

**PART A
INVITATION TO BID**

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF ESKOM HOLDINGS SOC LTD					
BID NUMBER:	OLT2053367	OPENING DATE:	22 Nov 2022	CLOSING DATE & TIME:	5 Dec 2022- 23:00
DESCRIPTION	Specifications: Rotating Union Replacement: Replacement of the two pipe assemblies that contain the rotating unions, pressure testing and the fitment to the servo motor hydraulic supply line thereof.				
DELIVERY ADDRESS	Drakensberg Pumped Storage				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).					

BID RESPONSE DOCUMENTS MAY BE SUBMITTED VIA: Informaltendering@eskom.co.za

Please note the following rules with respect to the OLT2053367 system (Informal Tendering)

- Use the **OLT** reference pertaining the line item you wish to tender for and submit each **OLT** separately.
- Please **ensure that the email subject line only contains the OLT Enquiry number heading and no other information**. Do not add any text to the subject line. Do not add any space in between the prefix and the enquiry number.
- Ensure that the **OLT** enquiry number is stipulated in the subject line on all e-mails if multiple emails are sent
- Ensure that you receive a confirmation email after submitting your documentation. Please follow up immediately via the email address of the respective buyer if you did not receive this.
- Maximum attachment size per email is **10MB**. It is the supplier's obligation to ensure that the attachments per email do not exceed this limit.
- Please note closing date and time on the OLT. Your submission will not be evaluated if it is received after the closing date and time of the OLT.
- All tender returnables/documentation must be submitted to Informaltendering@eskom.co.za only.
 - E-mails to any other address (except for clarifications) will not be accepted.
 - Failure to comply with these rules will result in your tender being disqualified.
- Requests for Clarifications must be sent in writing via email to mabasosz@eskom.co.za and not to Informaltendering@eskom.co.za. All requests for clarifications and responses must be in writing. Eskom will respond to requests for clarification received within **three (3) working days** before the tender closing deadline, depending on the enquiry duration and complexity.
- Please see Part C for returnables to be submitted with offer**

Note:

- Due to varying requirements, slight changes could be included in each RFQ document, and suppliers are therefore required to read through the document carefully whenever invited to tender.
- ALL Suppliers are required to be registered (except foreign suppliers) on the National Treasury Central Supplier Database (CSD) as at tender response stage and the respective CSD number must be provided with all quotes together with the Eskom vendor registration number. Responses that do not comply with the CSD requirement will be regarded as non-responsive (except foreign suppliers). For CSD registration: Please register at <https://secure.csd.gov.za/>
- All Suppliers (including foreign suppliers) are required to complete SBD 1-Invitation to Bid and submit this annexure at tender closing deadline. Local suppliers are required to be tax compliant and must submit CSD Number/ Efiling pin number/ copy of tax clearance certificate as evidence of their tax compliance status.
- Foreign suppliers (even those with no footprint in RSA) are in addition required to answer Part B (3) which is part of the afore-mentioned SBD 1. Should the said foreign suppliers answer "yes" to any of the questions [Part B (3)]; they are required to be tax compliant and must therefore submit their Efiling pin number or copy of tax clearance certificate which will be verified by Eskom.
- All suppliers are required to refer to www.eskom.co.za for the Supplier Integrity Pact that must be downloaded and read. The Integrity Pact Declaration annexure A (attached hereto) named Supplier Declaration Form is a mandatory tender returnable.
- Specify line prices at lines where prices are submitted and indicate no quote at lines where no price is submitted. Refer Part D
- Where "designated sectors" are applicable, ensure that the relevant annexures and declarations are submitted by the OLT deadline, or the submission will be regarded as non-responsive and disqualified.
- You are also required to complete and submit the attached deviation form along with your quotation at OLT closing deadline. If there are deviations, but the deviation schedule has not been completed and/or returned with your quote, your offer will be will be disqualified.

SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
TCS PIN:		CSD No:			
ESKOM VENDOR NUMBER					
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX]	<input type="checkbox"/> Yes <input type="checkbox"/> No	B-BBEE STATUS LEVEL SWORN AFFIDAVIT		<input type="checkbox"/> Yes <input type="checkbox"/> No	
IF YES, WHO WAS THE CERTIFICATE ISSUED BY?					
AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA) AND NAME THE APPLICABLE IN THE TICK BOX			<input type="checkbox"/>	AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA)	
<input type="checkbox"/>	A VERIFICATION AGENCY ACCREDITED BY THE SOUTH AFRICAN ACCREDITATION SYSTEM (SANAS)				
<input type="checkbox"/>	A REGISTERED AUDITOR				
	NAME:				
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/SWORN AFFIDAVIT(FOR EMEs& QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?		<input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED? <input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ANSWER PART B:3 BELOW]	
PRICING					
TOTAL TENDER PRICE, EXCLUDING DELIVERY					
TOTAL TENDER PRICE INCLUDING DELIVERY BUT EXCLUDING VAT					
TOTAL TENDERED PRICE, INCLUDING VAT					
ARE DELIVERY CHARGES INCLUDED IN THE PRICE		Yes _____		No _____	
OFFER VALIDITY PERIOD		(Minimum 30 days)			
ARE THE PRICE/S FIXED AND FIRM?	Yes _____	No _____	RATE OF EXCHANGE:	FOB VALUE:	Freight Insurance:
			_____	_____	_____
DISCOUNT:		TRADE _____		(2) SETTLEMENT _____	
DO YOU ACCEPT ESKOM HOLDINGS SOC LTD GENERAL CONDITIONS OF PURCHASE?		Yes _____		No _____	
The invitee/tenderer hereby confirms that a copy of the Integrity Pact was obtained, that it understands the provisions thereof and, undertakes to abide by the provisions thereof in any dealings it may have with Eskom and that the signed Integrity Pact Declaration is submitted as a tender returnable by the stipulated deadline.					
SIGNATURE OF BIDDER		DATE			
CAPACITY UNDER WHICH THIS BID IS SIGNED (Attach proof of authority to sign this bid; e.g. resolution of directors, etc.)					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:					
DEPARTMENT/ PUBLIC ENTITY		Eskom Holdings SOC Ltd			
CONTACT PERSON		Sandisiwe Mabaso			
TELEPHONE NUMBER		N/a			

FACSIMILE NUMBER	N/a
E-MAIL ADDRESS	mabasosz@eskom.co.za

PART B
TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:

- 1.1. BIDS MUST BE SUBMITTED BY THE STIPULATED TIME TO THE CORRECT EMAIL ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
- 1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED VIA TO Informaltendering@eskom.co.za AS PER SUBMISSION INSTRUCTIONS DETAILED IN PART A
- 1.3. BIDDERS MUST REGISTER ON THE CENTRAL SUPPLIER DATABASE (CSD) TO UPLOAD MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS; AND BANKING INFORMATION FOR VERIFICATION PURPOSES). B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE MUST BE SUBMITTED TO BIDDING INSTITUTION.
- 1.4. WHERE A BIDDER IS NOT REGISTERED ON THE CSD, MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS MAY NOT BE SUBMITTED WITH THE BID DOCUMENTATION. B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE MUST BE SUBMITTED TO BIDDING INSTITUTION.
- 1.5. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.
- 1.6. ESKOM RESERVES THE RIGHT TO AWARD A TENDER TO A SUPPLIER WHO MAY NOT BE THE HIGHEST SCORING OR HIGHEST RANKED SUPPLIER FOR THE PURPOSE OF MAXIMISING RECOGNITION OF BLACK OWNERSHIP, BLACK MANAGEMENT CONTROL, SKILLS DEVELOPMENT AND/OR PREFERENTIAL PROCUREMENT IN LINE WITH SECTION (2)(1)(F) OF PPPFA.
- 1.7. ESKOM RESERVES ITS RIGHT TO TERMINATE THIS PROCUREMENT PROCESS IN THE EVENT THAT INFORMATION COMES TO LIGHT (IN WHATEVER WAY OR FORM) THAT IT MAY SUFFER SERIOUS REPUTATIONAL DAMAGE BY DOING BUSINESS WITH THE SUPPLIER OR, ALTERNATIVELY, INFORMATION IS RECEIVED BY ESKOM THAT THE SUPPLIER (HOWSOEVER), WHETHER DIRECTLY OR INDIRECTLY, MAY BE INVOLVED IN CORRUPT PRACTICES AND ACTIVITIES IN VIOLATION OF THE PREVENTION AND COMBATING OF CORRUPT PRACTICES ACT, NO.12 OF 2004 (PRECCA), THE PREVENTION OF ORGANISED CRIME ACT, 121 OF 1998 (POCA), THE PUBLIC FINANCE MANAGEMENT ACT, NO. 1 OF 1999 (PFMA) AND THE CONSTITUTION.

