Operating the BOP ✓	4/7/2019		
4	Make Rope socket and Toolstring Configuration ✓	9/7/2019		
5	Toolstring Configuration ✓	14/5/2019		
6	Operate the Control Panel and Huskel Pump	24/6/2019		
7	Service of basic wireline tools ✓	15/5/2019		

Comment: Fast learner and understanding on the above task theory and practical.

A. Wireline Operation Basic Safety Protection

1. Personal Protective Equipment

1.1 What is definition of Person Protective Equipment
PPE is protective clothing, helmets, goggles, or other garments or equipment designed to protect the wear's body from injury or infection.

1.2 List out all compulsory PPE required to be worn while perform job offshore
- Safety Helmet
- Coverall
- Safety boot
- Glove
- Safety glasses
- Ear Plug
- mask or respirator

1.3 List the area where the PPE should be worn while working
- Workshop
- platform area
- Hot work area
- Red zone area
- Rig area

1.4 List the PPE should be worn while doing maintenance at tools and equipment
- Safety helmet
- Hand glove
- Coverall
- Safety boot
- mask or respirator
- Safety glasses
- Ear plug

1.5 PPE should you wear while working in mercury and H_2S are
- Respirator protection
- Eyes protection
- Fire resistand and clothing
- Self-contained breathing apparatus (SCBA)

Lennon Chang

2. Responsibility

2.1 Employee Responsibilities towards Health, Safety and Environmental (HSE)
- prevent and eliminate injury and illness to employees and assist ~~companies~~ (company) to comply with safety laws. Inspect workplaces and minimize or eliminate hazards from processes, such as incorrect working methods and material such potentially toxic chemicals

2.2 What are the safety precautions to be taken during tool maintenance at warehouse?
- clearly label designated hazardous zones
- ~~Provide training and refresher courses~~
- ~~Increase awareness in warehouse~~
- Always use safe lifting techniques
- Eliminate any potential safety hazards.

2.3 When should we do housekeeping?
- After done working job to make sure ~~Please~~ working area are clean and safe from hazard, slip and trip.

2.4 Why housekeeping is important?
TO keeping work areas neat and orderly, maintaining halls and floors free of slip and trip hazards and removing of waste materials and other fire hazard from work areas.

2.5 How should you react while seeing somebody committing into unsafe act/behavior?

STOP WORK!

Lennon Chung

3. Policies

3.1 List down all DB policies in regards to HSE

- Driving policy
- Smoking and vaping policy
- Personal protective equipment (PPE) policy
- Harassment in the workplace policy
- Stop work policy
- Information technology policy
- Drug and Alcohol policy
- Health, safety, security and environment policy

3.2 What is HSE Policies

The Health, Safety and Environmental (HSE) Policy enunciates the philosophy and commitment of the company toward environmental protection and management of health and safety of employees, contract workmen and visitors. Environmental protection. We shall ensure sustainable resource usage.

3.3 What is the purpose of 'STOP WORK' policy?

Stop work policy is a program designed to provide employees and contract workers with the responsibility and obligation to 'STOP WORK' when a perceived unsafe condition or behavior may result in an unwanted event.

Lennon Chung

4 Hazard ID and Incident Reporting

4.1 How can we report hazard or unsafe act?
Please do not wait for someone else to report a hazard. Let someone know right away so that it can be addressed before someone is injured. If you believe that an unsafe working condition exists in the workplace you have the right and are encouraged to make a report of the condition.

4.2 If there is an incident happened at workplace what should we do?
Record any injury in the accident book if need be - make sure your employer has reported it to the HSSE (Safety officer) - (1) Have a plan in place and share it. (2) Examine the injury (3) Have all types of workplace incident report forms ready to fill. (4) Visit the doctor - don't delay ~~necessary~~ unnecessarily (5) Show you care (6) report while the detail are fresh (7) check in with your employer

4.3 What is the incident reporting process?
Incident reporting and investigation procedure. An incident is an unplanned occurrence that results or could result in injury to people or damage to property - An incident may also be considered an accident or near miss.

4.4 What is the purpose of Hazard Hunt? And how does that help to be safe?
By reducing the risks that you can identify using the hazard hunting programme you make your workplace safer. This will help you prevent incident. Hazard Hunting is suitable for everyone who works at an onshore or offshore location or in an office.

4.5 Please explain what is Near Miss
is an unplanned event that has the potential to cause, but does not actually result in human injury, environmental or equipment damage, or an interruption to normal operation

4.6 In case of emergency,

a) Firstly what should you do?
STOP WORK!

b) Where is DB assembly point (Base)?
Outside Dimension Bid Labuan warehouse

Lennon Chung

Ayen

4.7 Where can you find the emergency contact Number?
- ~~Smoking Area~~) and Meeting room / HSSE Bulletin board

5. Operational Safety

5.1 How to prevent an accident before executing certain job or activities
- Keep work spaces clean
- Post proper Signage
- Stay up to date on vehicle maintenance
- Report dangers and accidents
- Provide proper training
- provide proper equipment
- Avoids shortcuts.

5.2 What is the purpose of Safety Morning Meeting
Safety meeting are a perfect opportunity for you to communicate any safety ideas or concerns that you may have. participate in your safety meetings.

5.3 What is the purpose of briefing and Debriefing
Briefing should set the style and tone for an operation. Briefing provides the information needed to direct deployed resources. This information is also used for debriefing personnel in order to obtain futher relevant, available information

5.4 What is Permit To Work (PTW)
refer to management systems used to ensure that work is done Safely and efficiently. There are used in hazardous industries and involve procedures to request, review authorise, document and most importantly, de-conflict tasks to be carried out by front line workers.

5.5 Explain what do you understand from Job Safety Analysis and how does this help you to be safe?
In a JSA, each basic step of the job is to identify hazards and to recommend the safety way to do the job. JSA are not suitable for job define too broadly. for example " over hauling, an engine" or too narrowly. for example 'positioning car jack'.

5.6 What are the safety precautions to be taken during tool maintenance at warehouse?
- Promote Awareness
- provide training and refresher courses
- Always use safe lifting techniques
- Ensure safety equipment is used all times
- Eliminate any potential hazards

Lennon Chung

5.7 What are the safety precautions to be taken during topping up the fuel into Power Pack Tank?
make sure using mask, glove, safety glasses / Barricade if required / Pre Job briefing, explain hazard

5.8 What is work permit & why do we need them?
A work permit is the permission to take a job or an official document that shows that a person is allowed to work.

5.9 When do we apply the work permit
Before start working or operation job

5.10 What are the safety precautions to be taken during test lubricator and BOP?
- Make sure all connection is fully tighten
- Make sure hose in good condition and install whip check

5.11 What are the safety precautions to be taken during test Control Panel?
- Ensure all tubing has no leaking

5.12 Why JSA, Risk Assessment and Job Plan need to be discussed among the team member? How does that work?
- To make sure the job doing step by step and follow the procedure of job by work with safety.

5.13 While working, you found that there is something unsafe. What should you do?
- Stop work

Lennon Chung

5.14 Before performing a hot work, what must you do/ have to ensure the work is safe

* Apply permit to work, discuss all activity what should do and stop of work.
* Make sure use barrier when job is running

Comment: Employee can explained all elements in good order. Need to catch up a bit with internal policies and safety procedures. Able to explained Hazard Id and operation safety. Sayadevan
12/7/19.

Others

1. Please attach the supporting documents that you participated in Dimension Bid's Safety program.

   a) Job Safety Analysis for each activity that you involve during probation period

      - Chipping
      - Painting
      - Lifting
      - Spooling
      - Pressure Test

   b) Hazard Hunt

   c) Safety Talk

Lennon Chung

DIMENSION BID JOB HAZARD ANALYSIS WORKSHEET (JHA)	Location: DB WORKSHOP	WORKSITE AREA	Date:

Section A: (Tasks information)

Team Composition: _____

TASK: Painting & Chipping On wireline mast 06

OIDC associated with above task: N/A * Delete whichever not required	If Yes, OIDC No: N/A	Additional OIDC/Precautions attached: N/A

Section B: JHA Detail Description

Step No.	Descriptions of task step	Hazard Prompt 10 +1	Task Hazards	Threats	Top Event	Risk (L/M/H)	Control Measures
1.0	Arrange maanicooler to work area using forklift	Gravity	Object at height	Defective Lifting Gears	Dropped Object	M	Certified Gears/Inspected / Authorized fork lift driver
		Motion	Moving Object	Defective Slings	Swinging Load, Dropped object,	L	Ensure Sling in Good Condition, Secured loosen item
		Radiation	Sunlight	Over Expose to Hot Sun, Fainted due to dehydration	Heat Stroke	L	Drink Lots of Water/Proper Break Time
		Weather	Poor Visibility	Strong Wind, thunder storm, heavy raining	Flying & Falling Objects,	L	Secure Loose Objects/No Rigging up or Down during Strong Wind (25 knots), Stop work,
2.0	Painting and chipping On manicooler	Motion/body machanic	Handling equipment	Finger Pinch, Slip and fall,	Hand/Finger Injury, Body Injury, Head Injury,	M	Use proper handling techniques PPE safety helmet, safety boots, hand glove and safety glass
		Chemical	Fume	Skin Injury And Fume From Painting.	Fume/Hand Injury.	L	Use Proper PPE And Handling Techniques.
3.0	Normalization/Housekeeping	Body Mechanic	Slippery/Trip & Fall	oil and grease on deck	Injury	L	PPE / Supervision. Carry out housekeeping
		Invisible	Time Pressure	Human error, Rushing	Stress	L	Supervision, planning, time management
		Body Mechanic	Leaning against on handrail	Human error	Injury	M	Supervision

Recovery Measures:
*In the event of Top Event occurred, apply STOP WORK POLICY and carry out actions as per the Emergency Response Procedures
*Any additional Recovery Measures to be discussed by the signatories

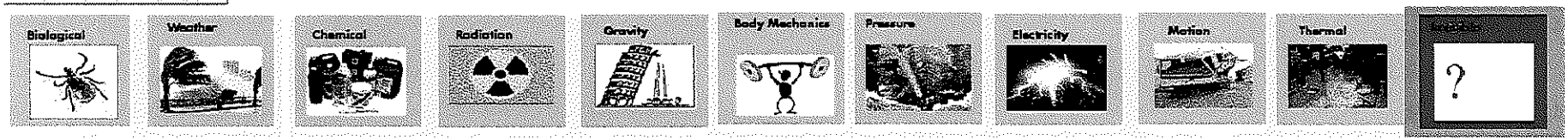
Section C: Signatories

JHA Applicant	Discussed & Agreed by	Reviewed and Verified by
Name: Lennon Chung	Name:	Name: FADZLI
Sign:	Sign: Saiful	Sign:
Date/Time: 7/5/19	Date/Time:	Date/Time: 7/5/19 - 10AM

Section D:
Identify and discuss the Life Saving Rule
(1) Tick the Life Saving Rule(s) relevant with the task
(2) Discuss the rules ?

[1] Work with a valid work permit where required	[4] Obtain authorization before entering a confined space	[7] Do not walk under a suspended load	[10] While driving, do not use your phone & do not exceed speed limits
[2] Conduct gas tests where required	[5] Obtain authorization before overriding or disabling safety critical equipment	[8] Do not smoke outside designated areas	[11] Wear your seat belt
[3] Verify isolation before work begins and use the specified life protected equipment	[6] Protect yourself against fall when working at height	[9] No alcohol or drugs while working or driving	[12] Follow a prescribed journey Management Plan

Hazard Prompt...10+1



The Risk Assessment Matrix (RAM) shown below is used to determine and document the HSE risks for various activities/tasks and to identify the risk response requirements to reduce these risks to ALARP

LEVEL	CONSEQUENCES DESCRIPTOR			
	PEOPLE	ASSET	ENVIRONMENT	REPUTATION
0	No injury or health effect	No damage	No effect	No impact
1	Not affecting work performance & daily life activities e.g. FAC; MTC; exposure to health hazards - noticeable discomfort, minor irritation or transient effects reversible after exposure stops.	cost less than 10,000 USD E.g. No disruption to operation.	Slight environmental damage - contained within the premises. E.g. small spill in process area or tank farm that readily evaporates.	Local publich awareness but no discernible concern; No media coverage.
2	Affecting work performance and Daily Life Activities up to 5 days. Or reversible health effects. E.g. RWC or LWC resulting in up to 5 calendar days away from work; illnesses such as skin irritation or food poisoning.	Cost between 10,000 and 100,000 USD, E.g. Brief disruption to operation	Minor environmental damage but no lasting effect. E.g. Small spill off-site that seeps into the ground; on-site groundwater contamination; complaints from up to 10 individuals; single exceedance of statutory or other prescribed limit.	Local public concern; Local media coverage.
3	Affecting work performance or Daily Life Activities in the longer term i.e. more than 5 days. Or irreversible health effects. E.g. Long term disabilities (previously called Permanent Partial Disabilities); illness such as sensitizations; noise induced hearing loss; chronic back injury; RSI or stress.	Cost between 100,000 and 1 million USD, E.g. Partial shutdown.	Limited environmental damage that will persist or require cleaning up. E.g. spill from a pipeline into soil /sand that requires removal & disposal of a large qty of soil/sand; observed off-site effects/damage E.g. fish kill or damaged vegetation; off-site groundwater contamination; complaints from community organizations (or > 10 complaints from individuals); frequent exceedance of statutory or other prescribed limit, with potential long term effect.	Significant effect in region or country; Regional public concern; Local stakeholders e.g. community, NGO, industry and government, are aware; Extensive attention in local media. Some regional or national media coverage.
4	Resulting from injury or occupational illness. E.g. illnessec such as corrosive burns, asbestosis, silicosis, cancer and genous work related depression; Car accident resulting in 1, 2 or 3 fatalities.	Cost between 1 and 10 million USD E.g. Up to two weeks shutdown.	Severe environmental damage that will require extensive measures to restore beneficial uses of the environment. E.g. oil spill at jetty during tanker (off) loading that ends up on local beaches, requiring clean-up operations; off-site ground water contamination over an extensive area; many complaints from community organizations or local authorities; extended exceedance of statutory to other prescribed limits, with potential long term effects.	Likely to escalate and affect Group reputation; National public concern; Impact on local & national stakeholders relations. National government and NGO involvement with potential for international NGO action; Extensive attention in national media. Some international coverage; Potential for regulatory action leading to restricted operations or impact on operating licenses
5	Resulting from injury or occupational illness. E.g. multiple asbestosis cases traced to a single exposure situation; Cancer to a large exposed population; major fire explosion resulting in more than 3 fatalities.	Cost in excess of 10 million USD. E.g. Substantial or total loss of operation.	Persistent severe environmental damage that will lead to loss of commercial, recreational use or loss of natural resources over wide area. E.g. crude oil spillage resulting in pollution of a large part of river estuary and extensive clean-up and remediation measures.	Severe impact on Group reputation; International public concern; High level of concern amongst governments and action by International NGOs; International media attention; Significant potential for effect on national / international standards with impact to access to new areas, grants of licences and / or tax legislation.

DIMENSION BID
WIRELINE INTERVENTION | PERFORATION SERVICES

JOB HAZARD ANALYSIS

LOCATION	DB open yard	DATE	
TASK	Mengangkat barang/tools/material menggunakan forklift	JHA REFERENCE NO.	
WORK SITE		ASSESSMENT TEAM	

Job Step	Potential Hazard	L	S	R	Control Measures	L	S	R	Result
1. Perancangan tugas	1.1 Salah faham	1	1	1	1.1.1 Berbincang dengan foreman dan orang yang bertanggungjawab kawasan kerja.	1	1	1	Diterima
						1	1	1	Diterima
					1.1.2 Pastikan setiap pekerja tahu tugas masing-masing				
2. Forklift memasuki tapak kerja	2.1 Keadaan forklift	1	1	1	2.1.1 Periksa keadaan forklift sebelum memulakan kerja.	1	1	1	Diterima
					2.1.2 Perhatikan jika ada kebocoran pada hidraulik.	1	1	1	Diterima
						1	1	1	Diterima
	2.2 Operator forklift yang tidak kompeten.	1	2	2	2.2.1 Periksa sijil latihan operator.				
						1	1	1	Diterima
	2.3 Forklift melanggar peralatan disebabkan kawasan sempit.	2	1	2	2.3.1 Pastikan Rigger / signalman mengawal kren masuk dan keluar.				
						1	1	1	Diterima
3. Pemeriksaan kawasan kerja.	3.1 Tempat Kerja Terhad	2	1	2	3.1.1 Bincang cara kerja yang selamat untuk kerja ruangan terhad.	1	1	1	Diterima
					3.1.2 Pemeriksaan pada tempat yang akan dimasuki.	1	1	1	Diterima

	3.2 Laluan Terhad	2	2	4	3.2.1 Melindungi permukaan daripada sentuhan yang tidak sengaja.	1	1	1	Diterima
					3.2.2 Menyediakan pemerhati.				
					3.2.3 Sediakan pelan penyelamat.	1	1	1	Diterima
	3.2 Halangan	2	1	2	3.2.1 Pastikan laluan keluar masuk tiada halangan.	1	1	1	Diterima
					3.2.2 Alihkan objek yang menghalang aktiviti kerja.	1	1	1	Diterima
4. Forklift mengangkat dan mengalihkan barang	4.1 Forklift terbalik disebabkan tanah tidak rata.atau lebih bebanan	1	3	3	4.1.1 Pastikan memeriksa kawasan sekeliling sebelum operasi Forklift dilakukan.	1	1	1	Diterima
	4.2 Forklift melanggar peralatan ketika mengangkat barang	1	2	2	4.2.1 Pastikan signalman mengawal forklift	1	1	1	Diterima
	4.3 Barang terjatuh	1	2	2	4.3.1 Gunakan peralatan pengangkat apabila mengangkat melalui peralatan yang sedang beroperasi.	1	1	1	Diterima
					4.3.2 Mengikat peralatan kerja. Rigger dikehendaki memeriksa mata forklift dilaras bersesuaian dengan barang yang hendak diangkat.	1	1	1	Diterima
					4.3.3 Blinking light dinyalakan sepanjang masa operasi atau Reverse alarm semasa mengundur .Pastikan tiada orang bekerja diatas fork.	1	1	1	Diterima
					4.3.4 Pastikan barang diangkat menggunakan Web sling diikat dengan sempurna..Beban diangkat mengikut kapasiti forklift.	1	1	1	Diterima
						1	1	1	Diterima

	4.4 Cuaca	1	2	2	4.4.1 Lakukan kawalan pada permukaan licin. 4.4.2 Angin kuat-pelindung mata. 4.4.3 Panas-kekurangan air,berehat 4.4.4 Kilat dan petir-pilihan peralatan,menunda pekerjaan.	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	
5. Housekeeping	5.1 Sisa pembersihan dan pelupusan Kayu, kotak, kertas, plastik	1	1	1	5.1.1 Terapkan amalan-amalan pengurusan persekitaran. 5.1.2 Patuhi prosedur pengurusan sisa setempat. 5.1.3 Bersihkan peralatan dan mengurus bahan-bahan di kawasan yang disediakan. 5.1.4 Menoptimumkan tugasan untuk mengurangkan pengeluaran sisa	1 1 1 1	1 1 1 1	1 1 1 1	Diterima Diterima Diterima Diterima
	5.2 Kabel/wire sling/web sling berselerak dan tidak tersusun.	1	1	1	5.2.1 Gulung dan simpan kabel/sling/websling setelah digunakan.	1	1	1	Diterima

1	**Negligible**	First Aid Only for injury & illness	1	2	3	4	5		1-4	Low
2	**Minor**	Medical Treatment, Outpatient for injury	2	4	6	8	10		5-12	Medium
3	**Major**	Hospitalized, disabling injury but recoverable	3	6	9	12	15		15-25	High
4	**Critical**	Permanent Disability / Irrecoverable illness	4	8	12	16	20			
5	**Catastrophe**	Single or more casualty	5	10	15	20	25			
			1	**2**	**3**	**4**	**5**			
			Very Unlikely	**Unlikely**	**Likely**	**Most Likely**	**Certain**			

Date :		Date:		Date:		Date :	
Name	Sign	Name	Sign	Name	Sign	Name	Sign

Date :		Date :		Date :	
Name	Sign	Name	Sign	Name	Sign

WORK ACTIVITY RESPONSIBILITY	JHA SUBMITTED BY	JHA ACCEPTED BY
Work Leader	**Receiving Authority (Supervisor)**	**Approving Authority (SHO)**
Name:- Heneiken	**Name:-**	**Name:-** FADZLAN
Signature:-	**Signature:-**	**Signature:-**
Date:-	**Date:-**	**Date:-** 7/5/19

DIMENSION BID
WELL INTERVENTION | PERFORATION SERVICES

JOB HAZARD ANALYSIS

LOCATION	DB Workshop	DATE	
TASK	Spooling wire	JHA REFERENCE NO.	
WORK SITE	SE Department	ASSESSMENT TEAM	

Job Step	Potential Hazard	L	S	R	Control Measures	L	S	R	Result
• Prepare pre job meeting	• To avoid clash of work at workshop area • Other party not aware where are you are working	2	1	2	• Inform all team nearest workers on working area and description of works • Inform the hazards involved at place of work	2	1	2	Acceptable

• Preparation of equipment	• Hand and finger injury during
	  • Remove the wire drum from rack
	  • Tie up with belt to lift drum
	  • Failure of lifting equipment (sling / forklift hydraulic leak)
	• Struck by load during transfer wire drum
		2	2	4	• Do not place hand at wrong position.
					• Use tag line/push pull stick to guide equipment instead of hand
					• Physical inspection of lifting equipment
					• Valid inspection records
					• Wear safety shoes, gloves & safety glass
					• Stay away from load
						2	1	2	Acceptable

• Install the wire drum	• Hand crush by falling wire drum due to failure lifting equipment. • Finger pinched by wire drum whilst repositioning process.	2	2	4	• Beware of hand position • Knowledge for handling and installing the wire drum	2	1	2	Acceptable
• High pressure hose	• Hydraulic oil splash to worker due to hose burse	2	2	4	• Physical inspection of hose and joint	2	1	2	Acceptable
	• Swing hose cause personnel injury				• do double confirm for every joint • barricade the area • Use proper personnel protective equipment.				
• Spool in and spool out	• Wire broken while spooling process and stabbed operator • Entanglement	2	1	2	• Physical inspection of wire condition before spooling activity • Use proper machine guarding • Barricade the area and put warning sign for awareness.	2	1	2	Acceptable

S- SEVERITY			
Lost Time Injury	Major Damage	Major Pollution	High (3)
First Aid Injury	Minor Damage	Minor Pollution	Medium(2)
No injury	No Damage	No pollution	Low (1)

R- RATING		
3	6	9
2	4	6
1	2	3
Low (1)	Medium (2)	High (3)
Remote	Possible	Probable
L- LIKELIHOOD		

RESULT	
6-9	Unacceptable
3-4	Tolerate
1-2	Acceptable

Work Activity Participants			
Name	Position	Perform Job Before?	Signature

This JHA created by		
Name	Discipline	Position

WORK ACTIVITY RESPONSIBILITY	JHA SUBMITTED BY	JHA ACCEPTED BY
Work Leader	**Receiving Authority**	**Approving Authority**
Name:- Henriken	**Name:-**	**Name:-**
Signature:-	**Signature:-**	**Signature:-**
Date:- 7/5/19	**Date:-**	**Date:-** 7/5/19
Time:- 10 AM	**Time:-**	**Time:-** 10 AM

DIMENSION BID

WIRELINE INTERVENTION | PERFORATION SERVICES

JOB HAZARD ANALYSIS

LOCATION	Open yard, KSB	DATE	
TASK	Pressure and function test reel skid unit	JHA REFERENCE NO.	
WORK SITE		ASSESSMENT TEAM	

Job Step	Potential Hazard	L	S	R	Control Measures	L	S	R	Result
• Pre job meeting	• Other party not aware where are you are working	2	1	2	• Applicant ,authorizing ,approval signatories be familiar with the job • Inform to all crew on location and description of works • Inform the hazards involved at place of work	2	1	2	Acceptable
• Lifting wireline equipment	• Hand and foot crush during lifting the equipment due to sling break. • Body caught between load • Finger pinched while repositioning the equipment • Equipment dropped due to lifting equipment failure.	2	3	6	• Physical inspection of lifting equipment. • Valid inspection records • Stay away from the weight • Don't stand between load • Assign experience signal man • Beware of hand and foot position.	2	1	2	Acceptable
• Barricade work area	• Unauthorized personnel and moving vehicles (forklift) may enter work area and will hit personnel.	2	3	6	• Barricaded work area with barrier tape. So that other personnel and forklift driver are aware.	2	1	2	Acceptable
• Pressure test	• Oil spilled & fitting burst • Tripping hazard • Pressure trapped • Slipped off	2	2	4	• Make sure safety pin properly installed & use lock pin • Barricade the area & do house keeping • Make sure "0" pressure prior to disconnect all joints • Wear safety boot and keep house keeping.	2	1	2	Acceptable
• Housekeeping	• Improper placement of tools and equipment. • Improper management of domestic waste (Paper,plastic, etc).	1 1	1 2	1 2	• Secure all equipment and return to original location. • Ensure to dispose all domestic waste into rubbish bin.	1	1	1	Acceptable

	• Improper management of schedule waste SW 305 spent lubricant oil.	1	1	1	• Ensure to dispose the schedule waste into the oil drum and put labelling.				

1	Negligible	First Aid Only for injury & illness	1	2	3	4	5		1-4	Low
2	Minor	Medical Treatment, Outpatient for injury	2	4	6	8	10		5-12	Medium
3	Major	Hospitalized, disabling injury but recoverable	3	6	9	12	15		15-25	High
4	Critical	Permanent Disability / Irrecoverable illness	4	8	12	16	20			
5	Catastrophe	Single or more casualty	5	10	15	20	25			
			1	2	3	4	5			
			Very Unlikely	Unlikely	Likely	Most Likely	Certain			

Date :		Date:		Date:		Date :	
Name	Sign	Name	Sign	Name	Sign	Name	Sign

Date :		Date :		Date :	
Name	Sign	Name	Sign	Name	Sign

WORK ACTIVITY RESPONSIBILITY	JHA SUBMITTED BY	JHA ACCEPTED BY
Work Leader	**Receiving Authority (Supervisor)**	**Approving Authority (SHO)**
Name:-	**Name:-**	**Name:-**
Signature:-	**Signature:-**	**Signature:-**
Date:- 7/5/19	**Date:-**	**Date:-** 7/8/19

Monthly SAFETY TALK SHARING (MORNING MEETING)

Month of : June 2019 - General Health, Safety, Security & Environment Topics

No	Name	Date	Safety Talk Topic
1	Elyshandra & Mat Rock	12-Jun-19	Keselamatan & Kesihatan di tempat kerja
2	Devid & Christopher	13-Jun-19	Ear Protection
3	Lennon & Darrell	14-Jun-19	4 Tips penjagaan kesihatan di tempat kerja
4	Lauridsen & Felix	17-Jun-19	Don't take shortcut
5	Idayu & Nana	18-Jun-19	Back injury & "Wasn't Me"
6	Leon & Henieken	19-Jun-19	Toolbox talk safety
7	Zana & Lala	20-Jun-19	Work safely in your office & Safety during raining day
8	Alleyson & Ayen	21-Jun-19	Mental Health
9	Asom & Exsan	24-Jun-19	Road Safety During Raining
10	Syaiful & Shamsulyni	25-Jun-19	Microsleep
11	Alif & Jofri	26-Jun-19	Tanda-tanda tubuh anda kekurangan air (DEHIDRASI)
12	Elyshandra & Mat Rock	27-Jun-19	Keselamatan Perjalanan Jauh
13	Devid & Christopher	28-Jun-19	Mechanical Lifting

FADZLIN IBRAHIM
HSE Officer
Dimension Bid (M) Sdn Bhd
(East Malaysia Operation)

Monthly SAFETY TALK SHARING (MORNING MEETING)

Month of : May 2019 - Do's & Don'ts in HSSE

No	Name	Date	Safety Talk Topic
1	Idayu & Nana	2-May-19	Do's & Don'ts - Fire Safety At Home
2	Leon & Henieken	3-May-19	Do's & Don'ts - Microwave Safety
3	Zana & Lala	6-May-19	Do's & Don'ts - During Ramadhan
4	Alleyson & Norlizah	7-May-19	Do's & Don'ts - Computer, Email , Surfing Web & Password
5	Asom & Exsan	8-May-19	Do's & Don'ts - Safe Motorcycle Riding
6	Syaiful & Shamsulyni	9-May-19	Do's & Don'ts - Phone Selfie
7	Alif & Jofri	10-May-19	Do's & Don'ts - Dental Health
8	Elyshandra & Mat Rock	13-May-19	Do's & Don'ts - Medicine
9	Devid & Christopher	14-May-19	Do's & Don'ts - Storm & Heavy Rain Safety
10	Lennon & Darrell	15-May-19	Do's & Don'ts - Mobile Security
11	Lauridsen & Hafriz	16-May-19	Do's & Don'ts - Physical Security
12	Idayu & Nana	17-May-19	Do's & Don'ts - Travelling Oversea Safety
13	Leon & Henieken	20-May-19	Do's & Don'ts - Escalator/Elevator Safety
14	Zana & Lala	21-May-19	Do's & Don'ts - Food & Drink Safety
15	Alleyson & Norlizah	23-May-19	Do's & Don'ts - Personal Safety at Night
16	Asom & Exsan	24-May-19	Do's & Don'ts - While using Gas cylinder at Home
17	Idayu & Nana	27-May-19	Do's & Don'ts - Home Alone
18	Syaiful & Shamsulyni	28-May-19	Do's & Don'ts - Saving Nature
19	Alif & Jofri	29-May-19	Do's & Don'ts - Refrigerator

FADZLIN IBRAHIM
HSE Officer
Dimension Bid (M) Sdn Bhd
(East Malaysia Operation)

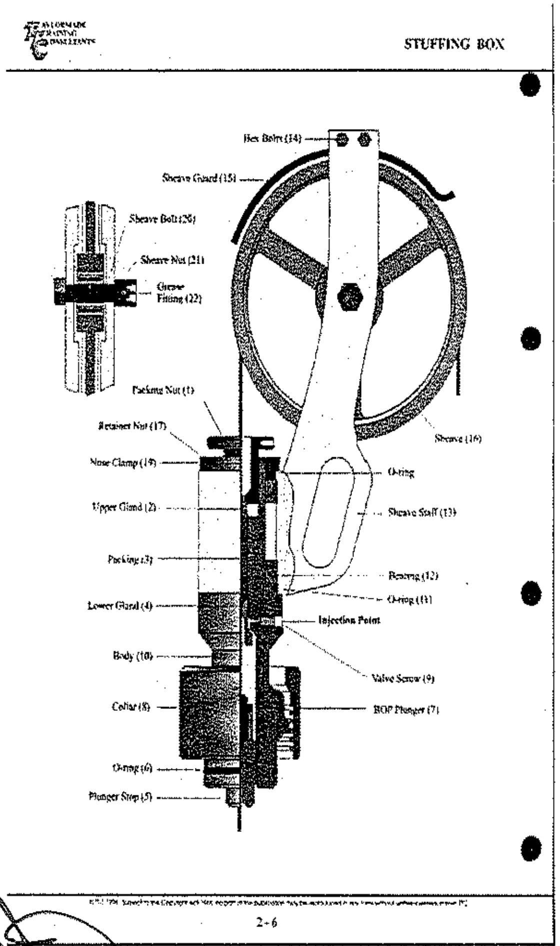
Monthly SAFETY TALK SHARING (MORNING MEETING)

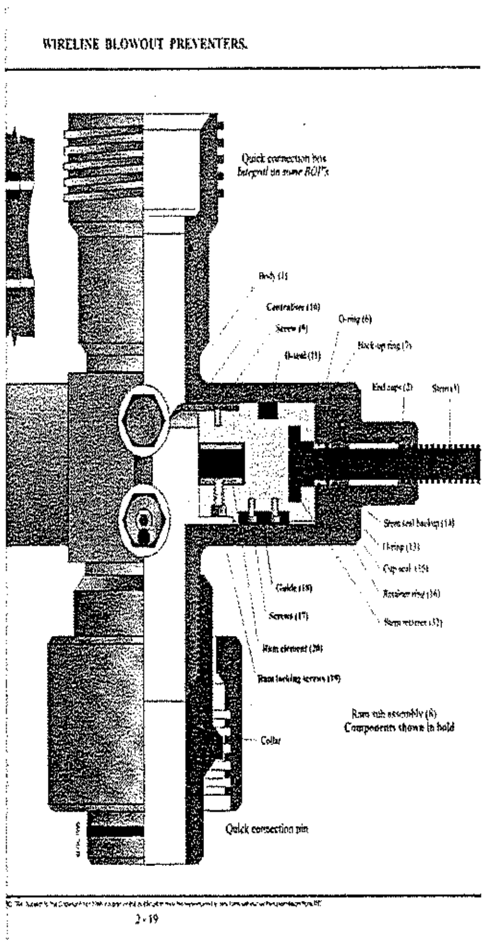
Month of : July 2019 - Health, Safety, Security & Environment Topics

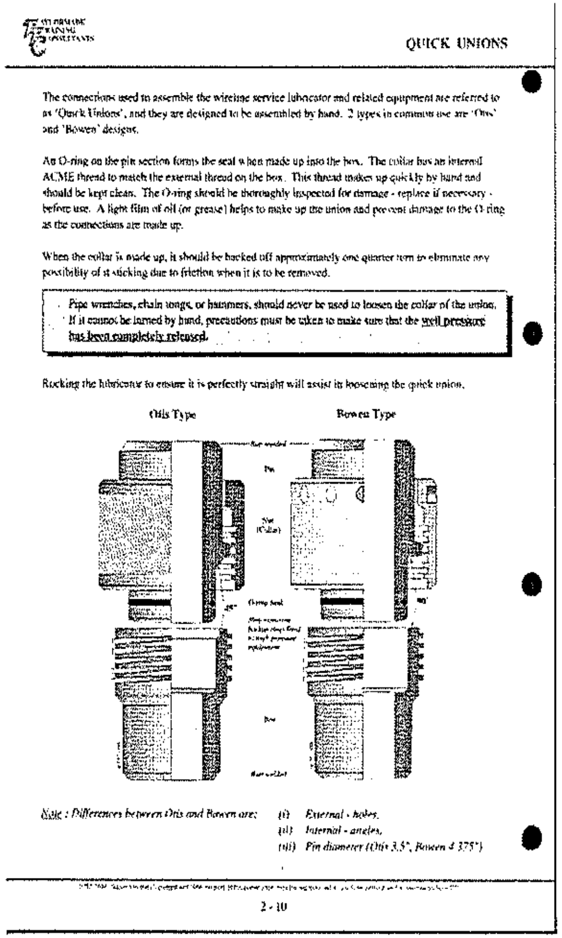
No	Name	Date	Safety Talk Topic
1	Lennon & Darrell	2-Jul-19	Health : Insomnia (Symptoms, Causes, and Treatment)
2	Harry & Felix	3-Jul-19	Safety at Public area
3	Alleyson & Idayu	4-Jul-19	Security at workplace
4	Harvbeen & Edriean	5-Jul-19	Environment - Air Pollution
5	Devid & Christopher	8-Jul-19	Healthy eating in the workplace
6	Rozaiman & Fernkey	9-Jul-19	Safety during working at height
7	Leon & Fifie	10-Jul-19	Security at home
8	Rahine & Zana	11-Jul-19	Environment - Acid rain
9	Lala & Ayen	12-Jul-19	Health : Effects of Fast Food on the Body
10	Asom & Exsan	15-Jul-19	Safety : Sports Safety Tips
11	Syaiful & Shamsulyni	16-Jul-19	Security : How to Prevent Having Your Car Broken Into
12	Alif & Jofri	17-Jul-19	Environment : Oceans
13	Henieken & Mat Rock	18-Jul-19	Health : High blood pressure
14	Lennon & Darrell	19-Jul-19	Safety : Handphone exploded while charging cases
15	Harry & Felix	22-Jul-19	Security : Scammer
16	Harvbeen & Edriean	23-Jul-19	Environment : Water pollution
17	Devid & Christopher	24-Jul-19	Health : Stomach Ulcer Causes, Symptoms, and Diagnosis
18	Rozaiman & Fernkey	25-Jul-19	Safety : How to Stay Safe While Driving at Night
19	Leon & Fifie	26-Jul-19	Security : Protecting your data on social networking
20	Rahine & Zana	29-Jul-19	Environment : Hot Weather Safety Tips
21	Lala & Ayen	31-Jul-19	Health : Cardiac arrest - symptoms, causes and recovery

FADZLIN IBRAHIM
HSE Officer
Dimension Bid (M) Sdn Bhd
(East Malaysia Operation)

What is a PCE and the used of them






QUICK UNIONS

The connections used to assemble the wireline service lubricator and related equipment are referred to as 'Quick Unions', and they are designed to be assembled by hand. 2 types in common use are 'Otis' and 'Bowen' designs.

An O-ring on the pin section forms the seal when made up into the box. The collar has an internal ACME thread to match the external thread on the box. This thread makes up quickly by hand and should be kept clean. The O-ring should be thoroughly inspected for damage - replace if necessary - before use. A light film of oil (or grease) helps to make up the union and prevent damage to the O-ring as the connections are made up.

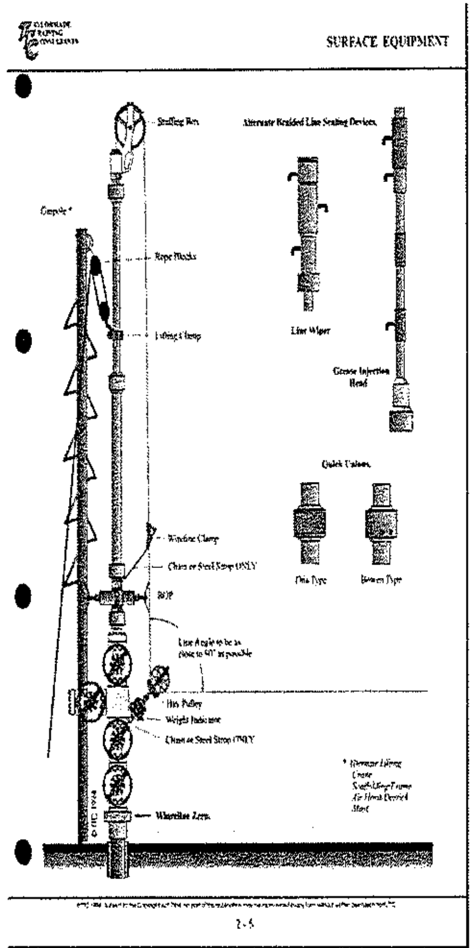
When the collar is made up, it should be backed off approximately one quarter turn to eliminate any possibility of it sticking due to friction when it is to be removed.

> Pipe wrenches, chain tongs, or hammers, should never be used to loosen the collar of the union. If it cannot be turned by hand, precautions must be taken to make sure that the <u>well pressure has been completely released.</u>

Rocking the lubricator to ensure it is perfectly straight will assist in loosening the quick union.

Note : Differences between Otis and Bowen are: (i) *External - holes.* (ii) *Internal - angles.* (iii) *Pin diameter (Otis 3.5", Bowen 4.375")*

2 - 10



Stuffing Box

1. Sealing device to determine by type of well and well pressure/fluid.

- Stuffing Box for Slick line
- Swabbing Head for Braided Line
- Grease Injection Head for Braided line high pressure seal.

- **<u>Purposed</u>**

➢ Design Features to ensure sealing off around wireline at upper of lubricator.

➢ To hold the pressure while in wireline operation

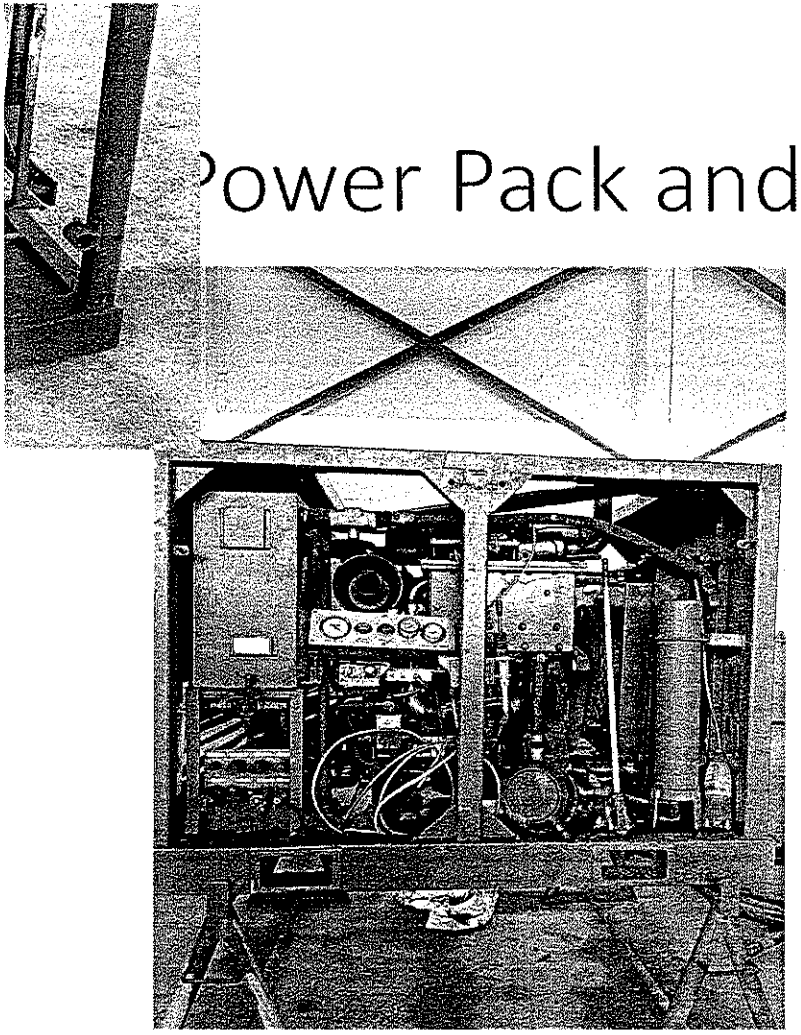
➢ Stuffing box is designed to trap wire which breaks on surface before it drop down.

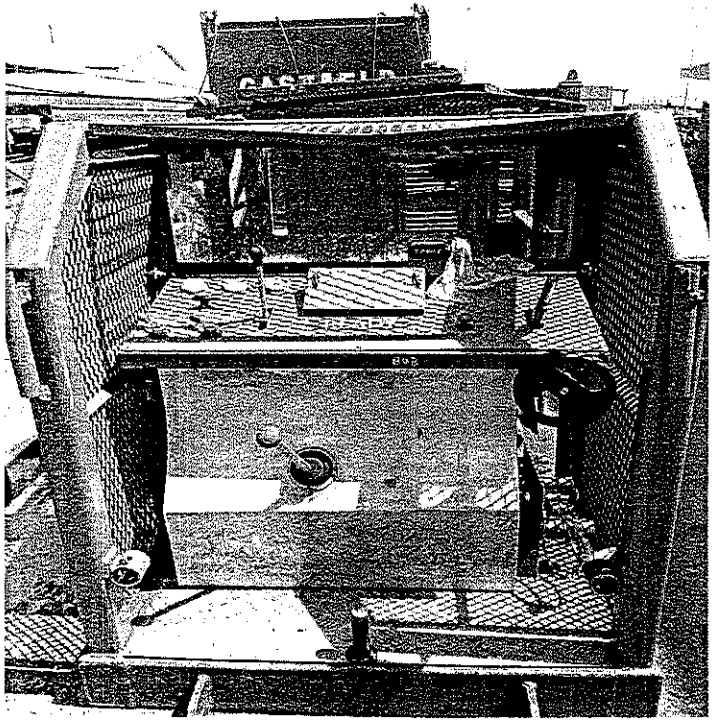
BOP- Blowout Preventer

BOP is installed between and lower Lubricator section.

- Bop Rating 5K equipped with 5-4 PxB ACME Threads connection.
- Bop Rating 10K equipped with 5.75 PxB ACME Threads connection.
- Bop ID bore is 2.99".
- To enable well pressure to isolated without cutting wire by closing the master valve.
- Permit the assembly of the wireline cutter above BOP rams.
- The Rams holding pressure from both top and bottom.

Power Pack and Reel Skid unit.





Power Pack

- Diesel driven.
- Certified with Zone 2.
- Approved to carry out on Drilling Rig and Production Platform
- Maintenance .

- Purpose.

➢To provide and Supply the Hydraulic power to RSU.

Reel Skid Unit (RSU)

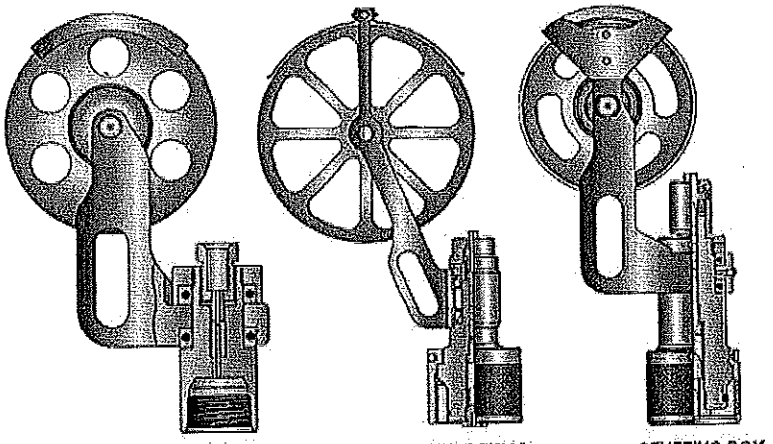
- Certified With Zone 2
- Equiped with Safety device.
- Equiped with Weight indicator and Depth counter
- Wire Drum.

- Purposed

➢To run down / pull out the wireline tool in the hole.

B. SURFACE EQUIPMENT

1. Stuffing Box



What is Stuffing Box
The stuffing box is specifically designed to seal around soled wireline to confine wellbore fluids and gases within the surface pressure equipment. This allows wireline operations to be carried out under pressure.

What is the purpose of stuffing Box
- Designed features to ensure seating off around wireline at upper of lubricator
- To hold the pressure while in wireline operation
- Is designed to trap wire which breaks on surface before it drop down

How to operate Stuffing Box
- Packing nuts
- Pressure hydraulic hand pump

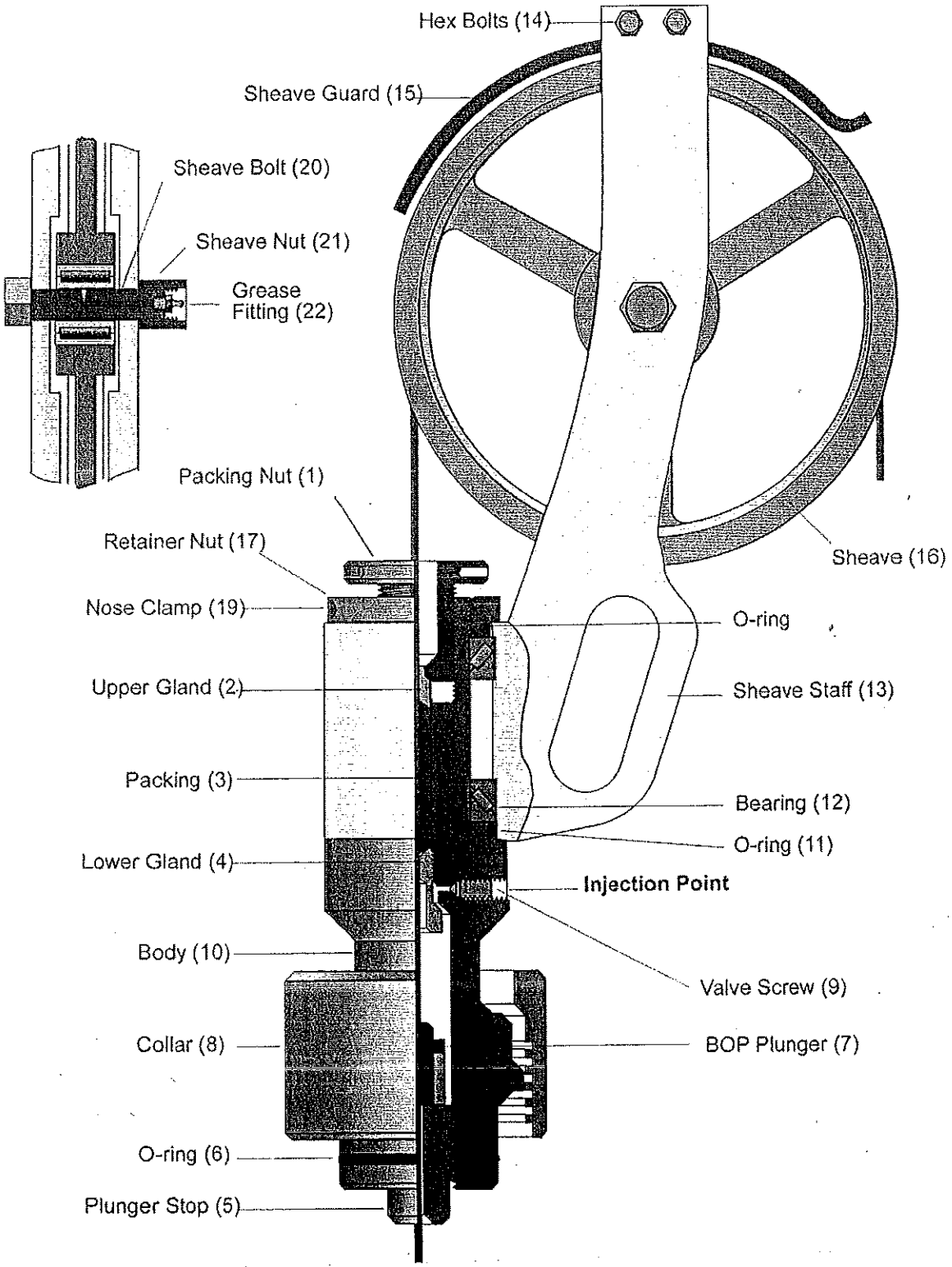
What is maintenance required for Stuffing Box
- packing
- upper gland
- lower gland
- BOP plunger
- piston O-Ring

What is safety precaution required for Stuffing Box
- proper lifting technique
- should be inspect every 6 month and service
- make sure stuffing box in good condition and certified

Lennon Chung
Remarks.

What is potential hazard during handling Stuffing Box
- Pinch point
- Back pain
-

Draw & name each part of stuffing box



2. Lubricator

What is Lubricator
Lubricator is the term used for sections of pressure tested pipe that act to seal in wireline tools during pressurization. It has valves to bleed off pressure so that can disconnect it from well and work on tools

What is the purpose of Lubricator
is to allow the wireline tool string to be raised above the wellhead prior to and after wireline operation, thereby enabling the wellhead valve to be opened and closed, allowing entry and exit from the well bore

How to operate Lubricator
- The lubricator enables wireline toolstring and equipment to be inserted and removed from well under pressure
- check seal faces and O-Ring
- check lubricator pressure rating.