2. TAX COMPLIANCE REQUIREMENTS

- 2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
- 2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.
- 2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.
- 2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE BID.
- 2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE PROOF OF TCS / PIN / CSD NUMBER.
- 2.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.

3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS

- 3.1. IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? ☐ YES ☐ NO
- 3.2. DOES THE BIDDER HAVE A BRANCH IN THE RSA? ☐ YES ☐ NO
- 3.3. DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA? ☐ YES ☐ NO
- 3.4. DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA? ☐ YES ☐ NO

IF THE ANSWER IS “NO” TO ALL OF THE ABOVE, THEN, IT IS NOT A REQUIREMENT TO OBTAIN A TAX COMPLIANCE STATUS / TAX COMPLIANCE SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

PART C

TENDER RETURNABLES

C.1 Attachments issued with this OLT Invitation to Tender

- **Attachment 1:** SBD1 - Invitation to Bid
- **Attachment 2:** Integrity Pact Declaration – Annexure A
- **Attachment 3:** Annexure A SBD4 Bidders Declaration
- **Attachment 4:** Preference Claim Form – Annexure J
- **Attachment 5:** Eskom Standard Conditions of Tender
- **Attachment 6:** Eskom’s General Conditions of Purchase
- **Attachment 7:** BBBEE Guidelines and Templates
- **Attachment 8:** Tender Guidelines
- **Attachment 9:** SBD 6.1 : In terms of PPR 2017-1

NOTE: TENDER RETURNABLES

Please ensure that the tender returnables listed hereunder are submitted as per stipulated deadlines as non-compliance with mandatory tender returnables at RFQ closing deadline will result in disqualification (except where these are required for scoring /ranking purposes only). Non-compliance with mandatory returnables due at contract/order award stage will impact award.

- Integrity Pact Declaration **(at RFQ closing deadline)**
- SBD 1- Invitation to Bid **(at RFQ closing deadline)** Applicable for all suppliers
- Annexure A SBD4 Bidders Declaration
- Copy of valid current SARS certificate **(at contract/order award)** Applicable for Foreign suppliers who are required to be tax compliant but have not submitted a CSD/eFiling Pin number.
- ***Certified copy of a Valid original B-BBEE certificate (at RFQ closing deadline)**
- Letter of Good Standing (COIDA) **(at contract/order award)**
- **Data Sheets (at RFQ closing deadline)**
- SBD 6.1 : In terms of PPR 2017-1

C.2 EVALUATION CRITERIA

For transactions above **R30 000** up to **R50M** (inclusive of VAT) Price and B-BBEE Preferential Point Scoring will be based on the **80/20** allocation aligned to the PPPFA Regulations 2017;

For transactions less than **R30 000** (inclusive of VAT); the Preferential Point Scoring is not mandatory and only Price may be used (or state any other criteria to be used).