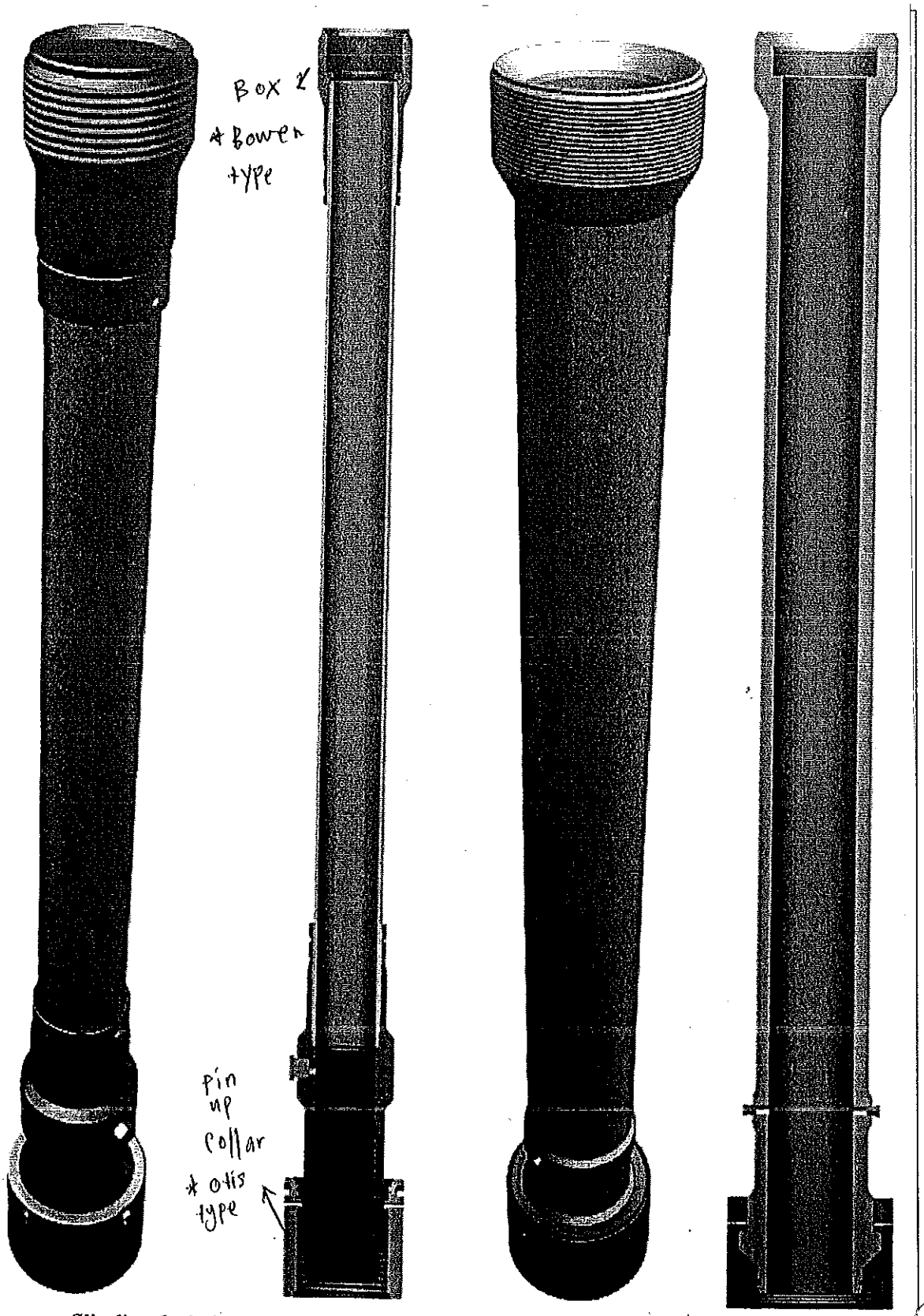
What is maintenance required for Lubricator
- Change lubricator O-Ring
- Thickness lubricator ID
- Pin and box collar CMPT
- Pressure test
- visually inspected at regular intervals

What is safety precaution required for Lubricator
- make sure that O-Ring in good condition when rig up
- make sure that collar thread has no damaged, cracked or loose
- make sure validity before rig up and need to inspect every 6 month.

What is potential hazard during handling Lubricator
- Backpain
- ~~Finger~~ pinch point
- Sling Parted

Lemon Chung

Draw & name each part of Lubricator

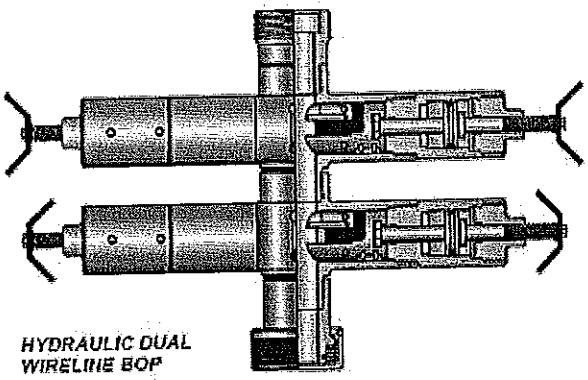


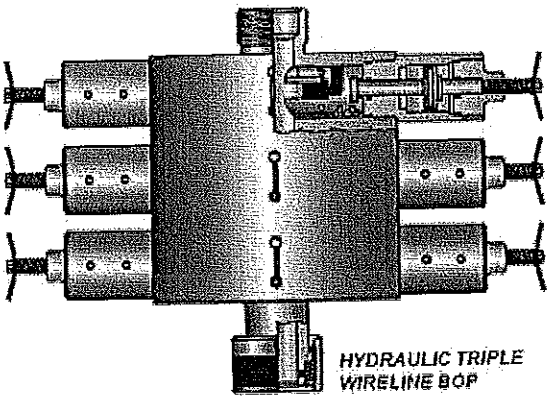
Slimline Lubricators (ported)

Lightweight Lubricators (ported)

The above data is ...

3. Blowout Preventer (BOP)


HYDRAULIC DUAL WIRELINE BOP


HYDRAULIC TRIPLE WIRELINE BOP

What is BOP
A blowout preventer (BOP) is a large, specialized valve or similar mechanical device, used to seal, control and monitor oil and gas wells to prevent blowout, the uncontrolled release of crude oil or natural gas from a well

What is the purpose of BOP
purpose of BOP is safety equipment designed to prevent uncontrolled flow of formation fluids during drilling and completion operations.

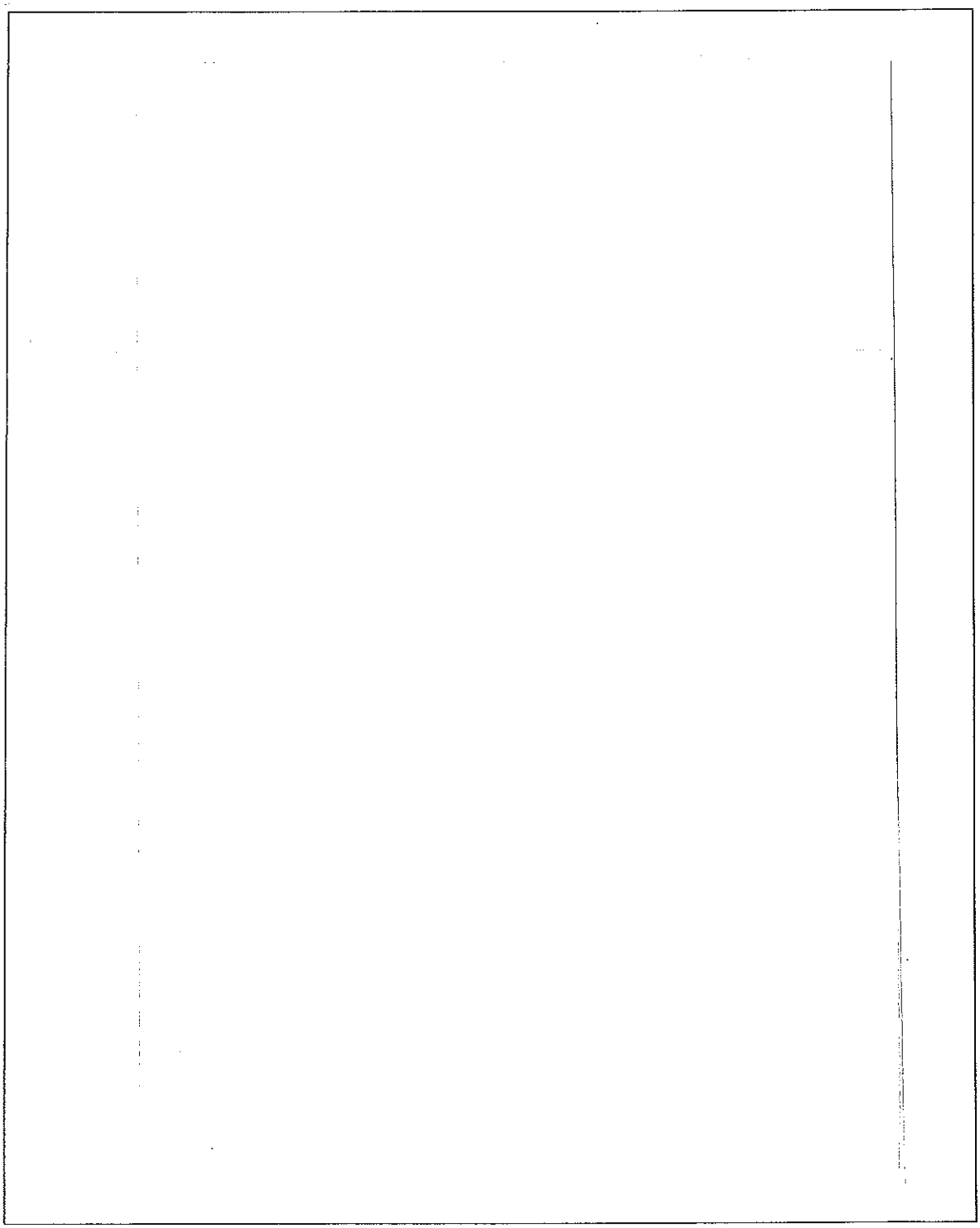
How to operate BOP
- Hydraulic pressure
- Control by Reel skid unit and control Panel

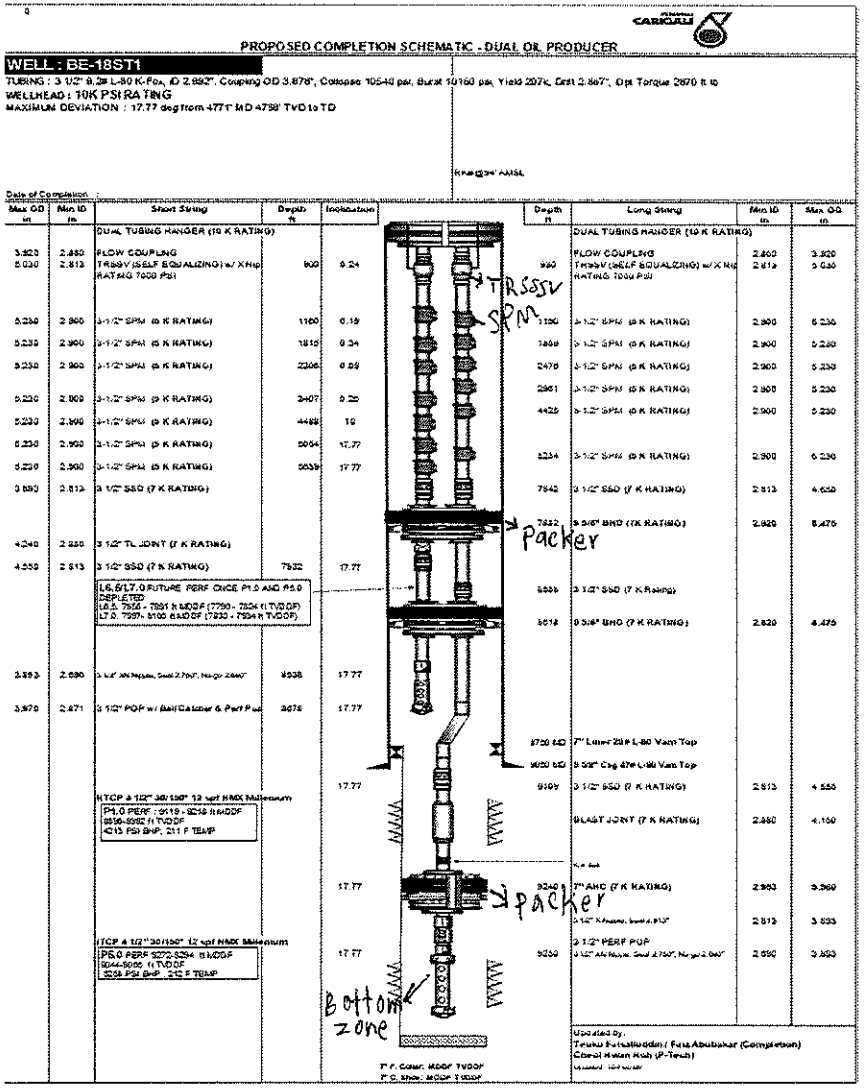
What is maintenance required for BOP
- Change inner and outer seal
- change o-ring
- Change ~~packing~~

What is safety precaution required for BOP
- make sure release pressure before and after start operation
- make sure BOP in good condition before start operation

What is potential hazard during handling BOP
- Pinch point
- Back pain

Draw & name each part of BOP





Gas well 4", 5", 7"

1. Dual tubing hanger. Id 2.992"(Two way check valve to Install) 3" Oil 2.78"
2. Flow coupling TRSSSV (Self equalizing) c/with X-Nipple. ID 2.813". to The X- Plug in the X-Nipple.
3. Side Pocket Mandrel (SPM) to install the GLV / Dummy.
4. Sliding side door (SSD) c/with x-Nipple which we can install the 2.813" X- Plug.
5. 9.5/8" BHD Packer.
6. Blasting joint (2.880" ID)
7. XN Nipple seal bore 2.750" and no go ID 2.660 "- 2.750" XN Plug can be seated.
8. Tubing ID 2.992"
9. 9.5/8" ID casing size
10. 36" Conductor,

· KOT for pulling Dummy / GLV

Tubing 4 1/2 = 2 1/2 tool string

Tubing 2 1/2 = 1 1/2 tool string

* 1 42BO Jar down to open side door
* 42BO Jar Up to close side door

4. X-Mas Tree

What is x-mas tree
X-mas tree is a series of valves installed on the wellhead to control the flow of fluid from the well

What is the purpose of x-mas tree
Installed on the tubing spool is surface safety valve to control the pressure from below

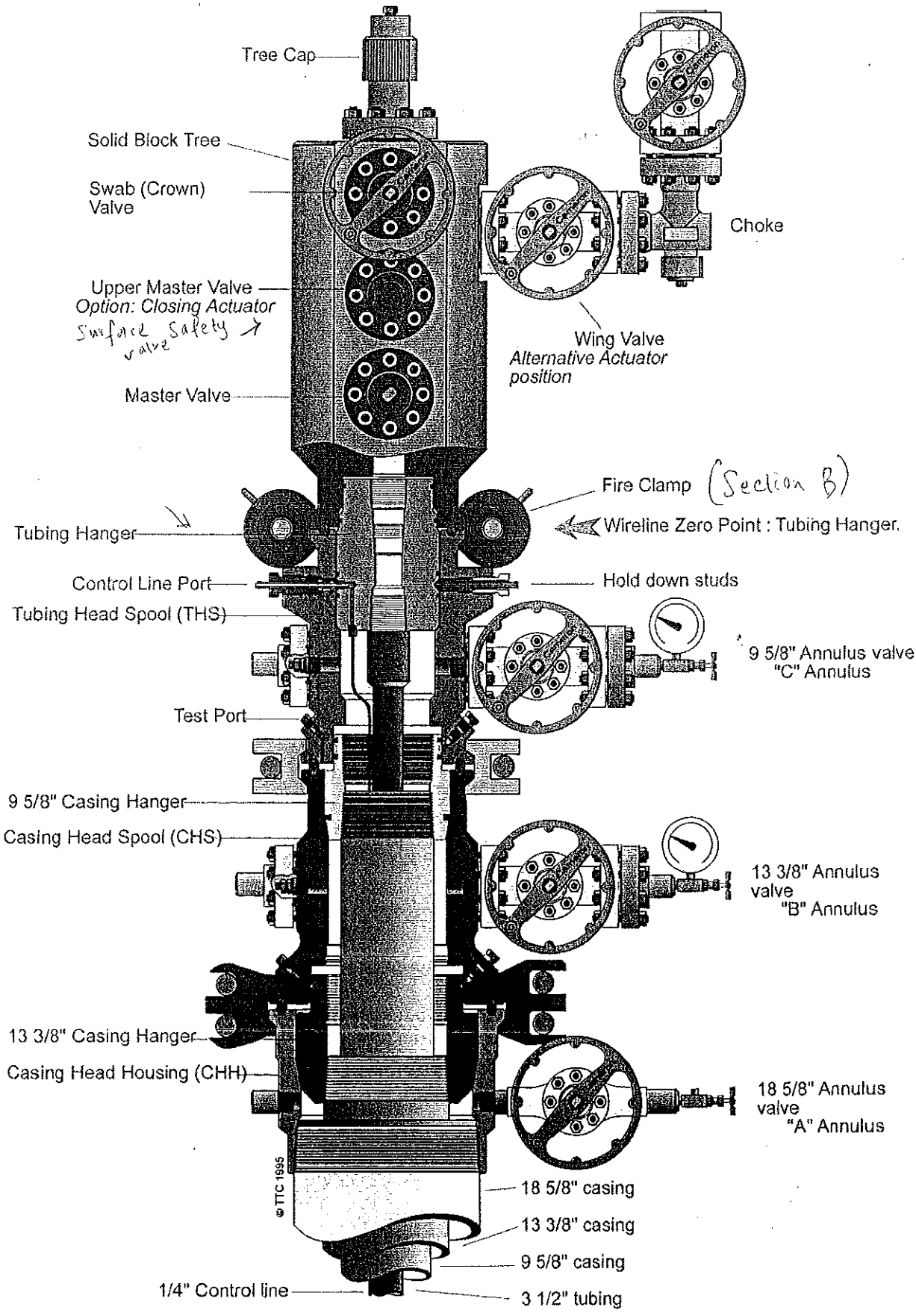
How to operate x-mas tree
- Control by SWCP (Single Well control Panel)

What is maintenance required for x-mas tree
* pressure testing of valves
* Corrosion and oration inspection

What is safety precaution required for x-mas tree
- Do not over tighten during opening and closing

What is potential hazard during handling x-mas tree
- High pressure
- Noise hazard
- Gas leaked

Draw & name each part of x-mas tree



X-Mas tree

- The X-Mas is installed on the tubing spool is Surface Safety Valve to control the pressure from below.
- The X-Tree Consists below

A. Master Valve

B. Top Valve

C. Wing Valve

D. Flowline Valve

- Rating pressure 3000 PSI and 5000 PSI

5. Wireline Reel Skid Unit (RSU) / Winch – Single Drum and Double Drum

What is RSU
- Certified with zone 2
- Equiped with safety device
- Equiped with weight indicator and depth counter
- Wire drum
- To control the drum direction and speed

What is the purpose of RSU
- To run down / pull out the wireline tool in the hole

How to operate RSU
- Make sure pressure supply and pressure return hose from power pack to reel skid unit have been tighten and ~~inst~~ have been installed the safety hose to hose whip check
* check control valve lever for brake and direction
- 4 Gear
-

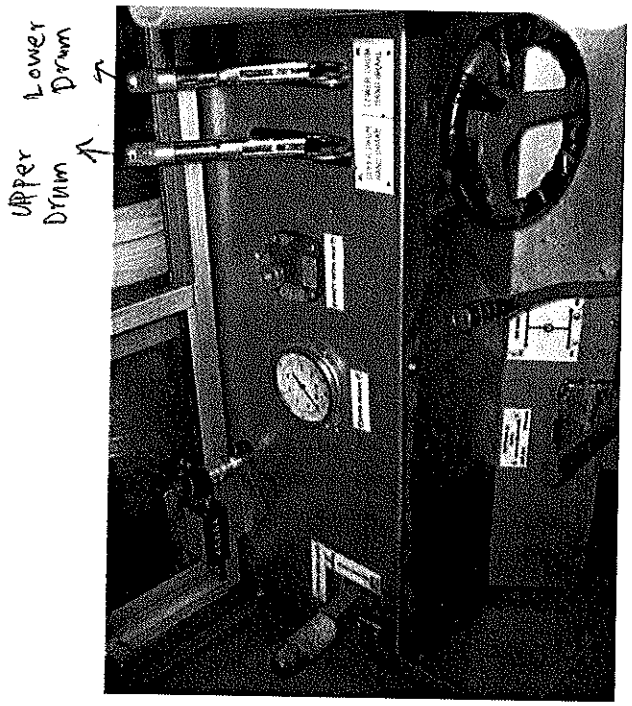
What is maintenance required for RSU
* Check all hose condition
* Odometer cable condition.
* change hydraulic filter (TIS Unit)

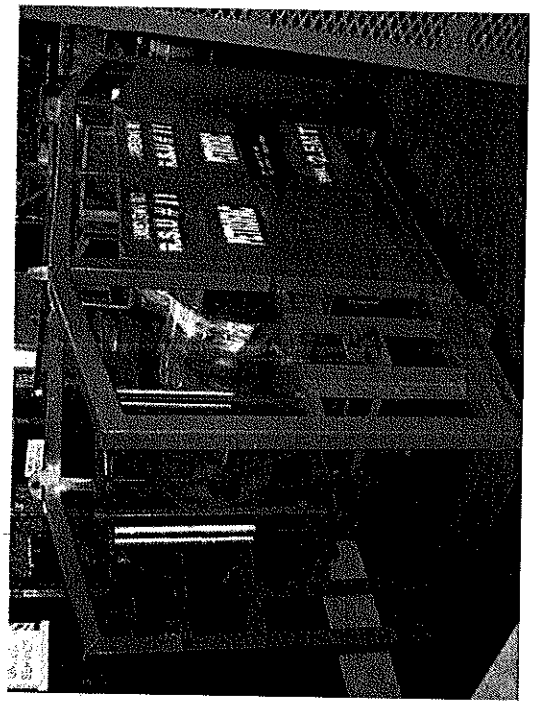
What is safety precaution required for RSU
- Always check hose condition and connection before using RSU
- make sure wire doesnt have kink
- Always install RSU cover.

What is potential hazard during handling RSU
- Hose burst
- Wire break
- pinch point

Draw & name each part of RSU

Wireline Unit (RSU)





6. Odometer

What is Odometer
Is a device that record and show the current depth of tools

What is the purpose of Odometer
To indicate wireline depths

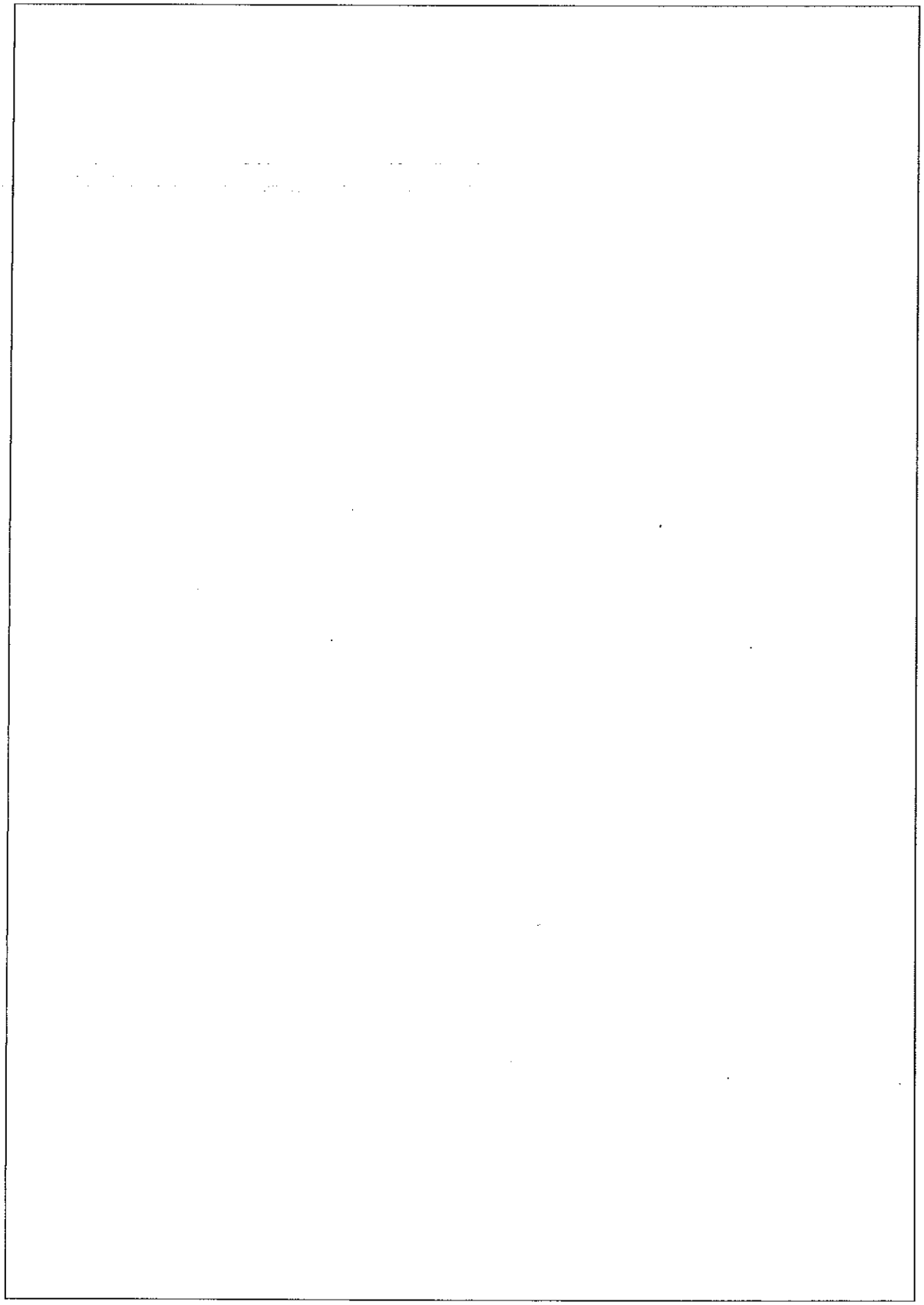
How to operate Odometer
- Connect the odometer to the odometer cable
- Have the ratio of 1:2
- To reset the odometer (zeroing tool), there is a knob than can be turn to reset it

What is maintenance required for Odometer
- clean, spray the cable and knob using WD-40