Evaluation Criteria:

Basic Compliance (mandatory – per returnable list)

Functionality (not applicable for this tender)

Price & BBBEE (80/20 principal)

Objective Criteria (per returnable list)

C.2.1: PRICE AND PREFERENCE (PPPFA REQUIREMENTS)

C.2.1.1 Price Evaluation (80 points)

Adjudication Criteria		Points
Price Evaluation 80/20	$P_s = 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$	80

Where:

- Ps= Points scored for price of Bid under consideration
 Pt = Rand value of Bid under consideration
 Pmin = Rand value of lowest acceptable Bid

C.2.1.2 B-BBEE EVALUATION (20 points)

- Tenderers are required to submit original and valid B-BBEE Status Level Verification Certificates or certified copies thereof together with their bids to substantiate the B-BBEE claims.
- Tenderers who do not submit B-BBEE Status Level Verification Certificates or non-compliant contributors to B-BBEE will not qualify for preference points for B-BBEE however will not be disqualified from the tender process. Such a tenderer will score points out of 80 for price and 0 points out of 20 for B-BBEE.
- Points will be awarded to a tenderer for attaining the B-BBEE Status Level of contribution in accordance with the table below:

The following preference point system is applicable to this tender:

- the 80/20 system for requirements with a Rand value less than R1 000 000 (all applicable taxes included)

B-BBEE Status Level of Contributor	Number of Points (80/20 System)
1	20
2	18
3	16
4	12
5	8
6	6
7	4
8	2
Non - Compliant Contributor	0

A trust consortium or joint venture must obtain and submit a consolidated B-BBEE Status Level Verification Certificate with their bids.

NOTE: No submission of BBBEE certificate at the tender submission stage will result in the tenderer not being allocated points for the BBBEE section.

The points scored for price will be added to the points scored for B-BBEE status level of contribution to obtain the tenderers total points scored out of a 100.

Please note:

- Attachment 2** and submission of BBBEE certificate/Affidavit must be submitted in order to claim preference points
- Eskom reserves the right to negotiate with preferred bidders after a competitive bidding process or price quotations; should the tendered prices not be deemed market-related.**
- Preference will be given to BBBEE Level 1 to 4 suppliers, and thereafter follow the Eskom's hierarchy of supplier preference as (set out in 3.2.4) of the Eskom Procurement and Supply Chain Management Procedure 32-1034 Rev 4.**

C.3 TENDER RETURNABLES

Please ensure that the tender returnable listed hereunder are submitted as per stipulated deadlines as non-compliance with mandatory tender returnable at RFQ closing deadline will result in disqualification (except where these are required for scoring /ranking purposes only).

Non-compliance with mandatory returnables due at contract/order award stage will impact award.

C.3.1 BASIC COMPLIANCE

Returnables	MANDATORY AT CLOSING	MANDATORY PRIOR TO AWARD (Objective Requirements)	SUBMITTED (Supplier checklist)
Offer invitation Form SBD1: Part A-D completed	YES		YES / NO
Annexure A (SBD) 4 Bidders Declaration	YES		YES / NO
Attachment 1: Integrity Pact Declaration – Annexure A	YES		YES / NO
Attachment 2: Preference Claim Form <i>Applicable if claiming preference points. Failure to submit will result in a zero score but will not disqualify submission – Annexure J</i>	YES		YES / NO / Not applicable
Copy of Coida / Letter of Good Standing	YES		YES / NO
Copy of Tax Clearance Certificate	YES		YES / NO
Copy of valid BBBEE Certificate / Affidavit (CERTIFIED)	YES		YES / NO
Are you the accredited representative in South Africa for the goods offered?		YES	YES / NO
Attach proof of authority to sign this bid; e.g. resolution of directors, etc.)		YES	YES / NO
SBD 6.1 : In terms of PPR 2017-1	YES		
Technical Data Sheet	Yes		YES / NO
Attachment 3: Eskom Standard Conditions of Tender	For your info		
Attachment 4: Eskom's General Conditions of Purchase	For your info		
Attachment 5: BBBEE Guidelines	For your info		
Attachment 6: Tender Guidelines	For your info		

C.3.1: FUNCTIONAL ANALYSIS

6. EVALUATION CRITERIA

The following two evaluation criteria are mandatory. Tenderer must fully comply in order to be eligible for consideration.