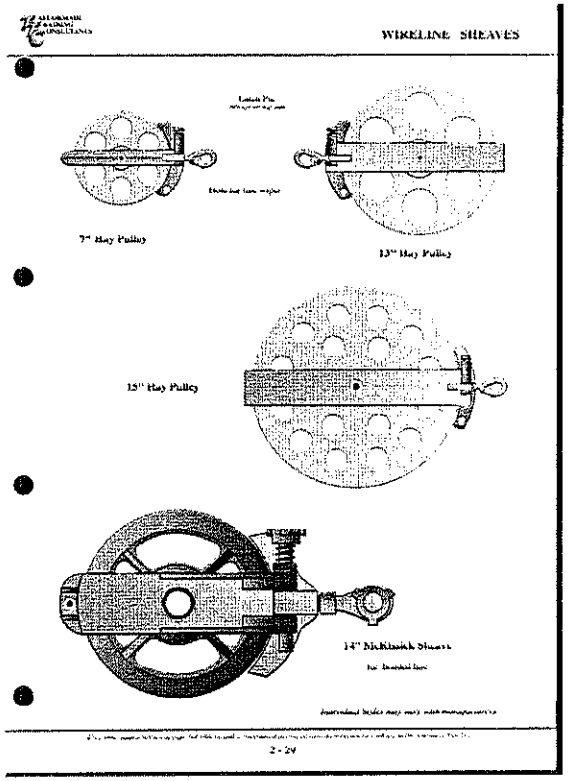
What is safety precaution required for Odometer
- Use proper glove when turning the knob
- Make sure the cable gland is tighten

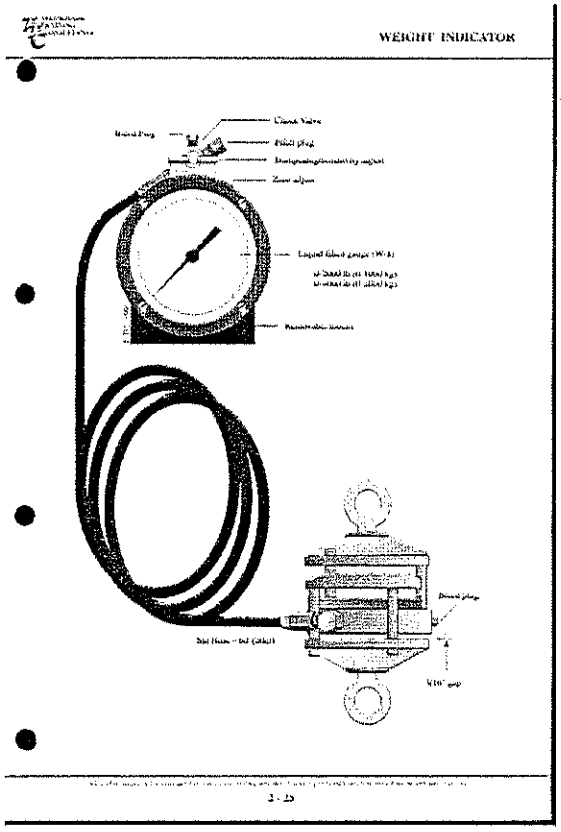
What is potential hazard during handling Odometer
- sharp point
- pinch point

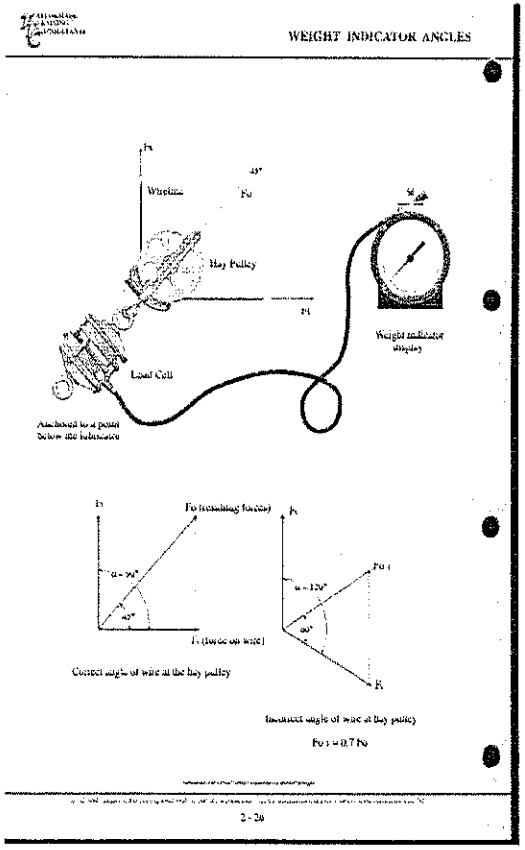
Draw & name each part of Odometer

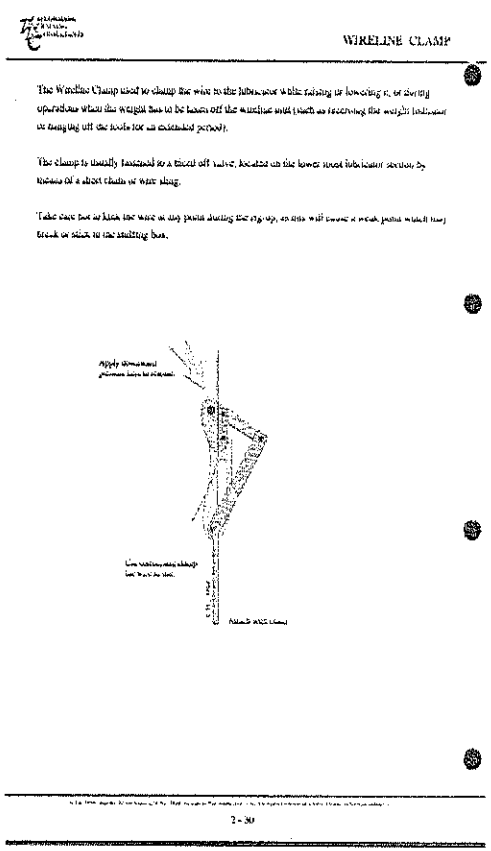


Hey pulley and weight indicator



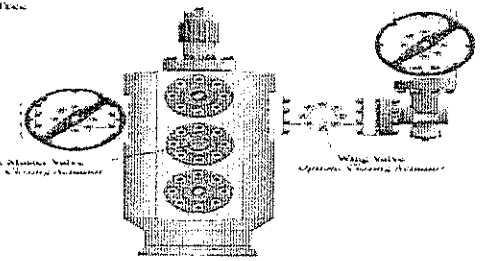




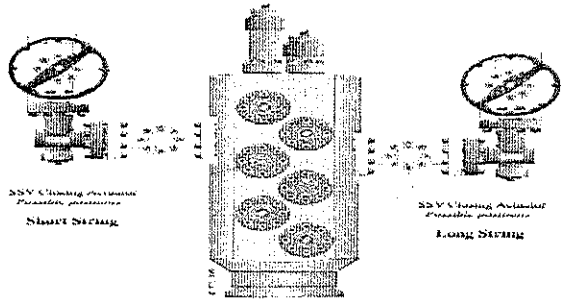


X-Mas Tree

Single Xmas Tree



Dual Xmas Tree



Surface Safety Valve actuators are mounted on reverse acting* Xmas tree gate valves. (* Flow line valves are not reverse acting and operate in the opposite direction.) Reverse acting gate valves are closed when the stem pressures.

The actuators can be fitted on the upper master and / or production wing valves. It is usual to have a manually operated master valve as the lowest valve on the tree.

The actuators can be:

Pneumatic Air operated actuators are common on land wells and / or where there is plenty of space. They are the largest in diameter and usually operate at 80 to 120 psi.

Hydraulic Oil operated actuators are smaller in diameter and are used in confined spaces, such as on offshore platforms. They usually operate at around 3,000 psi.

The option exists with many valve / actuator manufacturers to have sufficient force in the actuators to cut wireline in an emergency to isolate well fluids.

It is advisable to utilise the lockout cap during wireline operations. Check the valid procedure for the specific area of operation.

After Wireline Operations Ensure the Xmas tree valves are back in service, with the lockout caps removed, so that the well safety system is active.

Advise the production personnel that the well is available for production as per the procedures in place for your area.

7. Weight indicator (200 lbs and 4000 lbs)

What is Weight Indicator
The weight indicator is a completely sealed hydraulic system. and give accurate reading of downhole tools.

What is the purpose of Weight Indicator
* Provide accurate measurement of downhole tool weight during wireline operation and hoel or floor block.

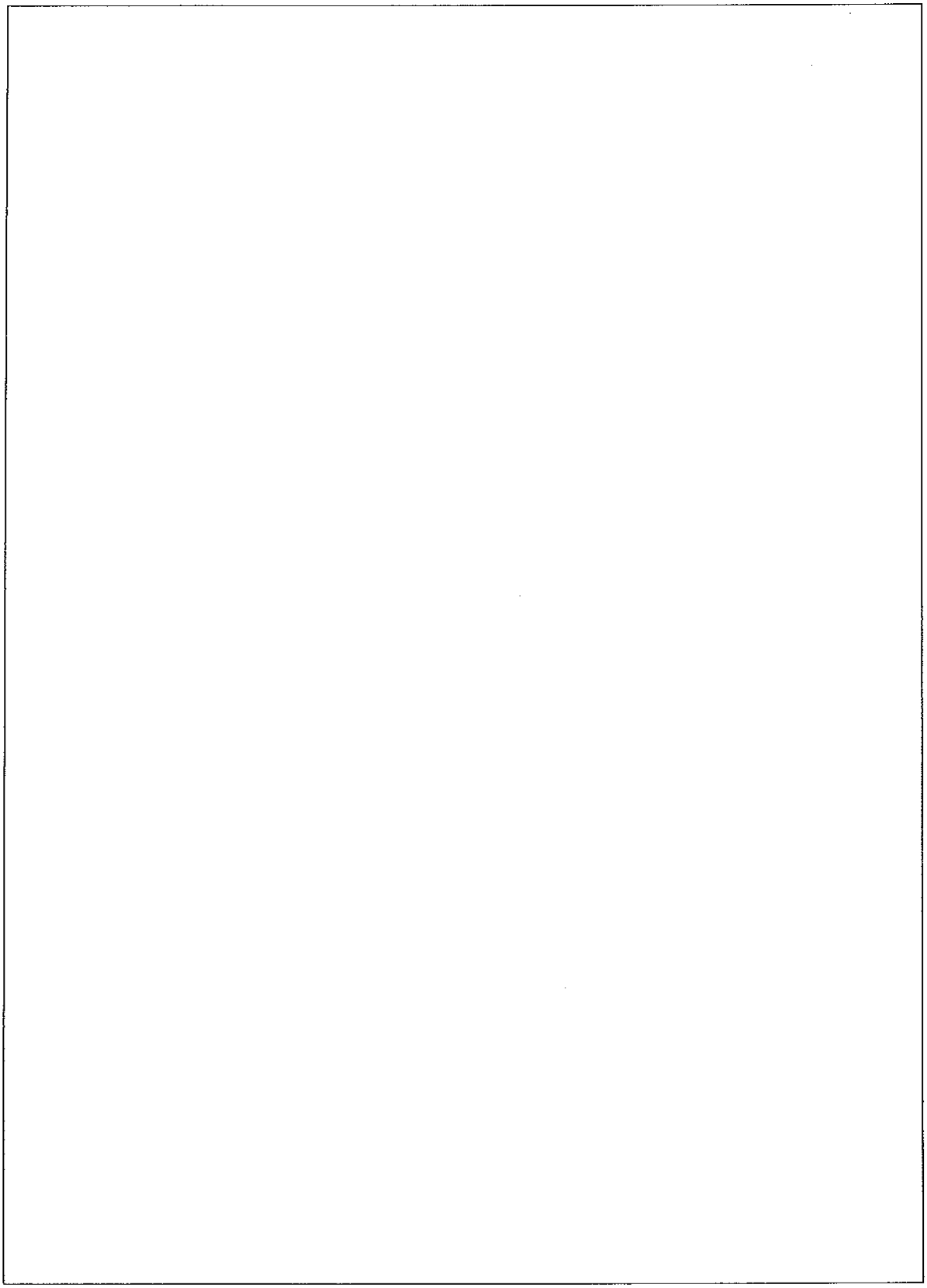
How to operate Weight Indicator
Before and during wireline operation
* to preventing the overloading of the wireline, the weight indicator will also show changes in tension due to fluid level or changes in fluid density, jar action and the position of the ~~damage~~ downhole equipment.

What is maintenance required for Weight Indicator
- change the hose if have any leaked

What is safety precaution required for Weight Indicator
* Do not crush or cut the hose
* Mount the load cell so that the hose leaves the cell towards the tree and is not kinked

What is potential hazard during handling Weight Indicator
- pinch point.

Draw & name each part of Weight Indicator



8. Spooling Device

What is Spooling Device

- ~~Spooling is a process in which data is temporarily held to be used and executed by a device, program or~~
- To provide a complete spooling system for application where a slickline or a braided line or a conductor line needs to be spooled under controlled tension from a standard shipping drum onto the wireline drum or from wireline unit onto the shipping drum (unspooling)

What is the purpose of Spooling Device

- To hold the reel in spooling process, it also give proper tension during spool in (Around 300 lb)

How to operate Spooling Device

Assemble the reel. The setup is almost the same with normal operation, which weight indicator and hay pulley is needed. spooling device have a brake lever and that will help to control the line tension

What is maintenance required for Spooling Device

- Brake maintenance
- Painting

What is safety precaution required for Spooling Device

- Always ensure flexi glass is in good condition
- Drum in good condition (Bolt & nut) Shaft

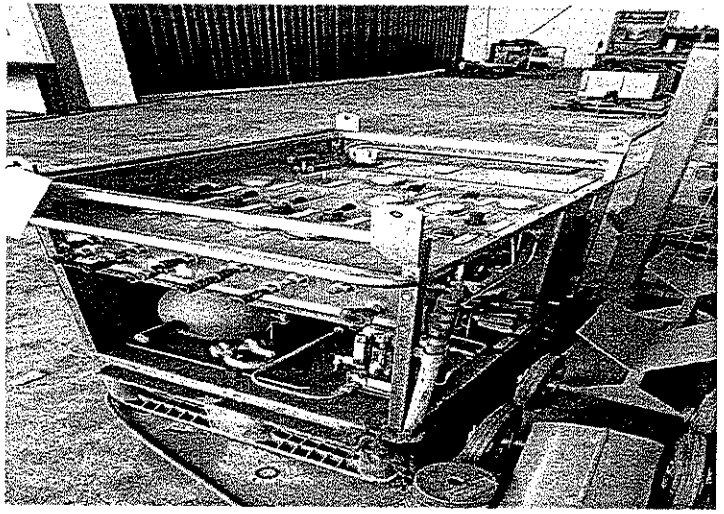
What is potential hazard during handling Spooling Device

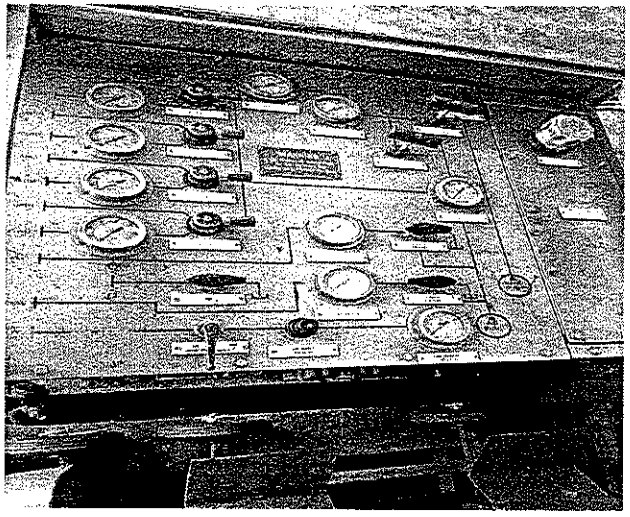
- Pinch point
- Wire parted
-

Draw & name each part of Spooling Device

What is control penal

Control Panel





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FIELD OPERATING & MAINTENANCE MANUAL

Dual blow out preventer Stuffing box Down hole safety valve

WELL HEAD CONTROL UNIT
(2-BOP, SB, DHSV, MV & TEST LINE)
990062110 Master valve
FOMM – PCU068(REV 01)

REV. NO	DATE	PREPARED BY	CHECKED BY	APPROVED BY
01	13.04.2019	Vijay	Saga	Zhao Yun Hua

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13 Tuas Avenue 13,
Singapore - 638985.
Tel: +65 62654972 Fax: +65 62654973.

REVISION HISTORY

Rev.No	DATE	CHANGES/ REASON	AFFECTED ZONE	RELEASED BY
01	13.04.2019	First release	-	Sagadhevan

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13 Tuas Avenue 13 ,
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Tel: +65 62654972 Fax: +65 62654973.

CONTENTS

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13 Tuas Avenue 13,
Singapore - 638985.
Tel: +65 62654972 Fax: +65 62654973.

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Singapore - 638985 .
Tel: +65 62654972 Fax: +65 62654973.

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SECTION 1 SAFETY

1.1 GENERAL

- Read operation and maintenance manual carefully before operating.
- Observe all safety precautions.
- This system is capable of producing high pressure response accordingly.
- On air driven units, to avoid component rupture and possible injury regulate inlet air pressure slowly. so outlet pressure does not exceed the maximum working pressure of any component in the set up.
- Check pressure rating and compatibility of all connections.
- Clear area of unnecessary personnel.
- Select proper equipment.
- Make sure valves and regulators are in correct position.
- Do not try to tighten or loosen connections under pressure.
- Do not weld, file or use metal stamps on the pressure equipment – these can start cracks.
- Do not overtighten any valves (hand tight only).
- Do not attach anything to this equipment unless you are sure of its pressure rating.
- Beware of trapped pressure. Bleed off fully before dismantling any connections.
- Pay attention to all safety and warning instructions on the machine.
- Always use appropriate personnel protective equipment.

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SECTION 2 DESIGN PRINCIPLE

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2.1. GENERAL

- This RMZ Hydraulic control module is designed to operate DUAL RAM BOP, SB, SV, MV & TEST LINE (15K WP). → working pressure
- Three air driven hydraulic pump (One DSTV-52 Pump for BOP & SB. Two ASF-150 pumps for SV, MV & TEST LINE). Four back-up hand pumps are provided in this circuit.
- Emergency shutdown facility provided.
- Two hydraulic hand pumps are used in SB & BOP circuits. The SB /BOP circuit supply hydraulic pressure up to 5,000 psi maximum pressure.
- Two hydraulic hand pumps are used in SV, MV & TEST LINE circuits. The SV/MV/TEST LINE circuit supply hydraulic pressure up to 15,000 psi maximum pressure.
- S.S integrated Hydraulic tank (55L + 20L) is provided. (Stainless Steel)
- Low Hydraulic pressure Horn system has been provided for SV & MV. (Kurang hydraulic pressure → Horn akan berbunyi)
- All hoses are mounted on RMZ "wet centre" reel, all tubing and many components are of stainless steel. All controls are mounted ergonomically on a stainless-steel mimic control panel.
- Emergency shutdown facility -Ball valve type has been provided to bleed hydraulic pressure on SV/MV hyd. line as immediately.

example : Kurang minyak Hydraulic →

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2.2. FEATURES

- Steel unit frame.
- Protective cover panels.
- 55L + 20L hydraulic oil reservoir.
- Machine engraved, stainless steel, colour coded panel.
- A clear & easy understanding stainless steel control panel is incorporated with the unit.
- Controls for SB, BOP, SV, MV and TEST LINE.
- Three air driven hydraulic pump for circuits.
- Back-up SS hand pump for circuit.
- Built –in hose reels with rewinding mechanism to allow ease of hoses handling
- Two 20L Accumulator and Relief valve in circuit.
- Air supply port.
- Hydraulic oil is supplied 3,000 - 5,000 psi pressure via port to DUAL BOP & SB.
- Hydraulic oil is supplied 15,000 psi pressure via port to SV, MV & TEST LINE.
- Optional Accumulator -N2 gas Precharge set up.

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2.3. SPECIFICAION

- The HASKEL 57:1 high pressure pump, P/N: 990043509 (DSTV-52) supply 8.0L/min. at 5,000 psi with 150 psi max.air supply pressure, C/W ATEX certification.
- The HASKEL 150:1 high pressure pump, P/N: 990038286 (ASF-150) supply 1.3L/min. at 15,000 psi with 150 psi max.air supply pressure, C/W ATEX certification.

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2.4. PHYSICAL CHARACTERRISTICS

- The RMZ Hydraulic control module – 990062110 overall dimensions

  Length = 56.0"

  Width = 48.3"

  Height = 65.7"

- Approximate weight:

  Gross = 1800 kg

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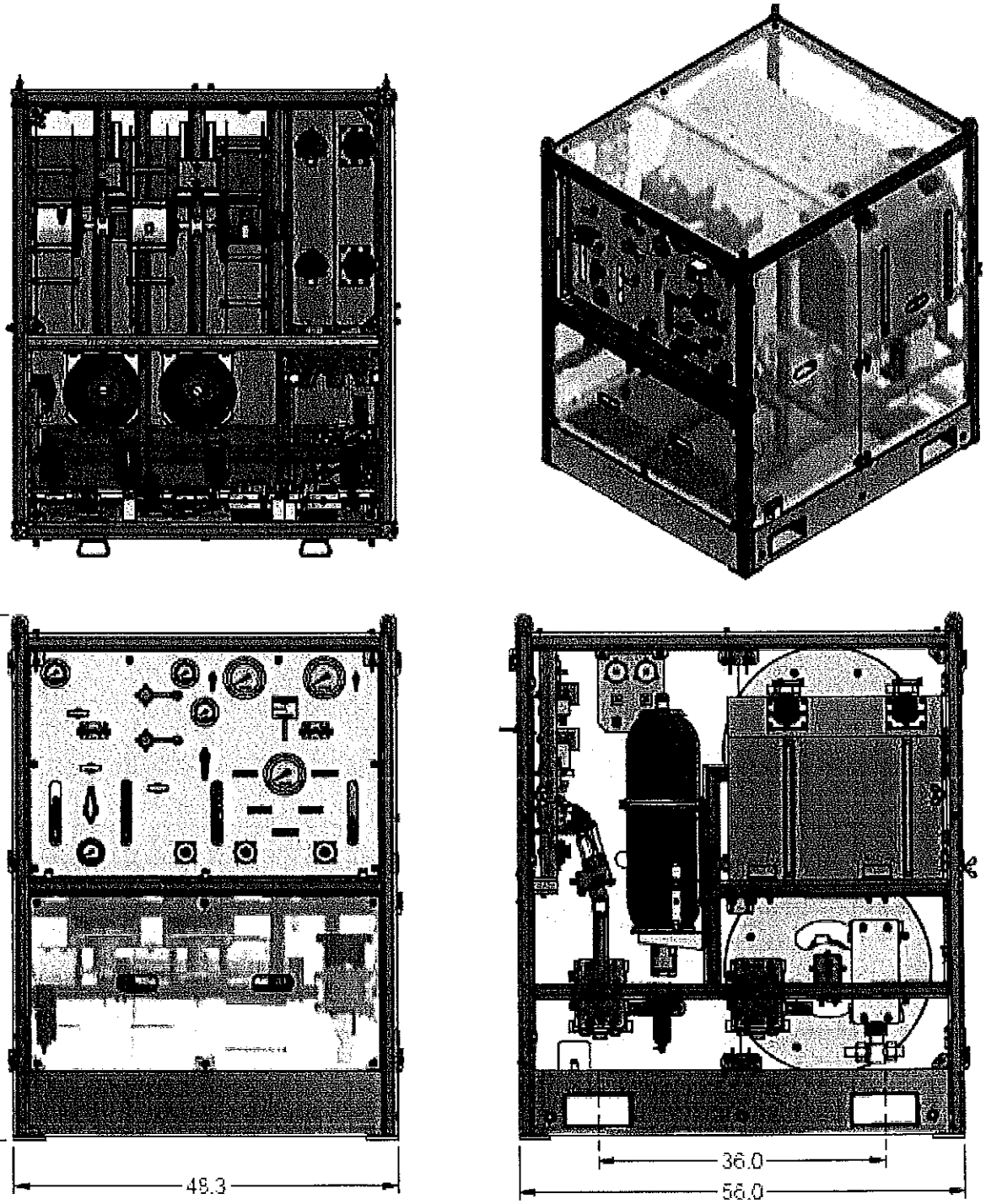
2.5. OVERALL DRAWING



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SECTION 3 CONTROL PANEL AND OPERATION PROCEDURE

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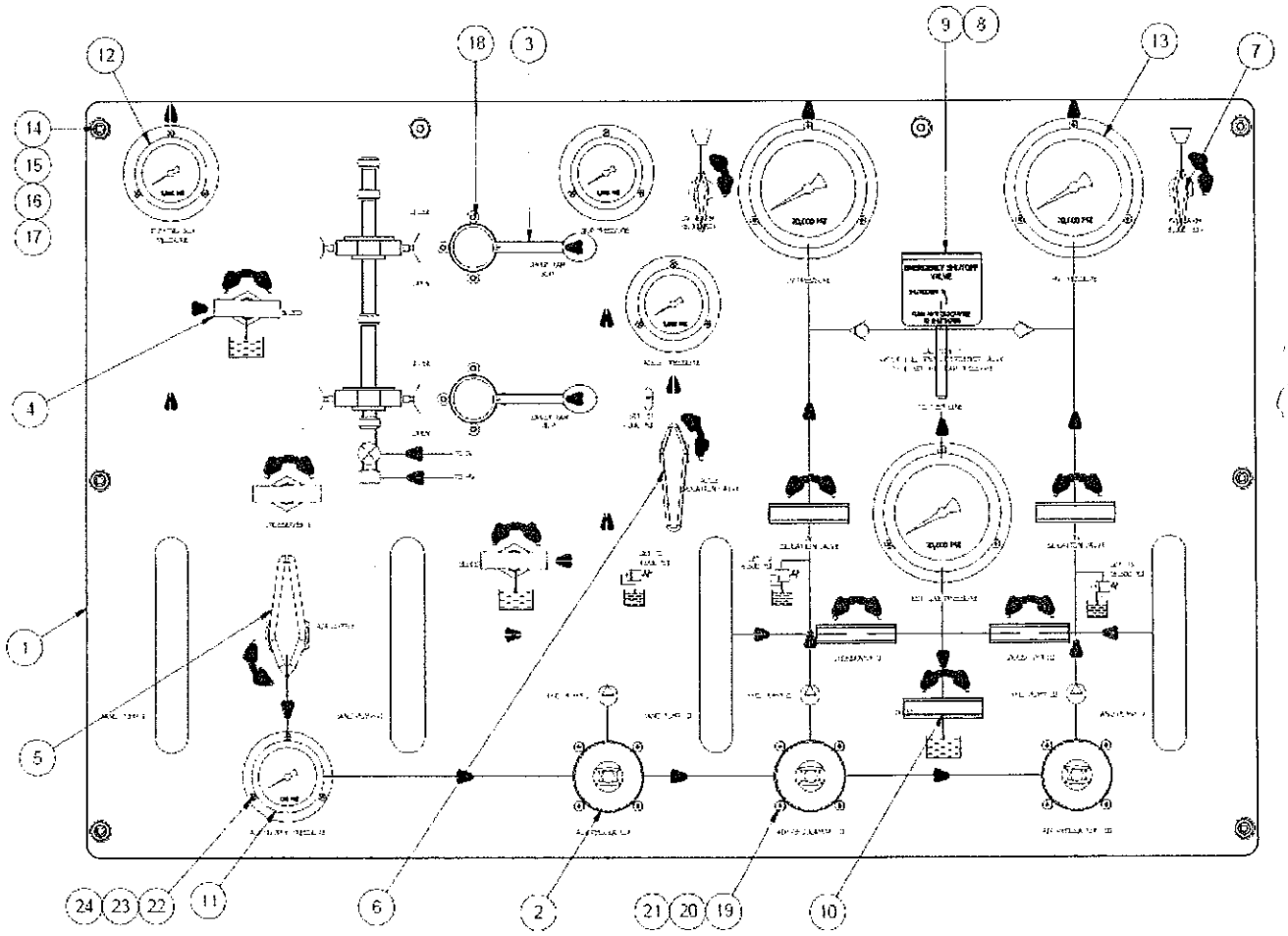
3.1 CONTROL PANEL DRAWING / BILL OF MATERIAL:



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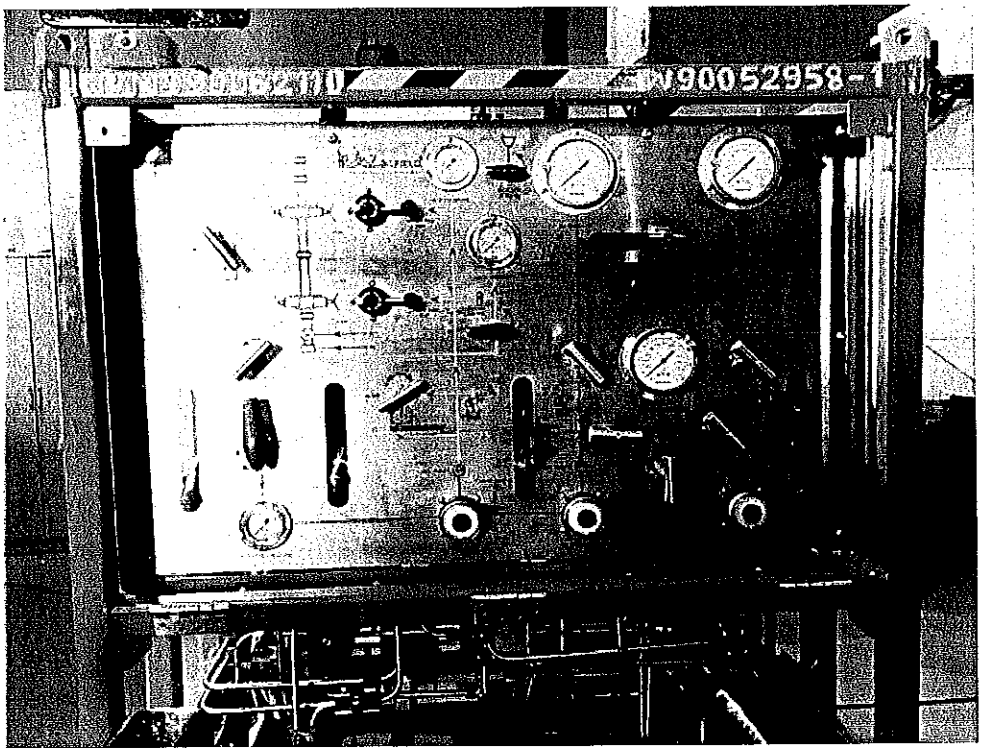
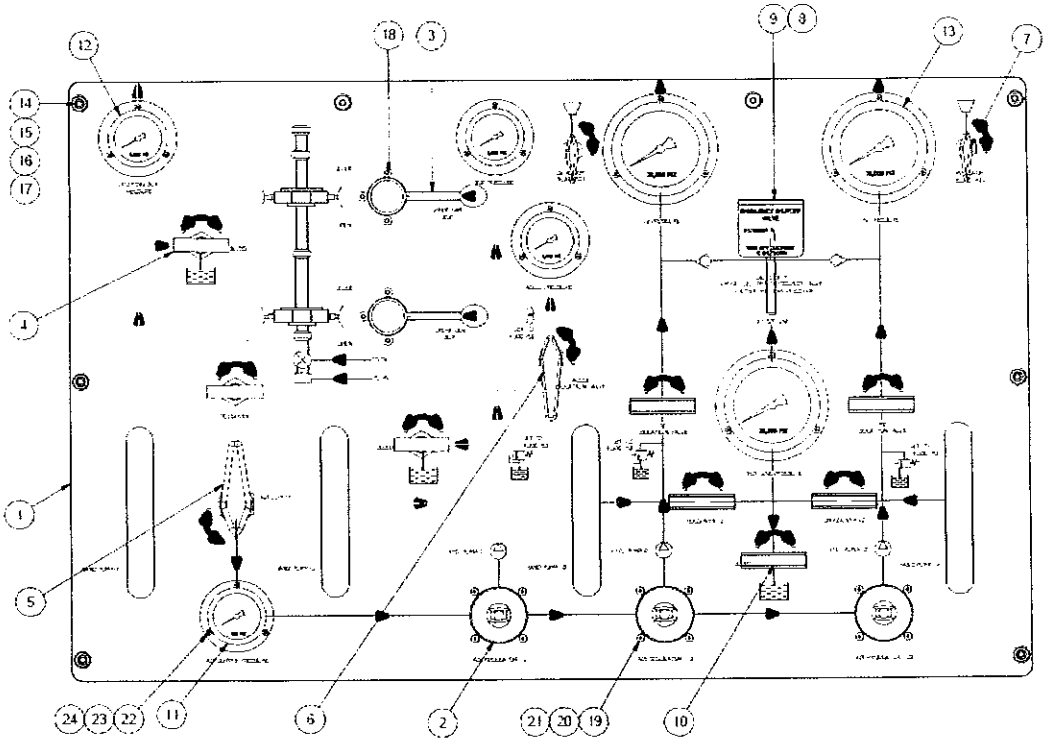
RMZ – WIRELINE 15K PRESSURE CONTROL TRAINING SCHOOL

RMZ – WL Well Head Control Unit Assembly (Front View)





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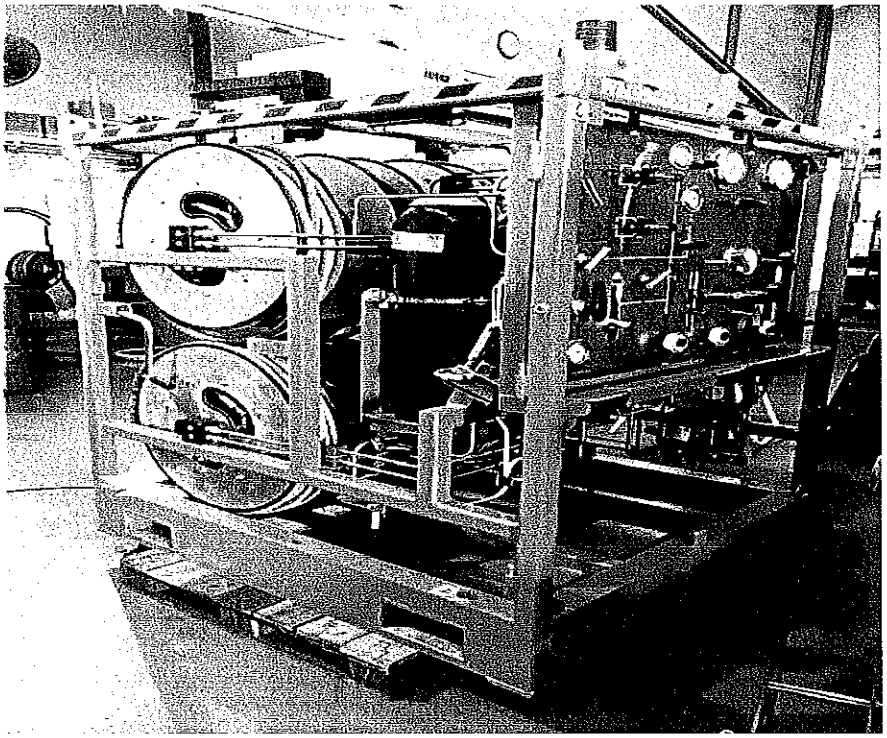
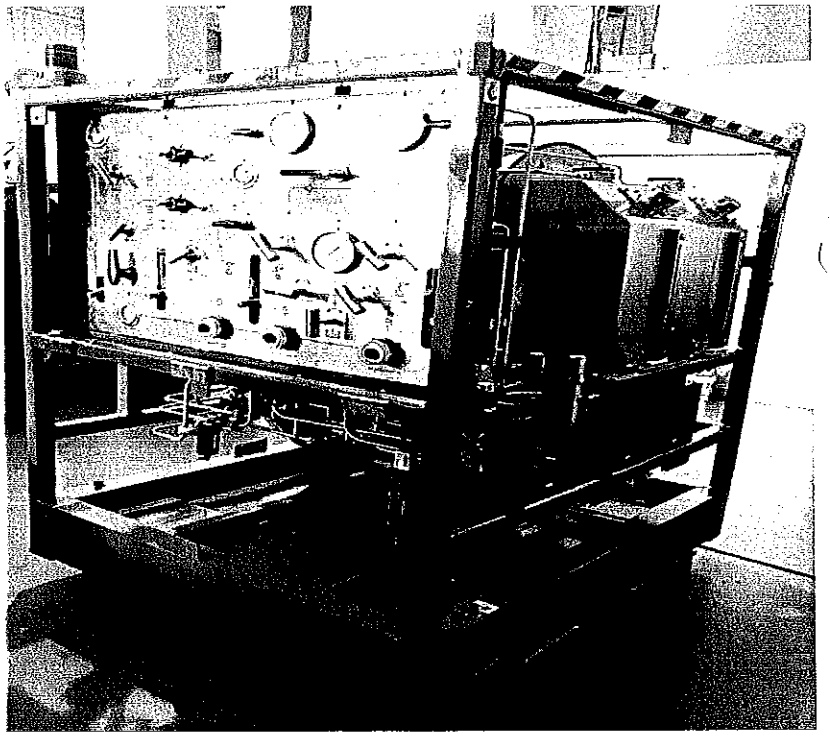
RMZ – WIRELINE 15K PRESSURE CONTROL TRAINING SCHOOL

RMZ – WL Well Head Control Unit Assembly (Side View)



15K HP CONTROL PANEL



FLUID STORAGE TANKS AND SAFETY REGULATORS

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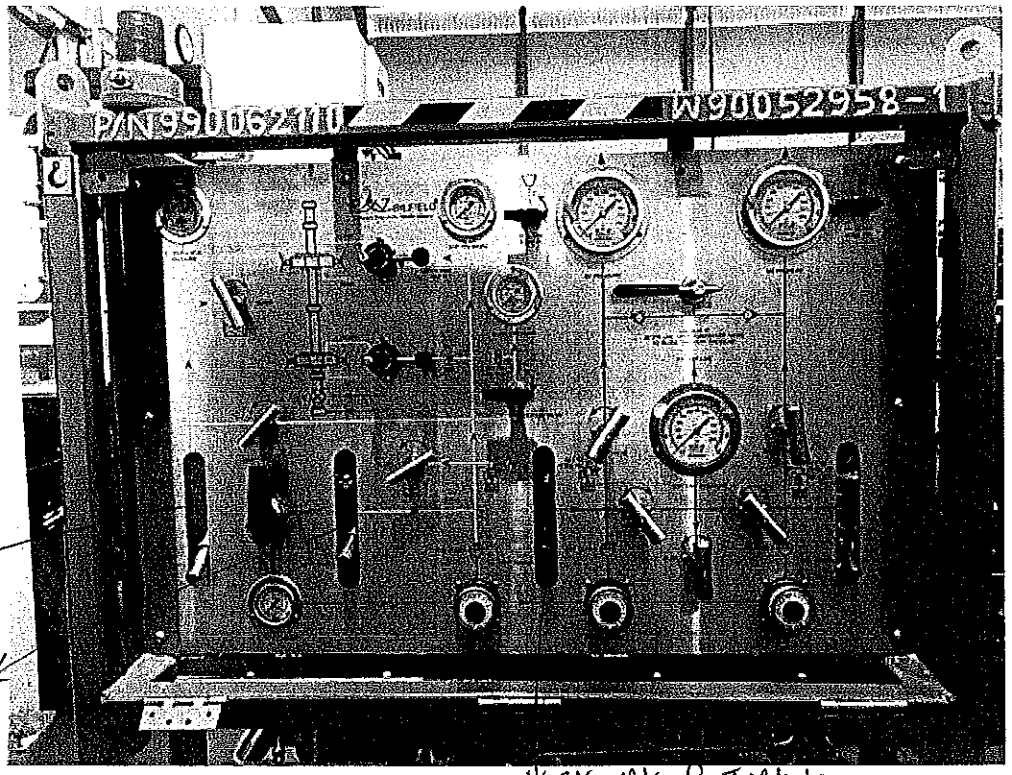
RMZ – WIRELINE 15K PRESSURE CONTROL TRAINING SCHOOL



* Pressure Gauge
* Selecter Valve
* Hand pump
* Air regulator
* Needle valve (Garum valve, Ball valve)

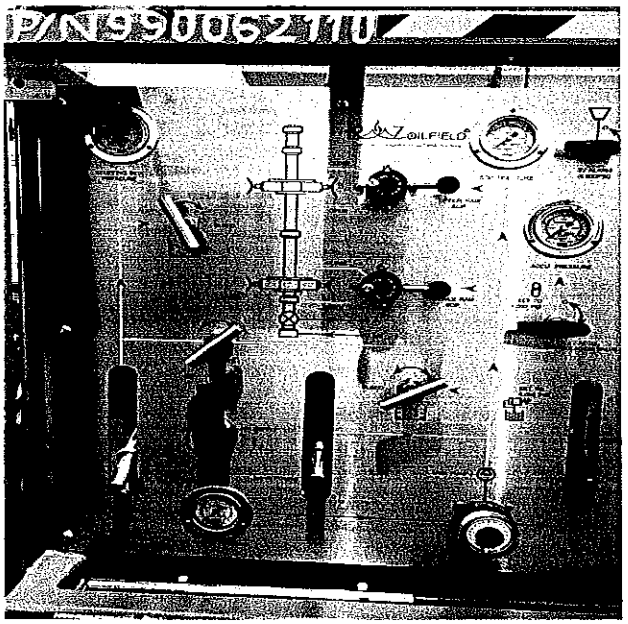
(Hand pump)

(stuffing ox

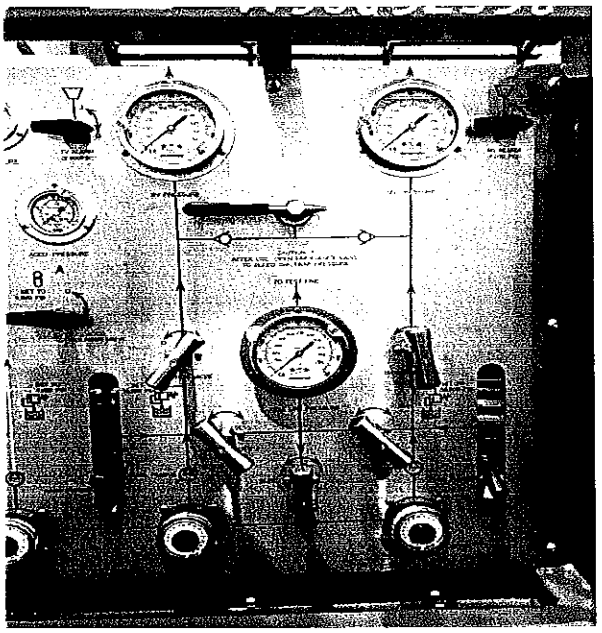
BOP

↓ SV, MV & Test Line

Front View :- Full Face 15K Pressure Control Panel



Side A :- Wellhead BOP Control



Side B :- Wellhead Downhole Control

MV / SCSSV / BV / Test line.

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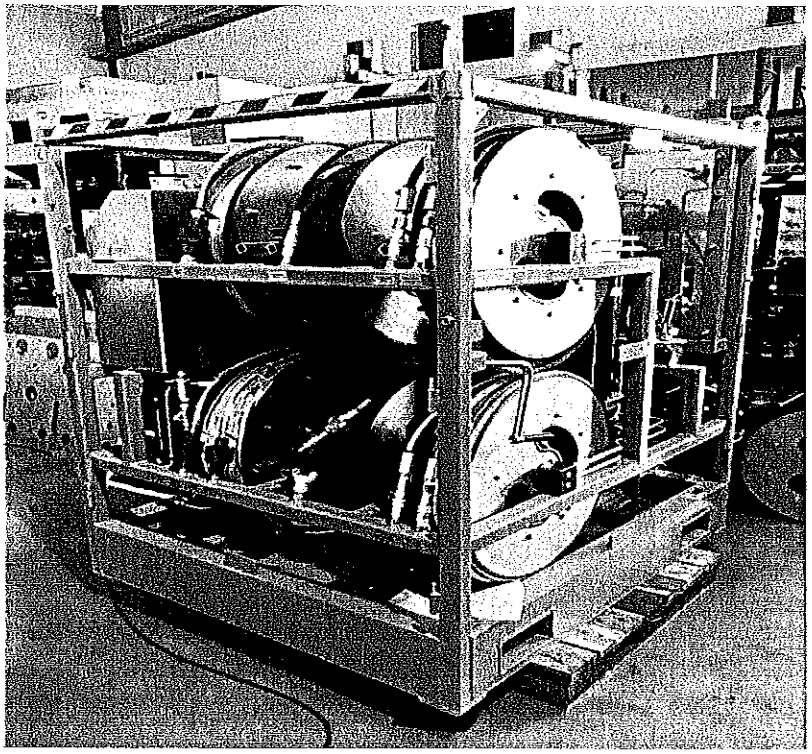
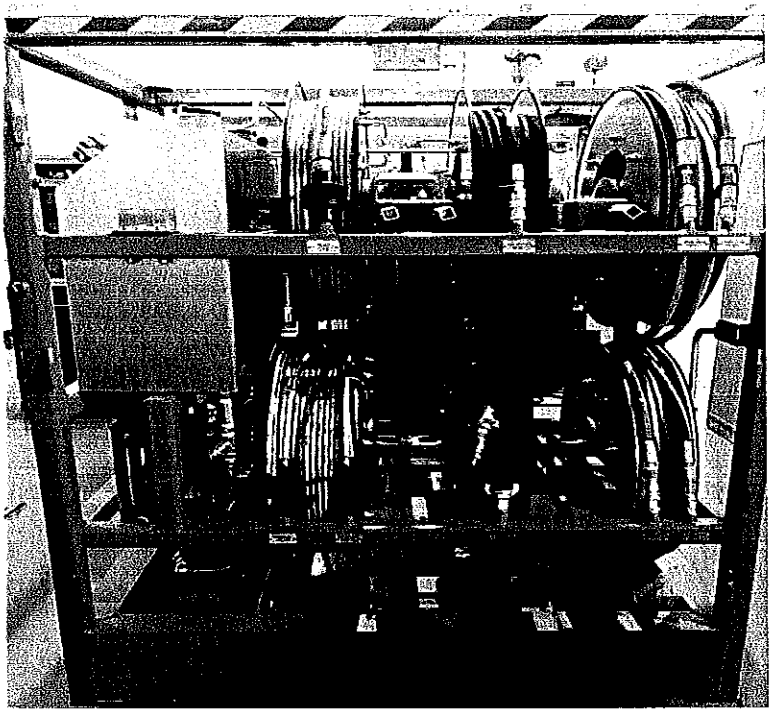
RMZ – WIRELINE 15K PRESSURE CONTROL TRAINING SCHOOL

RMZ – WL PCE HP Hydraulic Hoses and Pressure Lines Assembly



Side View



Front View

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BILL OF MATERIAL:

ITEM	PART NO	DESCRIPTION	QTY
1	990063155	CONTROL PANEL PLATE	1
2	990031686	AIR REGULATOR	3
3	990023674	4 WAY 3 POSITION VALVE	2
4	990024589	NEEDLE VALVE	3
5	990027503	BALL VALVE	1
6	990053060	BALL VALVE	1
7	990004044	BALL VALVE	2
8	990063661	TRUNION BALL VALVE-2WAY	1
9	990041346	EMEGENCY VALVE COVER	1
10	990024925	NEEDLE VALVE	5
11	990004041	PRESSURE GAUGE	1
12	990004043	PRESSURE GAUGE	3
13	990024992	PRESSURE GAUGE	3
14	990015431	BUTTON HEAD SOCKET CAP SCREW	8
15	990016365	FLAT WASHER	16
16	990003979	SPRING WASHER	8
17	990003978	HEX NUT	8
18	990001788	BUTTON HEAD SOCKET CAP SCREW	18
19	990025468	CROSS RECESSED PAN MACHINE SCREW	12
20	990028541	LOCKNUT	12
21	990019360	FLAT WASHER	12
22	990018086	CROSS RECESSED PAN MACHINE SCREW	12
23	990028539	LOCKNUT	12
24	990016357	FLAT WASHER	12
25	990028540	CROSS RECESSED PAN MACHINE SCREW	9
26	990020471	LOCKNUT	9
27	990016359	FLAT WASHER, FOR #8 SCREW	9

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3.2 GENERAL CHECK BEFORE OPERATION

- Check hydraulic level through the level indicator. 3/4
- The airline filter is drained.
- Ensure that all air valves are OFF.
- Ensure that all needle valves and air regulators are CLOSE.
- Hand pump relief valves are CLOSED.
- Check all tubing, fittings etc., for any signs of damage. Replace as necessary.

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3.3 FIELD OPERATION

3.3.1 RIG UP

- Place the skid with reels facing the rig
- Connect unit onto the relevant couplings on the rig. Inspect the valves and tubing for damage.
- Ensure that air supply to the pumps is OFF by turning the regulators on the control panel fully anti-clockwise.
- Connect unit to the air supply – max 150 psi.
- Check air pressure on the Air Pressure Gauge.
- Ensure crossovers are in OFF position.

3.3.2 RIG DOWN

- Set the air supply valve to OFF.
- Turn the hydraulic pump air regulators fully anti-clockwise.
- Open the BLEED valve for each circuit. This should release fluid pressure within the unit.
- Set the 4-way 3 position valves at OPEN position a few seconds, and turn to CLOSE position a few seconds, and then turn to BLOCK position. This should release fluid pressure in the hoses and tubing.
- Rewind hoses onto reels. Reels must not be rotated with pressure in the hoses. This will reduce "O" ring seal life.

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3.4 BOP PRESSURE / FUNCTION TESTING

Danger: The following pressure tests are only carried out at up to maximum working pressure (MWP) of the systems in order to check for leaks and correct operation. Any testing above MWP should be carried out in a recognised pressure test bay.

3.4.1 BOP Pressure / Function test

1) Connect the air hose to air supply port.
2) Set all 4-way 3 position valves to BLOCK position.
3) Turn air regulator for BOP OFF (fully anti-clockwise).
4) Close the hydraulic bleed valve
5) Turn the accumulator valve to close position.
6) Turn the main air supply valve on.
7) Slowly turn air regulator for BOP clockwise until the max. Required pressure is reached.
8) Set the Upper RAM BOP 4-way 3 position valve to CLOSE. Check gauge for pressure. Check for leakage behind control panel and hose ends.
9) Set the Upper RAM BOP 4-way 3 position valve to OPEN. Check gauge for pressure. Check for leaks.
10) Set the Upper RAM BOP 4-way 3 position valve to BLOCK. Check gauge for pressure. Check for leaks.
11) Repeat Step 8) ~ 10) to other RAM 4-way 3 position valves.
12) Turn the BOP regulator off.
13) Turn the main air supply valve OFF.
14) Open bleed valve to release pressure to zero.
15) Set all 4-way 3 position valves to CLOSE position.
16) Turn the BOP isolation valve to open position.

3.4.2 Charge Accumulator

1) Set 4-way 3 position valves to Block position.
2) Turn the BOP isolation valve & accumulator valve to OPEN position.
3) Slowly turn air regulator for BOP clockwise until the desired pressure is reached. Check gauge for pressure. Check for leaks.
4) Turn the accumulator valve to the CLOSE position.
5) Turn air regulator for BOP OFF (fully anti-clockwise).
6) Open the BOP Bleed Valve.

3.4.3 BOP Pressure

Max. Working Pressure: 5,000 PSI.

3.4.4 Bop / Accumulator relief valve

Set BOP / Accumulator relief valve: 4,000 ~ 4,500 PSI.

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3.5 BOP HYD SYSTEM OPERATION INSTRUCTIONS (for emergency operation)

3.5.1 Operation Instruction by Hydraulic Pump

1) Bop Hydraulic System Max. working pressure 5,000 PSI
2) Ensure all BOP 4-way 3 position valves are in BLOCK positions.
3) Ensure the BOP air regulator, located at bottom of panel, is OFF (fully anti-clockwise).
4) Ensure the bleed valve is in the CLOSE position.
5) Ensure the crossover valve is in the CLOSE position.
6) Set the 4-way 3 position valve to the OPEN position.
7) Turn the BOP air regulator slowly clockwise until the BOP Pressure gauge reaches the BOP operating pressure.
8) The BOPs may now be operated by moving the BOP 4-way 3 position valves to either the OPEN or CLOSE position

3.5.2 BOP OPERATION by Hand Pump (Emergency operation)

1). In case of the air supply failure, the hand pump can be utilised.
2). Open the BOP isolation valve.
3). Turn the air regulator fully anti-clockwise (OFF)
4). Ensure that the bleed valve is in the CLOSE position.
5). Ensure that the MV isolation valve is in the close position.
6). Ensure that 4-way 3 position valve is set to the CLOSE position.
7). Operate hand pump and maintain operating pressure on the BOP Pressure gauge.
8). Control the BOP using the appropriate 4-way 3 position manual valve (pull the locking knob on the valve before moving the handle).
9). Depressurize the hydraulic system by opening the bleed valve.

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3.6 a) PRESSURE/FUNCTION TEST FOR SV & MV

1) Turn the MV & SV air regulator fully anti-clockwise **(OFF)**
2) Ensure that the bleed valve is in the close position.
3) Ensure that the BOP isolation valve is set to the **close** position.
4) Slowly turn MV & SV air regulator clockwise until the max. Required pressure is reached.
5) Set the SV & MV isolation NEEDLE VALVE to **CLOSE**. Check gauge for pressure. check for leaks.
6) Turn off air regulator (fully anti-clockwise).
7) Open the bleed valve.

b) HORNING SYSTEM

1) Before to start the system, turn the horning ball valve to **close** position.
2) When the system pressure reaches stable, Turn the horning ball valve to **open** position.
3) When the MV pressure less than 8,000 PSI, the Horning alarm will be responding.
4) When the SV pressure less than 8,000 PSI, the Horning alarm will be responding.

c) EMERGENCY VALVE

1) When the system working normal, the emergency shutdown system -Ball valve should be in **closed** position.
2) When the system working abnormal, open the emergency shutdown valve cover and **Turn Ball valve in Anti-clockwise direction.** Thus, the HYD pressure in the system (SV/MV) will bleed immediately.
3) In case of Emergency valve malfunction, turn the Isolation valve(s) and crossover valve(s) to open position & bleed the hydraulic pressure thru Bleed valve in the SV/MV hyd. Line. The malfunction ball valve then to be replaced with careful consideration of trapped pressure.

Note: After completion of SV/MV operation, Turn the Emergency shutdown - Ball valve in anti-clockwise direction to bleed the trapped pressure of hydraulic oil & air in the system.

SYSTEM PRESSURES

SV / MV

Max SV working Pressure 15,000 psi
Max MV working Pressure 15,000 psi

LOW PRESSURE HORNING

Set SV alarm Pressure 8,000 psi
Set MV alarm Pressure 8,000 psi.

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3.7 SV / MV OPERATION INSTRUCTION.

3.7.1 SV / MV OPERATION BY HYDRAULIC PUMP

1) Close the Bleed Valve
2) Close / open the crossover according to MV / S.V operation.
3) Open isolation valve according to MV / S.V operation.
4) Operate the air reg-II/air reg – III clockwise &watch the pressure of hydraulic in S.V/ M.V pressure gauge.
5) Use the hydraulic pressure to operate S.V / M.V.
6) Depressurize the hydraulic system by opening the bleed valve.
7) Use emergency valve to quick stop the operation.
8) MV Max. working Pressure: 15,000 PSI
9) SV Max. working Pressure: 15,000 PSI.

3.7.2 SV / MV OPERATION BY HAND PUMP

1) Close the Bleed Valve & BOP isolation valve.
2) Close MV & SV block valve.
3) Operate hand pump and maintain operating pressure on the SV & MV pressure gauge.
4) Control the SV & MV using the appropriate needle valve. Check gauge for pressure. Check for leaks.
5) Depressurize the hydraulic system by opening the bleed valve
6) MV Max. working Pressure: 15,000 PSI
7) SV Max. working Pressure: 15,000 PSI

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3.8 SB PRESSURE / FUNCTION TESTING BY HYDRAULIC PUMP & HAND PUMP

1) Unwind the SB hose before pressure testing. Check the condition of all hoses ends, hoses and quick couplings. These should all be in good condition.
2) Close the crossover valve.
3) Set the hand pump needle valve to SB function and close crossover needle valve.
4) Operate air regulator/ hand pump and maintain operating pressure on the SB pressure gauge.
5) Control the SB using the appropriate needle valve. Check gauge for pressure. Check for leaks.
6) Depressurize the hydraulic system by opening the bleed valve.
7) SB pressure
   Max. working Pressure: 5,000 PSI.

3.9 TEST LINE PRESSURE / FUNCTION TEST

1) Connect the air hose to air supply port.
2) CLOSE THE SV & MV isolation valves.
3) Open the crossover needle valve(s) for Test line.
4) Turn the air regulator(s) for Test line.
5) Close the hydraulic bleed valve.
6) Slowly turn the air regulator(s) clockwise until the max, required pressure is reached.
7) Maintain operating pressure on the gauge.
8) Check gauge for leaks.
9) Depressurize the hydraulic system by opening the bleed valve.
10) Test Line Pressure
11) Max. working Pressure: 15,000 Psi.

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SECTION 12 HOSES

DESCRIPTION	RMZ P/N	QTY
1/2" X 60 FT LG, AIR HOSE, 2000 PSI WP FOR AIR INLET	990004940	1
3/8" X 75 FT LG, HYD SINGLE HOSE 5K PSI WP C/W API16D CERTIFICATE FOR BOP	990056612	4
1/4" X 150FT LG, HYD SINGLE HOSE, 15K PSI WP FOR MV & SV	990063687	2
1/4" X 100FT LG, HYD SINGLE HOSE,15K PSI WP FOR TEST LINE	990063683	1
1/4" X 150 FT LG, HYD SINGLE HOSE 5K PSI WP FOR SB	990039766	1

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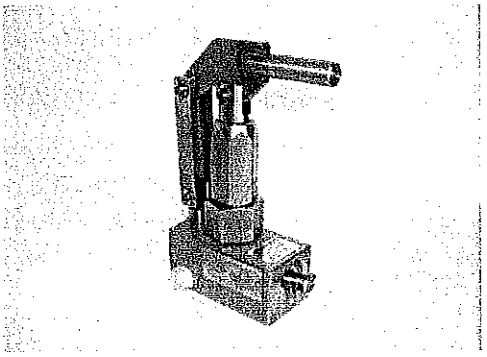
SECTION 13. HAND PUMP

13.1 GENERAL



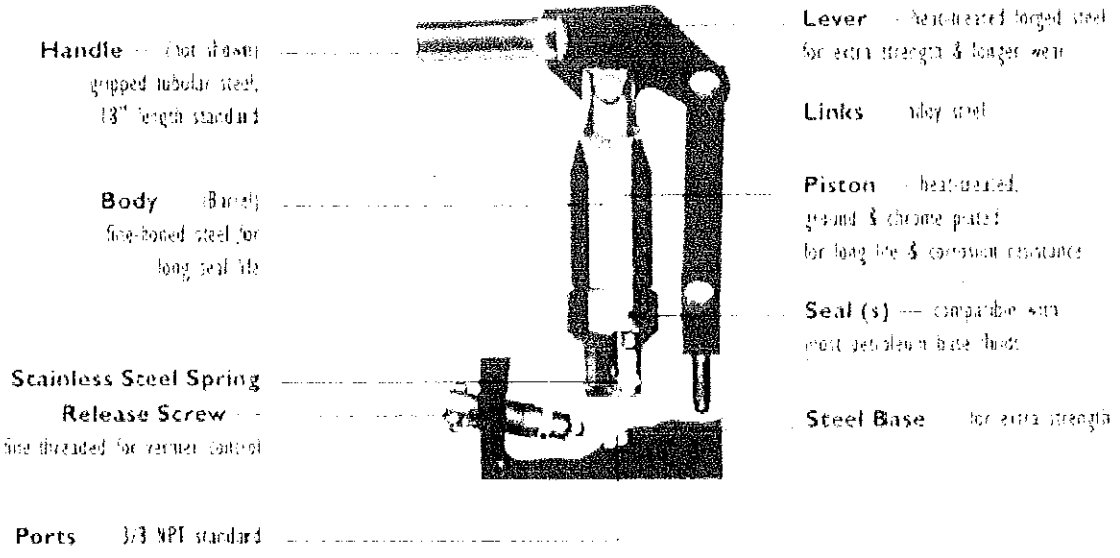
The Hydraulic hand pumps are a hand – held hydraulic sealant injection pump that is rated to 10,000 PSI & 20,000 psi used.

13.2 FEATURES

1. The hand pump made up of SS material.
2. Heat treated, ground and chrome plated pistons.
3. Gripped tubular steel handles
4. Release screws fine threaded for Vernier control
5. Seals compatible with petroleum-based fluids.
6. Excellent resistance to corrosion in marine & chemical processing.

13.3 SPECIFICATION

Handle force required for rated pressure	: 191 Lbs for 10K& 210 Lbs for 20K Pump.
Volume / stroke	: 0.28 Cu. Inch & 0.16 Cu. Inch for 20K Pump.
Inlet & Outlet size	: 3/8 NPT
Net weight	:12 Lbs.



13.4 SEAL KIT:

- 10K RMZ HAND PUMP SEAL KIT P/N: 990039694.
- 20K HAND PUMP SEAL KIT P/N: 990064187

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SECTION 14 RECOMMENDED SPARES

DESCRIPTION		RMZ SPARE KIT P/N	QTY
AIR REGULATOR – WILKERSON R21-04-000 (990031686)		990025568	3
AIR FILTER – NORGREN F74G-4AN-QP1 (990004052)		990027301	1
HYD.PUMP – HASKEL DSTV-52	(AIR DRIVE SEAL KIT)	990020041	1
(SEAL KIT PACKAGE P/N:990041163)	(AIR CYCLING VALVE)	990020094	1
	(FLUID SECTION)	990041164	1
HYD. PUMP- HASKEL ASF 150	(AIR DRIVE SEAL KIT)	990020093	2
(SEAL KIT PACKAGE P/N: 990018133)	(AIR CYCLING VALVE)	990020094	2
	(FLUID SECTION)	990029513	2
20K HAND PUMP (9990033304)		990064187	2
3/8"-4 WAY 3 POSITION DIRECTION CONTROL VALVE (OPTIONAL)		990049512	2
10K RMZ HAND PUMP (990039620)		990039694	2

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SECTION 15 MAINTENANCE SCHEDULE

Refer to the relevant section in this manual for parts identification and disassembly / assembly instructions.

15.1 Daily:

- Check hydraulic fluid level
- Check low pressure warning system.
- Check ESD system condition.

15.2 Monthly:

- Disassembly air filter and clean thoroughly.
- Check hydraulic hoses & ends for any sign of leakage or damage.

15.3 Yearly

- Renew hydraulic tank and return filters.
- Disassembly hydraulic pump. Check for corrosion and wear.
- Disassemble hose reels if any seals are damaged replace with new.

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SECTION 16: HANDLING & INSTALLATION INSTRUCTIONS

16.1 HANDLING INSTRUCTIONS:

Before handling of equipment, ensure following:

- Suitable protective clothing should be worn.
- Both hydraulic and pneumatic system pressures bled down.
- All control valves in close position.
- Fluid tanks filler cap in place and tightly secured.
- Drip tray in base of skid is drained and plug is in place and tightened.
- All associated pneumatic / hydraulic hoses are suitably stored away.
- Control panel protective cover in place and properly fastened.
- Lifting set shackles securely fastened to frame lifting eyes with safety split pins in place. Units must only be lifted using the correct 4-leg lifting set provided.

Note:	Reference should also be made to Section 1.20 regards Safety and Potential Hazards identified at the Design Stage.

16.2 INSTALLATION INSTRUCTIONS:

Installation of the Well Control Unit in a workshop / platform is the responsibility of the equipment operator. However, the following should be taken into account:

- Unit to be placed on a level and firm surface which can hold the gross weight of the unit.
- The positioning of the unit with regards access for essential and non-essential maintenance.
- We recommend a minimum clearance distance of 1 metre all-round the unit.
- Routing of air and testing hoses from the unit to the equipment.
- The position of the control panel with regards operator access.

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16.3 SOURCE'S:

- Air supply

  - Minimum pressure 90psi. (100psi required for 10,000psi Hydraulic Pressure)
  - Maximum Pressure 120~150psi.
  - Maximum Flow Rate 195scfm.
  - Connection type, 1/2" Crows Foot.

- Hydraulic supply

  - NOT APPLICABLE

- Electrical power supply

  - NOT APPLICABLE

NOTE:

- Air supply should be clean and free from obvious water contamination. Preferably instrument quality.
- Control unit should be connected to a suitable air supply as above using a suitable air hose.
- Recommended size is 1/2" ID. Ensure air supply valve on control panel is OFF, and air regulators are turned fully anti-clockwise before connection of air supply.

SECTION 17

LIFTING SET

LIFTING SET P/N: 990037808 (W.L. L=8.6T)

1 set 4-legged wire rope consists of:

a) 1 pc 1-1/8" master link assembly.

b) 4 pcs of 2.0m x18mm/19mm wire rope slings.

c) 4 pcs of 3/4" bolt type anchor shackle.

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SECTION 18

DRAWING AND BILLS OF MATERIAL

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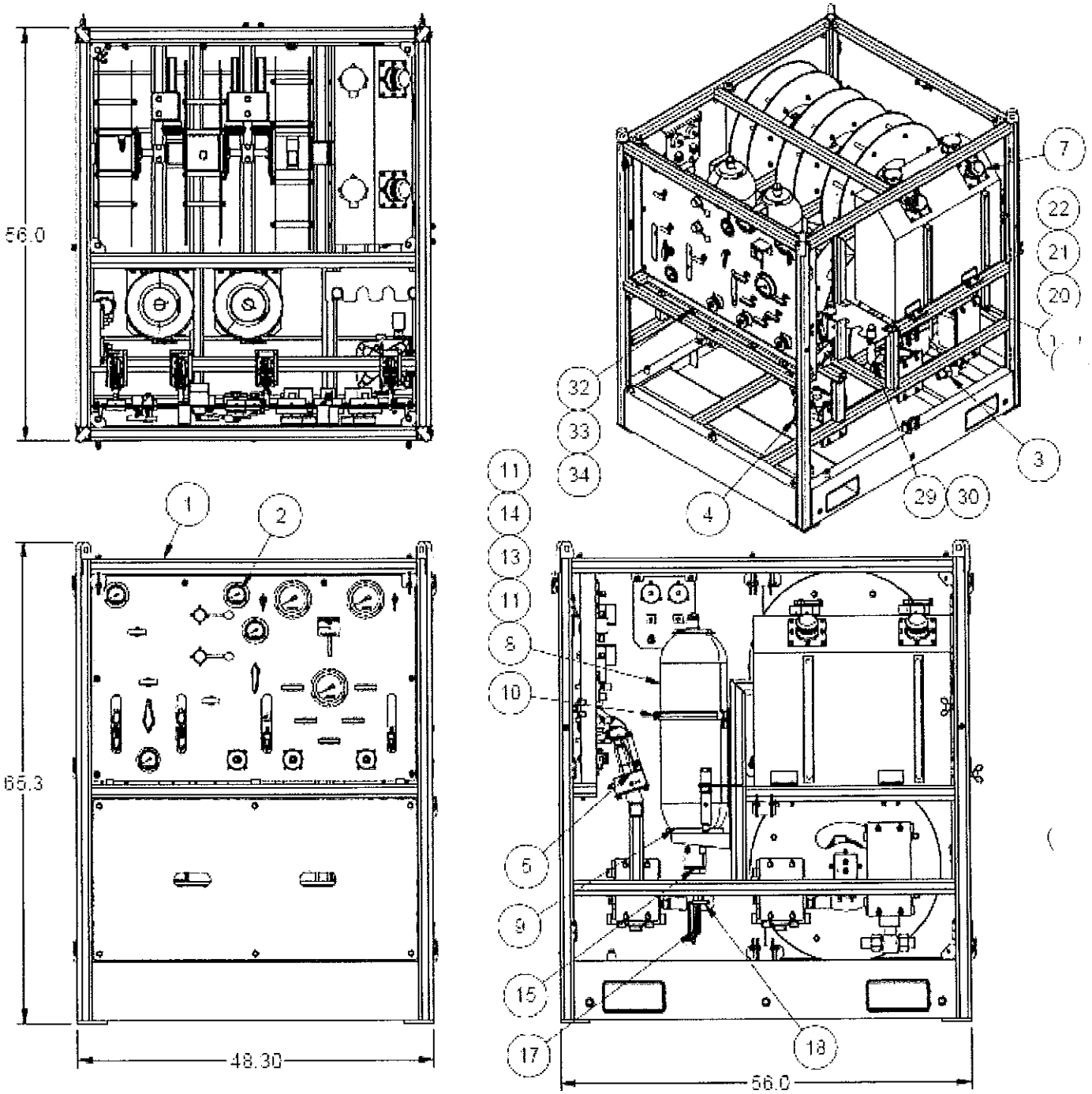
18.1 DRAWING



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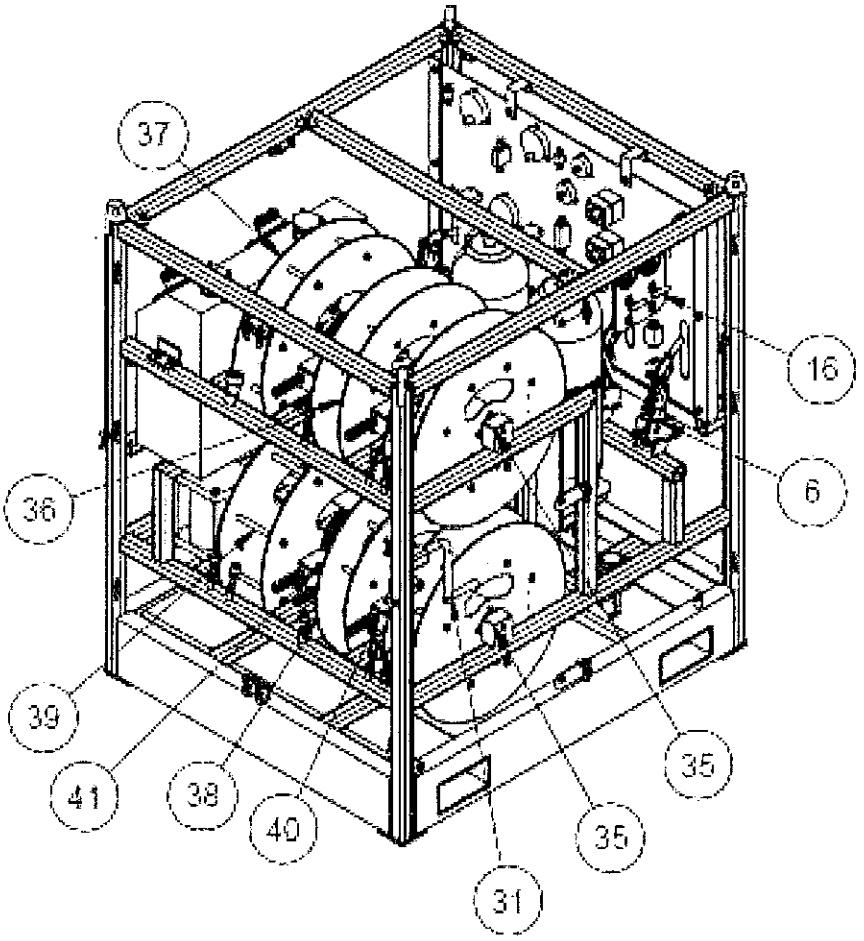

NOTE: COVER PLATES HIDDED FOR TO VIEW EQUIPMENTS.

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18.2 BILL OF MATERIALS

ITEM	PART NUMBER	DESCRIPTION	QTY
1	990063153	WELDED FRAME ASSY	1
2	990063154	CONTROL PANEL ASSY	1
3	990043509	LIQUID AIR DRIVEN PUMP	1
4	990038286	LIQUID AIR DRIVEN PUMP	2
5	990003304	20K HAND PUMP ASSY	2
6	990039620	10K HAND PUMP ASSY	2
7	990041410	OIL TANK ASSY	1
8	990037363	ACCUMULATOR	2
9	990019555	RUBBER SUPPORT RING	2
10	990018151	ACCUMULATOR CLAMPS	2
11	990011203	HEX BOLT	4
12	990003965	FLAT WASHER	8
13	990003966	SPRING WASHER	4
14	990003967	HEX NUT	4
15	990023341	ADAPTER FOR STD ACCUMULATOR	2
16	990056528	NIROGEN CHARGING SETUP ASSY	1
17	990004052	AIR FILTER	1
18	990037346	AIR FILTER U BOLT	1
19	990011313	HEX BOLT	28
20	990016365	FLAT WASHER	42
21	990003979	SPRING WASHER	14
22	990003978	HEX NUT	14
23	990025464	CROWFOOT	1
24	990001692	SNAP TITE NIPPLE VALVED	5
25	990001691	SNAP TITE COUPLER VALVED	5

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ITEM	PART NUMBER	DESCRIPTION	QTY
26	990001611	QUICK CONNECTION BOX END	1
27	990063485	SNAP TITE COUPLER VALVED	2
28	990063486	SNAP TITE NIPPLE VALVED	2
29	990063487	HIGH LOW-PRESSURE SENSOR ALARM VALVE	2
30	990058346	LOCK NUT F/HIGH-LOW PR. SENSOR	2
31	990043174	HANDLE FOR REWINDING MECHANISM	1
32	990041466	CLAMP FOR HAND PUMP LEVER FIXING	4
33	990015235	BHCS	4
34	990032486	LOCK NUT	4
35	990057605	RIGHT HAND TWIN HOSE REEL ASSY	2
36	990041403	RIGHT HAND SINGLE HOSE REEL ASSY	1
37	990038321	LEFT HAND SINGLE HOSE REEL ASSY	1
38	990018012	RIGHT HAND HOSE REEL ASSY	1
39	990063628	LEFT HAND TWIN HOSE REEL ASSY	1
40	990043087	RHS REWIND MECHANISM ASSY	2
41	990043086	DOUBLE REWIND MECHANISM ASSY	2
42	990004940	1/2" ID x 60FTAIR HOSE	1
43	990039766	1/4" ID x 150FT SB HOSE	1
44	990056612	3/8" ID x 75FT BOP HOSE	4
45	990063683	1/4" ID x 100FT TEST LINE HOSE	1
46	990063687	1/4" ID x 150FT SV/MV HOSE	2
47	990037808	LIFTING SLING SET ASSY (W.L.L=8.6T)	1
48	990042217	NAME PLATE	1

9. Control Panel

What is Control Panel
Have series of pump and gauges that use to control the equipment and the well head

What is the purpose of Control Panel
To control BOP, stuffing box, safety valve, Master valve and test line (15 000 working Pressure)

How to operate Control Panel
Connect the control line to the equipment. Open the air supply. Use the regulator to control pump and pressurized the line

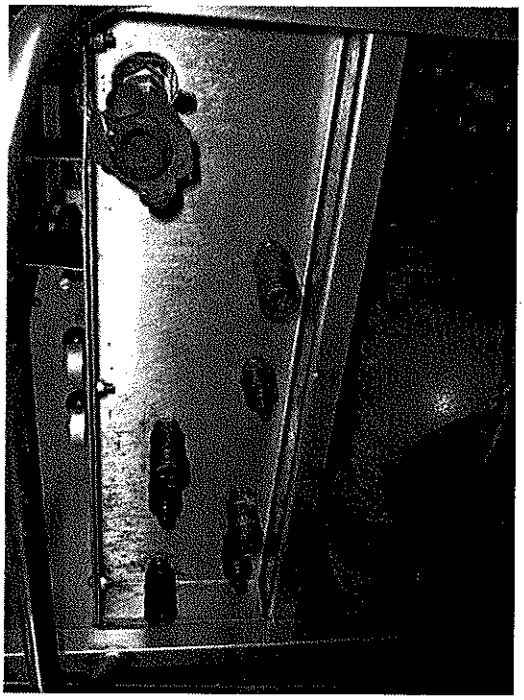
What is maintenance required for Control Panel
* check hydraulic fluid level
* check low pressure warning system
* Disassembly air filter and clean throughly
* check hydraulic hoses and ends for any sign of leakage or damage

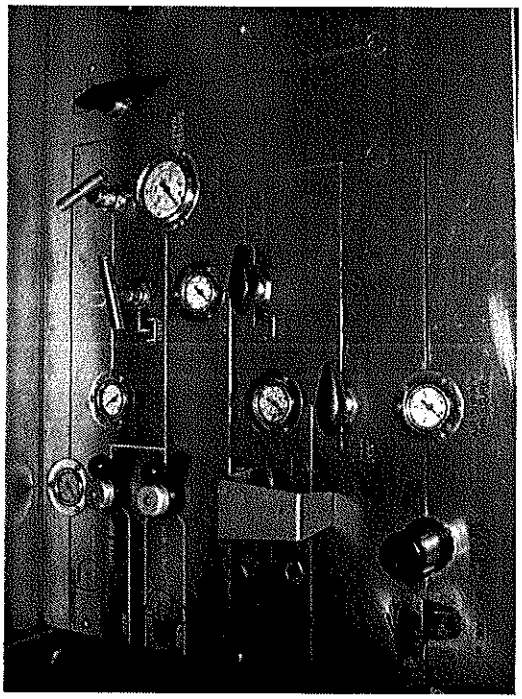
What is safety precaution required for Control Panel
* Do not try to tighten or loosen connections under pressure
* Beware of trapped pressure. Bleed off fully before dimasting any connections.
* Make sure valves and regulators are in correct position

What is potential hazard during handling Control Panel
* Hose burst

Draw & name each part of Control Panel

Wireline Control Panel





10. Huskel ~~Drum~~ Pump

What is Huskel Drum

* Air driven pump
* convert compressed air into hydraulic power, satisfying any application need for pressurizing up a component and holding it at a set pressure for any sustained period of time.

What is the purpose of Huskel Drum

* To drive hydraulic / water in Control Panel or test pump
* Stall when they reach a pre-determine pressure and maintain that pressure for duration of operation without consuming power.

How to operate Huskel Drum

* Operate from the knob or regulator at the panel
* Its function is to allow the hydraulic piston to reciprocate without passing fluid into the drive section
* The liquid, its pressure and its temperature determine real specification.
* A distance piece can be incorporated between drive and hydraulic section for complete contamination - free operation on most huskel pump.

What is maintenance required for Huskel Drum

- Service huskel pump
- Change O-ring
- Hydraulic Check Valve and liquid seal repair
- Servicing External pilot stems.

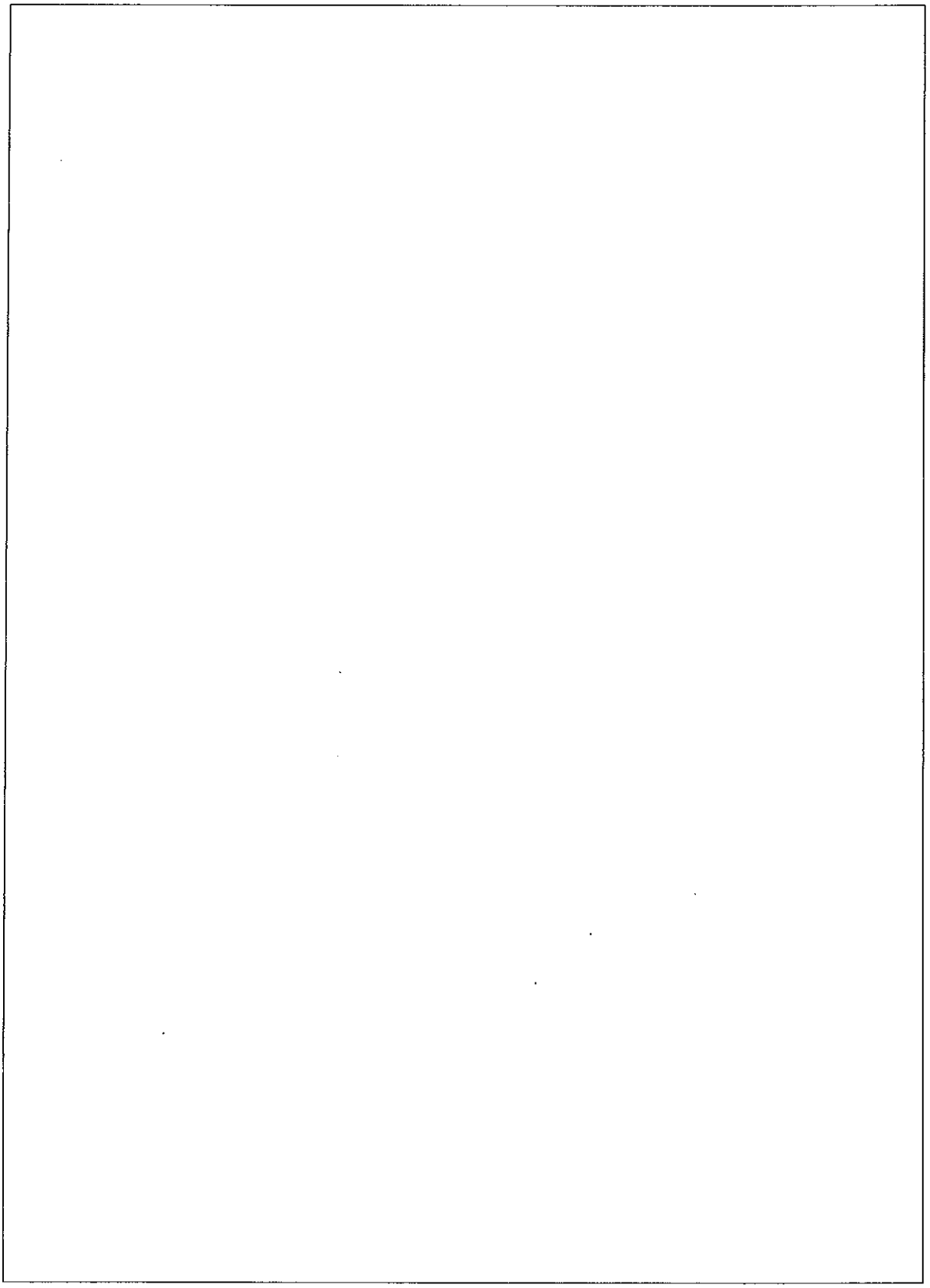
What is safety precaution required for Huskel Drum

- Ensure O-ring in good Condition
- Ensure tubing Connection in good Condition

What is potential hazard during handling Huskel Drum

- Pinch point

Draw & name each part of Huskel Drum



11. Power Pack (Electrical & Diesel)

What is Power Pack
- Diesel driven
- certified zone 2
- Approved to carry out on drilling rig on production platform
- maintenance

What is the purpose of Power Pack
- Introduce power to wireline Unit, Wireline Mast,
- To provide and supply the hydraulic power to reel skid unit.

How to operate Power Pack
- Before start or running power pack make sure top up diesel and check water coolant
- make sure the filter fully tighten to avoid leak
- pump hydraulic to 3000 psi before start the power pack

What is maintenance required for Power Pack
- change gearbox, fuel and hydraulic filter
- change coolant and radiator hose
- service fuel tank and radiator
- change filter O-ring

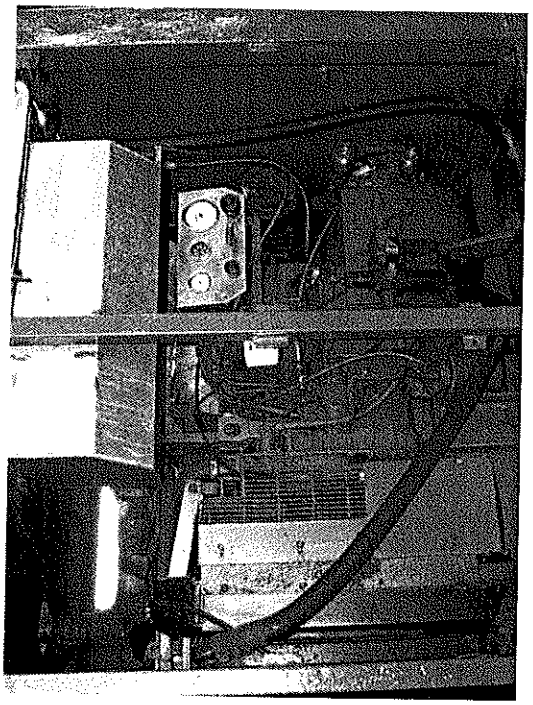
What is safety precaution required for Power Pack
- Use a suitable glove when change the hydraulic oil
- Make sure all the coolant and radiator hose fully tighten to avoid leak
- Do not open radiator cap while the power power is running

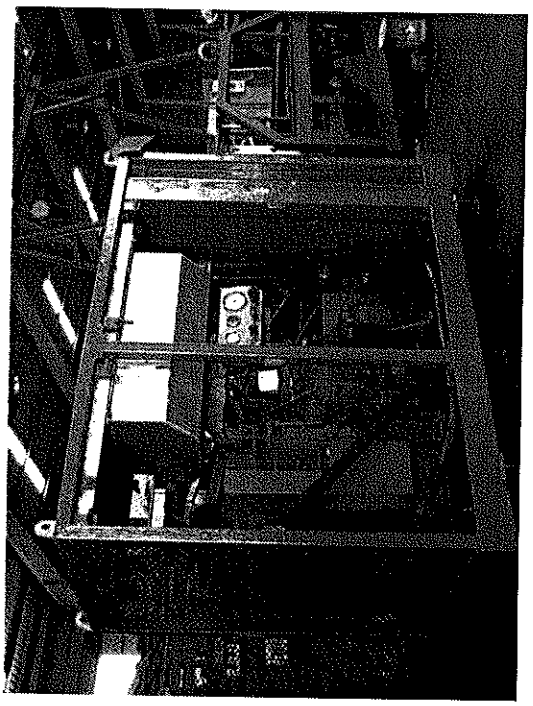
What is potential hazard during handling Power Pack
- Hand or finger injury

Lennon Chung

Draw & name each part of Power Pack

Power Pack





12. Air Compressor

What is Air Compressor
Is a device that converts power (using an diesel engine) into potential energy stored in pressurized air (compressed air) and device that raises the pressure of air or natural gas.

What is the purpose of Air Compressor
- Supply air to Control Panel and Single Well Control Panel

How to operate Air Compressor
- Same procedure how to start the powerpack and usually use spring ~~start~~ starter
- To crank the starter, make sure rotate the shaft clockwise until indicator turn into red.
- Release the spring to start the air compressor.

What is maintenance required for Air Compressor
- Change filter or checking the air filter element
- Change compressor ~~oil~~ pump oil
- Bleed water from diesel tank
- Oil should not exceed the halfway point of sight glass
- oil leak inspection
- check for weird noise and vibration.

What is safety precaution required for Air Compressor
- make sure the hose connections has no leaks.
- Ensure engine overspeed fully functioning

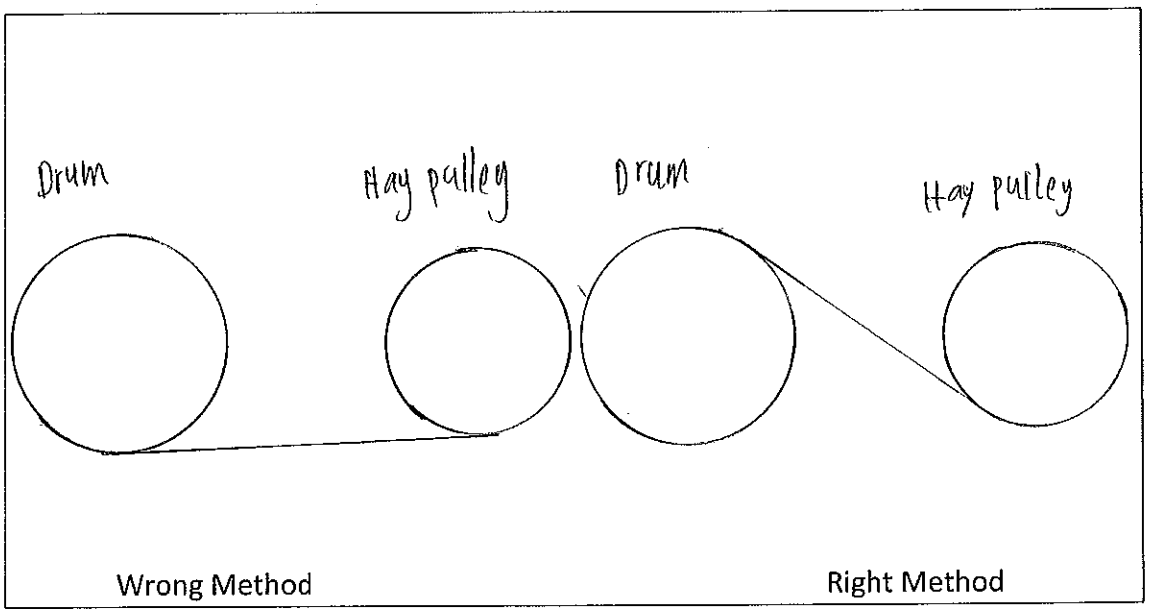
What is potential hazard during handling Air Compressor
- pinch point
- Hose burst

Draw & name each part of Air Compressor

13. Drum

What is the purpose of Drum
To spool in and spool out wireline wire

Do the right and wrong wire arrangement from drum to hay pulley



What is maintenance required for Drum
- drum and wire must be wrap to make sure the wire does not have any scratched or kinked
- Make sure the drum bearing service and change if there have any broken or damage.

What is safety precaution required for Drum
- Make sure using the safety glasses and safety glove, and full PPE when arrange the wire from drum to hay pulley
- use tag line or push pull stick to guide equipment instead of hand

What is potential hazard during handling Drum
- Pinch point
- Back injury
- Hand crush by falling wire drum due to failure lifting equipment

Please draw/sketch the toolstring configuration for:

1) Drift run/tubing clearance check
2) Sinker bar run
3) Set and retrieve plug
4) Set and retrieve insert valve

Toolstring

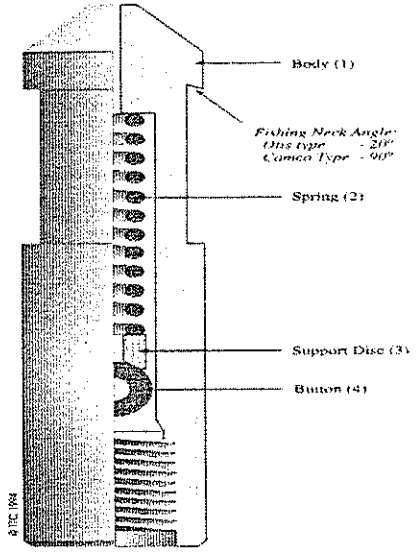
ROPE SOCKETS

The Rope Socket is required to make the connection between the wireline and toolstring.

Types in most common use:

- 0.092" regular knot type.
- 0.092" / 0.108" / 0.125" no-knot type (teardrop).
- $^{3}/_{16}$" braided.

0.092" Regular Knot Type



TOOLSTRING COMPONENTS

The basic toolstring components are shown here.

The diameters in most common use are 1 $^{3}/_{8}$" and 1 $^{7}/_{8}$", but toolstring components are also available in 1", 1 $^{1}/_{4}$", 2 $^{1}/_{8}$", and 2 $^{5}/_{8}$" diameters.

Rope Socket	Provides a link with the wireline.
Swivel Joint	Attached between the rope socket and stem if required.
Stem	To add weight / mass to the toolstring to overcome well pressure and friction, and provide impact downhole.
Upstroke Jars	Attached here if required.
Mechanical Jars	To provide a means of generating impact.
Knuckle Joint	Attached here if required.

Attach the required tool to the bottom of the jars or knuckle.

What is Rope Socket

- Slickline Rope Socket is designed to attach the wire to the toolstring. The slickline Rope Socket incorporates robust feature which is designed to maintain form and ensure continuous performance.

The Purposed of Toolstring.

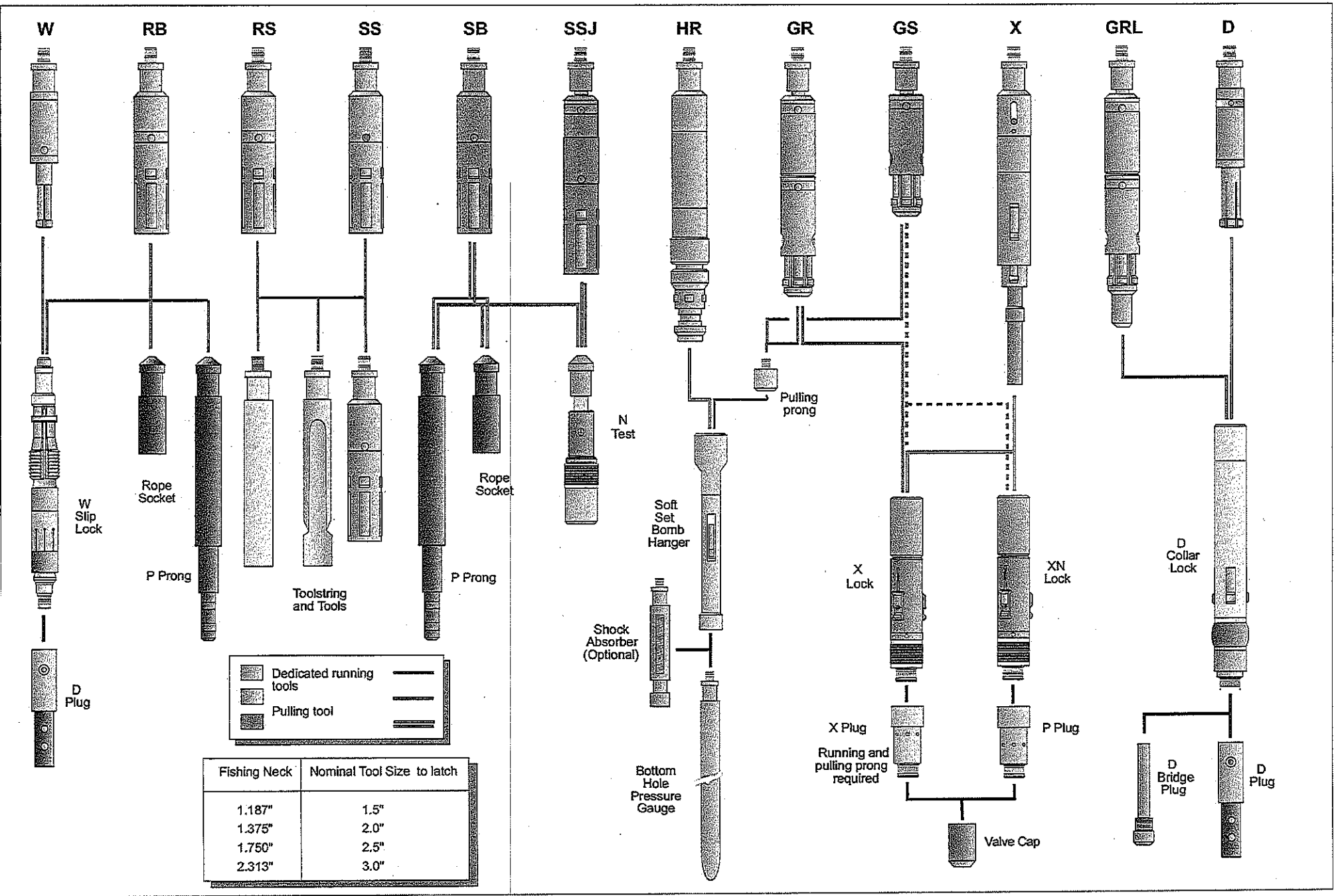
Purpose.

- Rope socket is connected to Toolstring. It designed to hold the toolstring running / pulling into the well.
- The swivel joint is for toolstring more flexibility to toolstring rotating while pulling / running in hole.
- Stem is to provide the weight of the toolstring and giving a weight impact while jarring down / up.
- Link jar is to provide a generating impact while jarring up and down.
- Knuckle join to generating the tool bending while run in hole or at tubing accessories.
- Hydraulic Jar to provide a generating impact while jarring up ward. Especially to retrieve a stuck tool or fishing operation.

Toolstring Maintenance

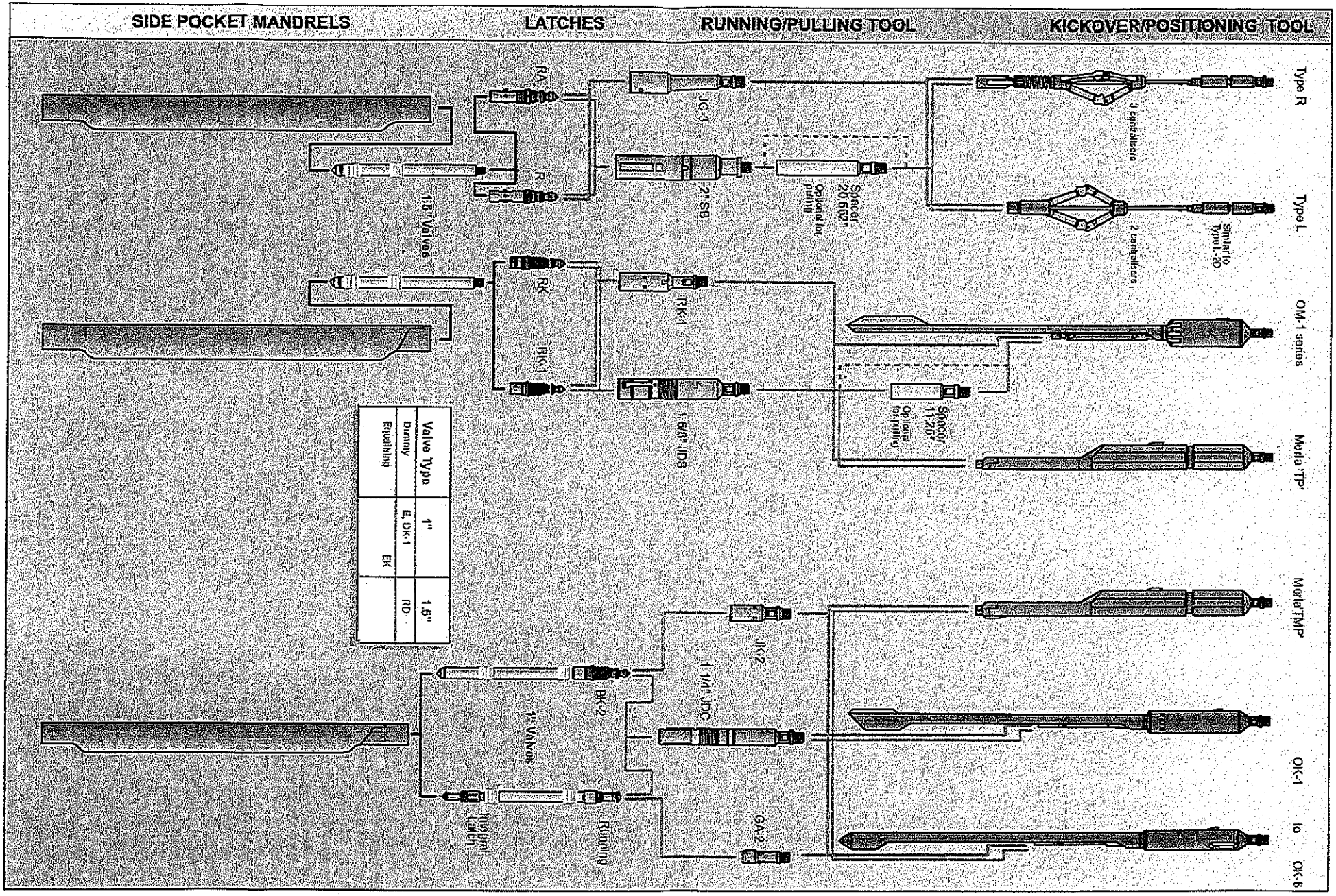
- Check the Body condition.
- Check the Fishing neck OD.
- Check the Thread condition.
- Rope socket check the components replace if required.
- Hydraulic jar check all the O-ring, Grab screw, Tapelon seal

SLICKLINE TOOLCHART : PULLING/RUNNING TOOL

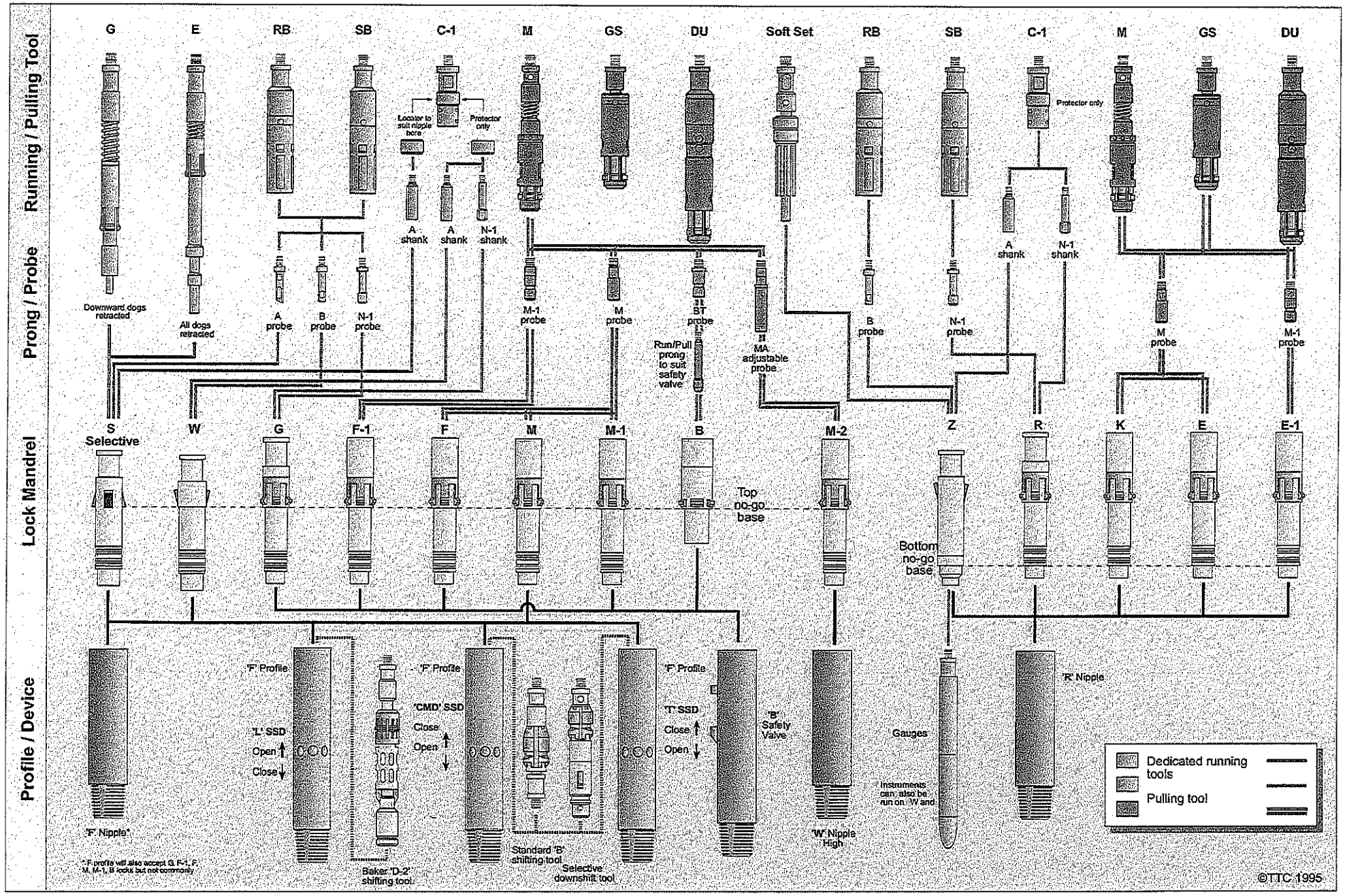


Fishing Neck	Nominal Tool Size to latch
1.187"	1.5"
1.375"	2.0"
1.750"	2.5"
2.313"	3.0"

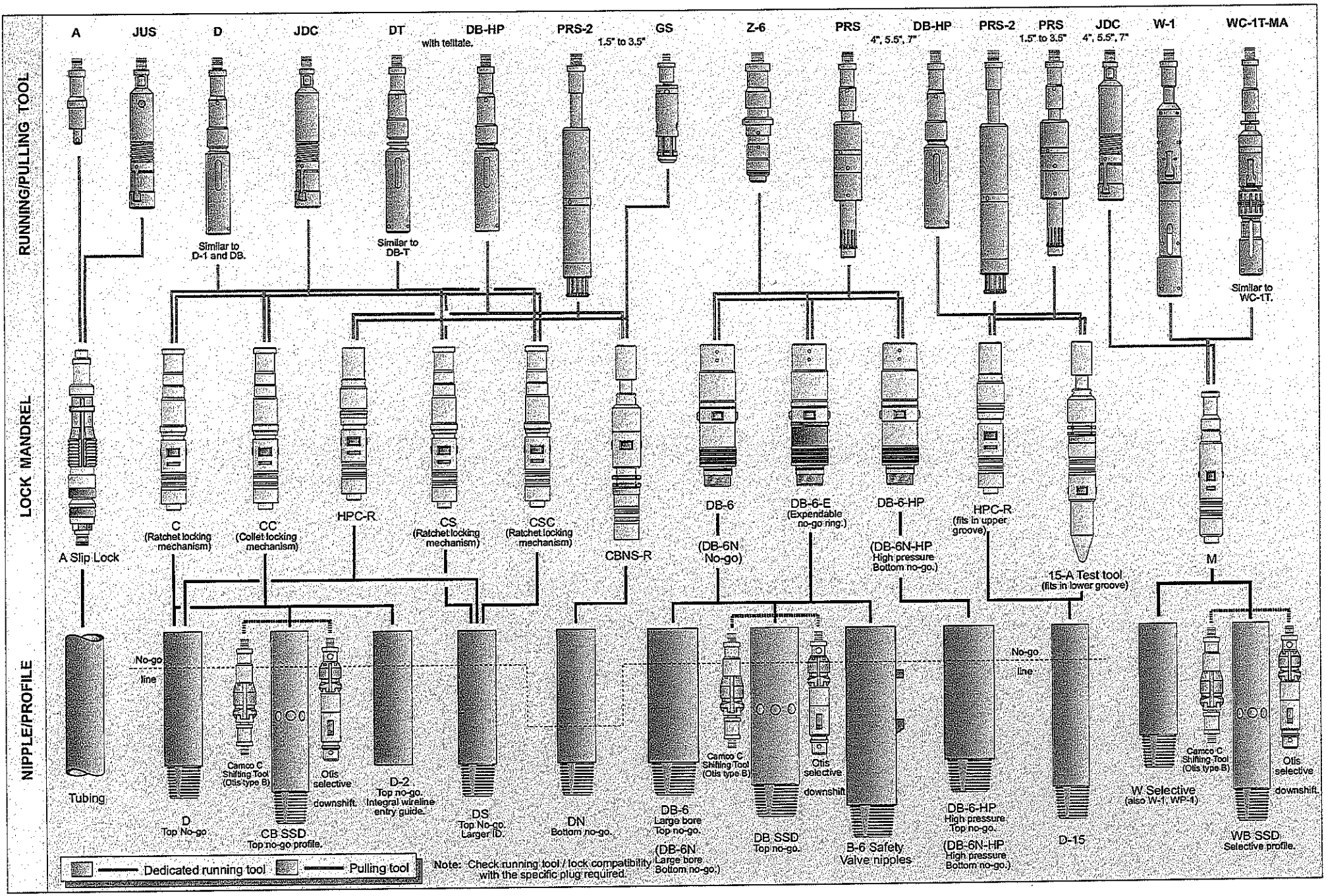
SLICKLINE TOOLCHART : GASLIFT TOOLS



SLICKLINE TOOLCHART : BAKER TOOLS



SLICKLINE TOOLCHART : CAMCO TOOLS



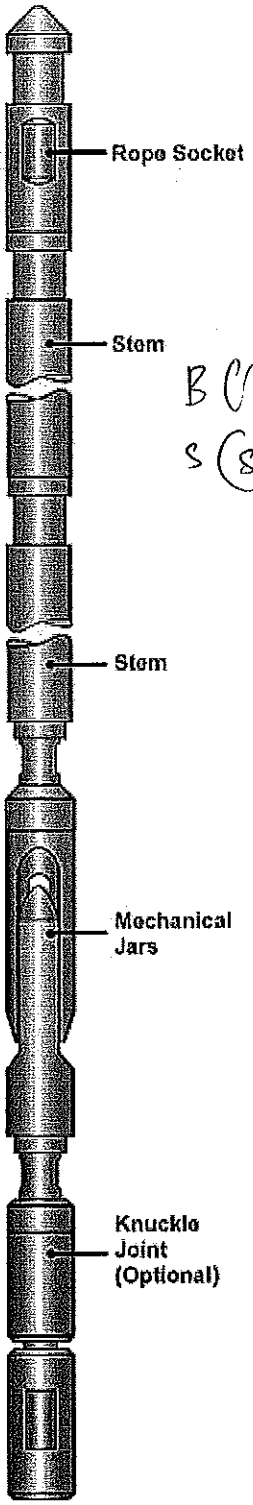
C. DOWNHOLE EQUIPMENT

1. List out all basic running and pulling tools

SM : Used mainly to pull gasslift valves

No.	Items
1	~~Rope Socket~~ SB (Long Core, short reach)
2	SS (Short core, Long reach)
3	SM (Intermediate core, intermediate reach)
4	RB
5	RS
6	RJ
7	JDC
8	JDS
9	JDL
10	JUC
11	JUS
12	JUL
13	GS
14	GR
15	GU
16	
17	
18	
19	
20	

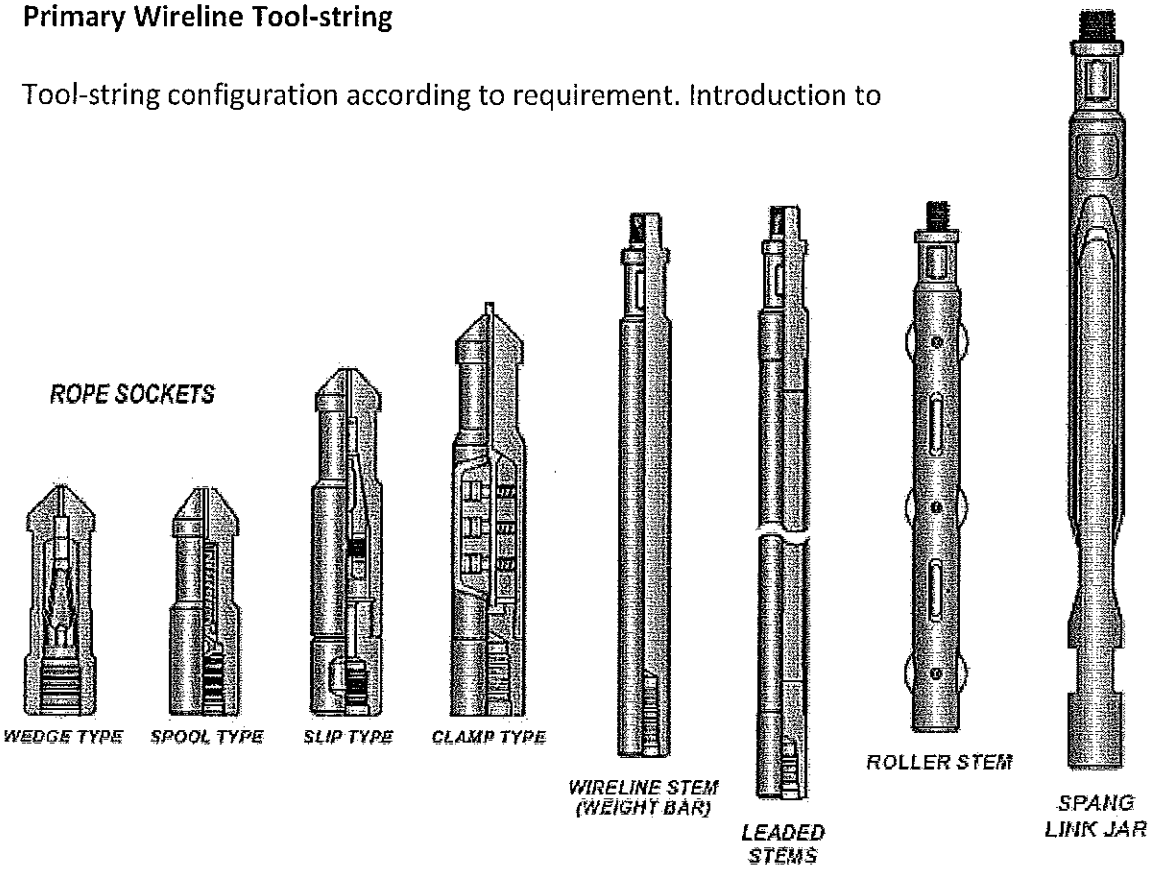
*GS + GU = GR



B (Long Core)
S (Short Core)

Primary Wireline Tool-string

Tool-string configuration according to requirement. Introduction to



a) rope sockets
* To attach the wireline to the toolstring
* Is designed to hold the toolstring running / pulling into the well

b) stem lead
* To provides the weight of the toolstring and giving a weight impact while jarring down / up.
* To provides weight to the toolstring to enable the wire to run into the well against well pressure and stuffing box friction

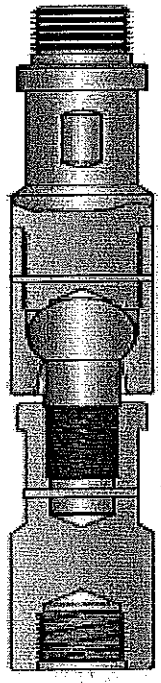
wax cut
c) tungsten stem
* is primarily used to substitute standard stem in higher pressure application to enable the wire or cable to run into the well against pressure and friction

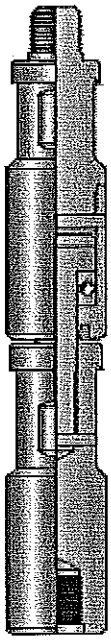
high deviation
d) roller stem
* Is a valuable, ~~xxxx~~ sometimes essential, addition to toolstrings for deviated well to reduce the frictional losses against the tubing wall.

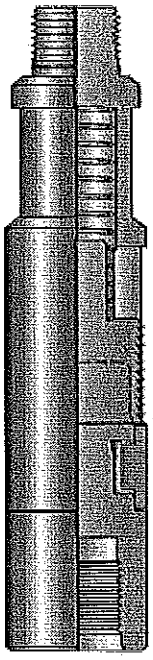
lencongan

Bole putuskan pin dan untuk keluarkan toolstring

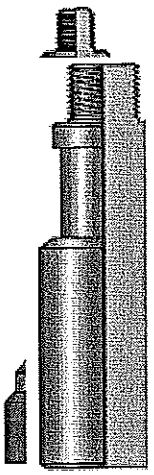
e) jars
* Is to provide a generating impact while jarring up and down


KNUCKLE JOINT


WIRELINE SWIVEL JOINT


QUICK LOCK COUPLING

f) knuckle joints,
* To generating the tool bending while run in hole or at tubing accessories
- Are used to add flexibility to the toolstring and should be used in deviated wells


TU CUT
BLIND BOX

g) swivel joints,
* Is for toolstring move flexibility to toolstring rotating while pulling / running in hole.
* Designed with a bearing to permit the easy rotation of the toolstring, even under loads as tools move in / out of the well

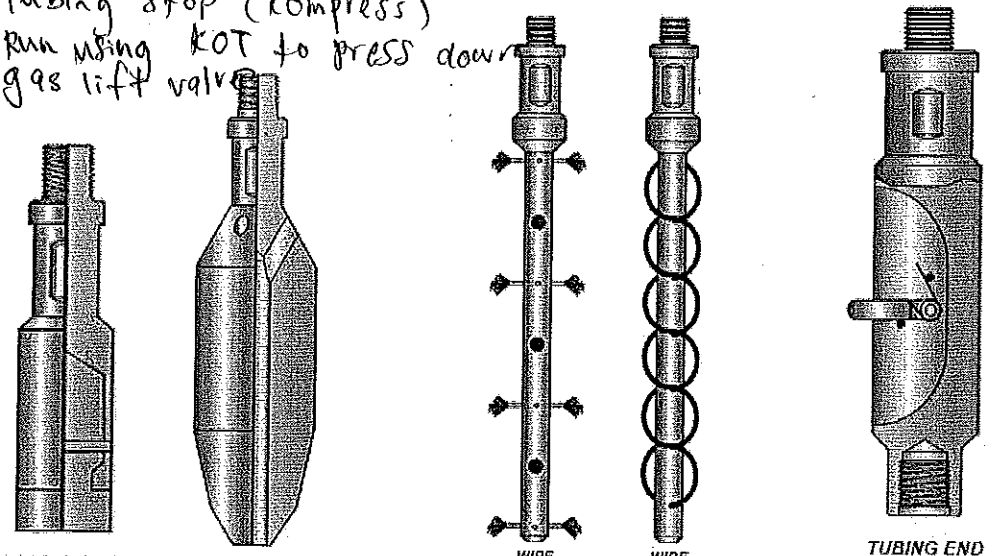
h) quick-lock coupling
* Quick lock system
* Speed of the toolstring assembly
* Higher strength than sucker rod connection
* Prevent possibility of unscrewing downhole

i) gauge cutter,
* To check the tubing internal diameter
* To tag the total depth
* To locate the nipple ID and No Go nipple
* to locate restriction
* To cut the sand, scale, paraffin and other deposits from the tubing
* To determine the profile of the bridge

j) Blind Box

- Is used when heavy downward jarring is required to dislodge a fish, or push something down town the hole. It is flat on the bottom and hardened to reduce wear and damage

* to cut wire
* Tubing stop (compress)
* Run using KOT to press down gas lift valve



use for rutfin job

k) lead impression box
* Uses to obtain a picture of down hole blockage or debris

l) swage
* Is devised to effectively open out any sections of tubing that may have been crimped or damaged which may restrict the effective ID and access to the well bore.

- To clear HUD

m) wire scratcher
* is a wireline tool used to loosen paraffin (wax) accumulation from the inside wall of the tubing

n) tubing end locator
* Is a device used to locate the end of a specific size of completion string or broken tubing in order to confirm its accurate position in the wellbore for further depth-critical intervention work
* to locate the end of tubing

o) wire recover tool
Fishing ~~wire~~ Tools * Wire finder

Fill up below Table

A. Size of Wire that use at DB	B. Breaking point of each wire
1. 0.108	1. 2500 lbs
2. 0.125	2. 3300 lbs
3. 0.140	3. 4050 lbs
C. Type of wire used at DB	**D. How to test if wire is good or not**
1. Zeron	1. Wire pull test
2. ELPS	2. Torsion test
3.	3.

E. Why do we need to check on the tools before running in hole (RIH)?
- To ensure tool does fully function

F. What do we need to do if the tool is damage or lost in hole?
- Stop work and consult to wireline supervisor
- Prepare job plan and prepare tool for fishing plan.

G. What do we need to do if equipment failed to work?

- Report to Wireline Supervisor
- Report to office
- Minor troubleshoot

D. Rig up Wireline Surface Equipment

a. List out all surface equipment (Surface and Pressure Gauge)

1. Wireline Mast
2. Reel Skid Unit
3. Power Pack
4. Air Compressor
5. Wellhead Control Panel
6. Control Panel
7. Gin Pole complete with hoisting Unit
8. Stuffing box
9. Lubricator
10. Quick Test up
11. BOP
12. Ball Valve
13. Wellhead Crossover

b. Describe how to connect lubricator section

i) Horizontal

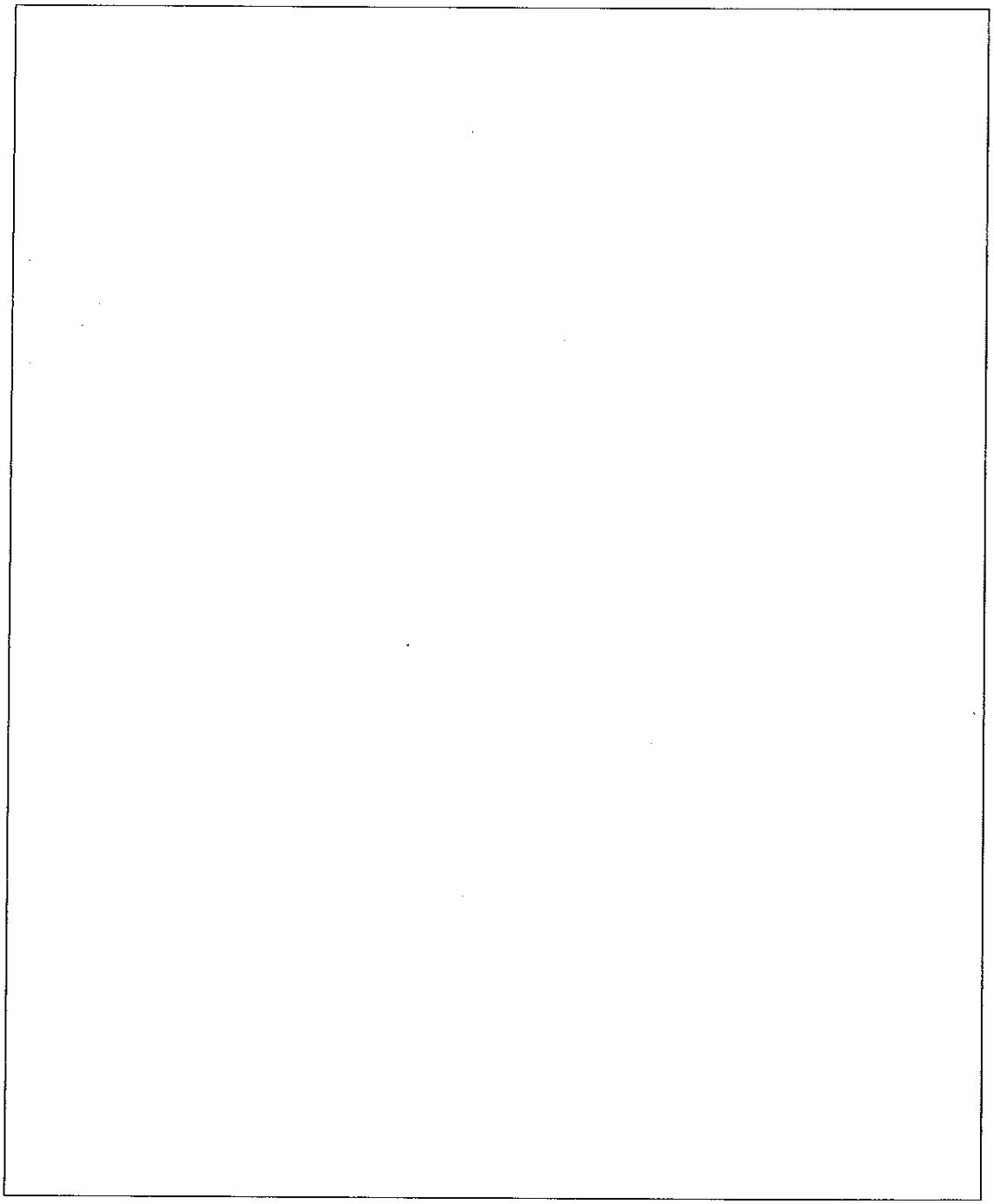
Lay down using trolley and stand. Use ~~rope~~ sling or rope and connect lubricator to other PCE ~~equip~~.

ii) Vertical

Align the pin to box perfectly to avoid damaging the O-ring

Note: Provide drawing and parts description on separate paper/page

c. Sketch the equipment required while rigging up from x-mas tree until stuffing box

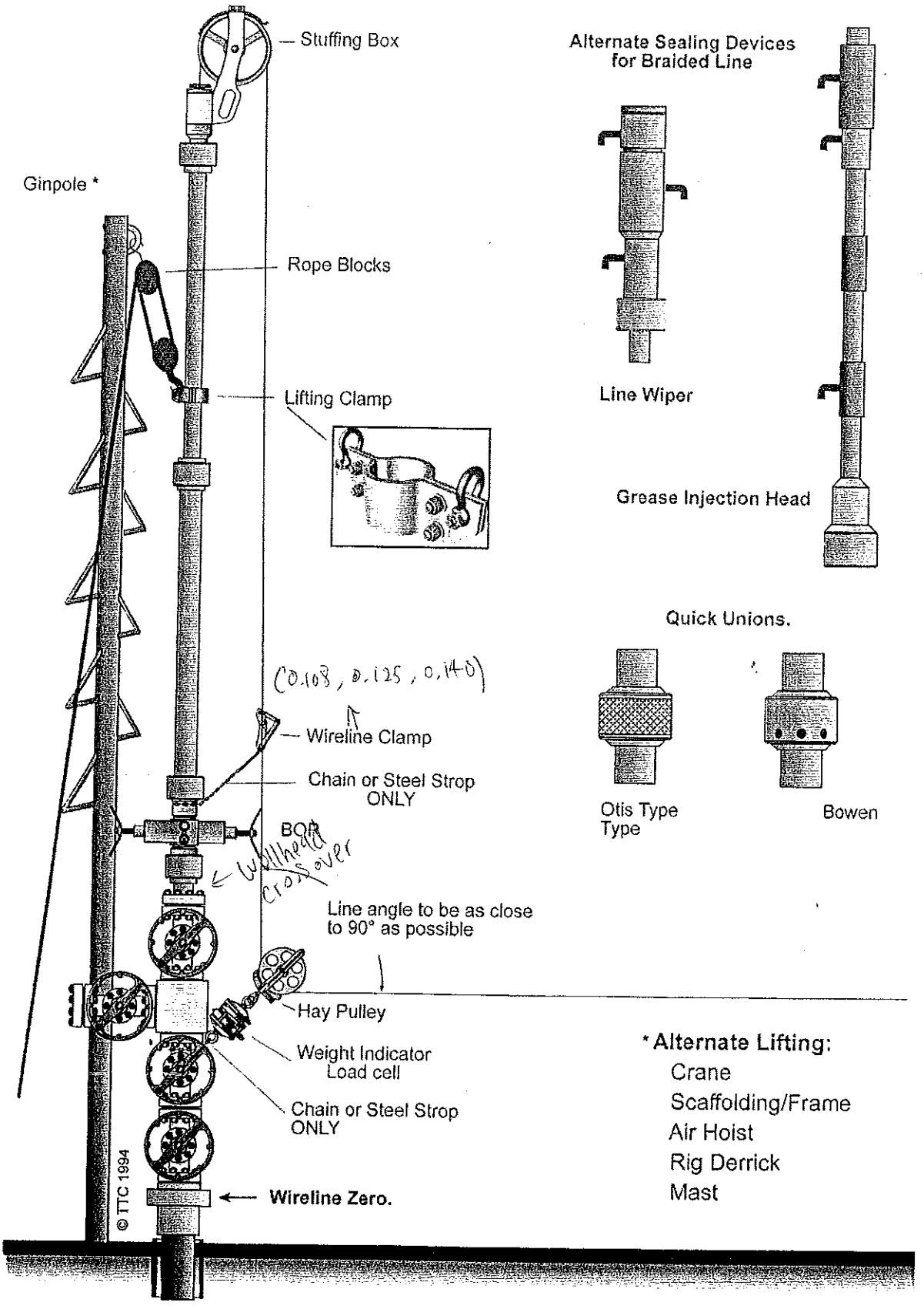


Note: Provide drawing and parts description on separate paper/page

d. What should weight indicator attached with?

The sensing load cell is attached to the xmas tree by a chain, and a heavy duty hose carried the pressure generated to the fluid filled pressure gauge which is calibrated in lbs, kgs

WIRELINE SURFACE EQUIPMENT



e. What is the meaning of rigging up and rigging down?
Rig Up - prepare equipment for operation (SE, PCE, DHT)
Rig Down - Dismantle equipment for demob or move to another location

f. What is power pack hose size used at Dimension Bid?
[redacted], 1 7/8" inch and 1 1/2" inch, 1 inch"

g. What are the safety precautions required upon completed hook up hydraulic hose to RSU
* Make Sure Whip Check
* Make Sure the Connection of hose IS tight

h. List out the safety precaution while rigging up and rigging down
* Use full PPE
* Plan before start Operation
* Follow Job Procedure
* Work with Good Posture

Note: Provide drawing and parts description on separate paper/page

DIMENSION BID
WELL INTERVENTION | PERFORATION SERVICES

Slickline Assistant Task Assignment (Onshore / Base)

Instruction:
1. This is to be filled in by Assessor
2. Task assignment is given according to personnel needs to fulfil his CMS or areas of low skill.

Name:	Lennon Chung	Designation:	Slickline

Date	Assignment/Summary Job/Duration	Assessor Comment	Assessor Signature & Date
7/05/19	Stuffing Box	Very Good understandi	
7/5/19	Lubricator	Very Good understandi	
8/5/19	BOP (Blow out preventer)	Very Good understandi	
8/5/19	X-Mas Tree (Wellhead)	Very Good understandi	
9/5/19	RSU (Reel Skid Unit)	Very Good understandi	
9/5/19	Power Pack (Electrical & Diesel	Very Good understandi	
10/5/19	Control Panel	Very Good understandi	
13/5/19	Basic Toolstring	Very Good understandi	
14/5/19	Pulling / Running Tools	Very Good understandi	
15/5/19	Service of basic wireline tools	Very Good understandi	
23/5/19	Wireline Wire	Very Good understandi	
24/6/19	Operate the control panel	Very Good outstandi	
~~25~~/7/19	Lubricator Assembly	Very Good outstandi	
17/6/19	Inspection / Maintenance of Tools	Very Good outstandi	
25/6/19	Spooling Device and Drum	Very Good outstandi	
4/7/19	Operating the BOP / Lubricator assembly	Very Good outstandi	
8/7/19	Set plug using X-line Running tools	Very Good outstandi	
9/7/19	Make Rope Socket and toolstring configuration	Very Good outstandi	
10/7/19	Learn how to install melon to plug by Pak Pardomuan	Good job	