Verification of experience on supply of similar service and appropriate machining and welding facilities and equipment.

The Employer reserves the right to inspect the manufacturing facilities of the tenderer to verify that the scope of work falls within the capabilities of the tenderer. Verification of experience on supply of similar service, i.e., the onsite in situ welding and pipe fabrication of hydraulic pipes of diameter 80 mm or larger. Reference documentation of such services may be requested, e.g., purchase orders and technical documentation.

ISO 3834 Certificate. The tenderer must be in possession of a valid ISO 3834 Certificate

Evaluation Criteria	Weighting	Threshold
3. Accepted Welding Procedure Specification (WPS)	25	80
4. Accepted Welding Procedure Qualification Record (WPQR)	25	
5. Accepted Welder Qualification Record (WQR)	25	
6. Accepted Quality Plan and Method Statement	25	

C.3.2: PRICE

PRICE LIST						
DESCRIPTION ADDITIONAL SUPERVISION AND LABOUR IF REQUIRED	Text	Material Numbers	Unit of Measure	Price Per Unit	Qty	Total
	Rotating Union Replacement		LE		1	
TOTAL EXCLUDING VAT						
TOTAL INCLUDING VAT						

SCOPE OF WORK/SUPPLY

The *works* is the replacement of the two pipe assemblies that contain the rotating unions, pressure testing and the fitment to the servo motor hydraulic supply line thereof. Piping and fittings including flanges between Flange A and Flange B form part of the scope of supply, see Figure 2 and 3.

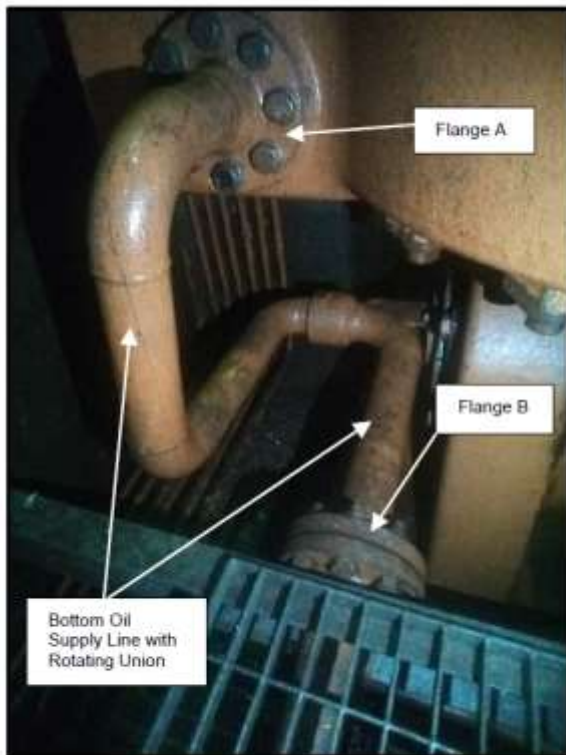
The existing and proposed pipe segments and fittings, which include flanges and elbows, are manufactured in carbon steel and rated for an operating pressure of 6 MPa. The *Contractor* has the option to re-use pipe segments, elbows and flanges from the original installation in order to fabricate the proposed new pipe assemblies. The proposal for the re-use of existing pipe segments and fittings is submitted to the *Employer* for acceptance at submission of the tender.



Figure 1: Existing Oil Supply Pipe Rotating Union



- Figure 4: Servo Motor Top Oil Supply Line Rotating Union and Flanged Pipe Connection

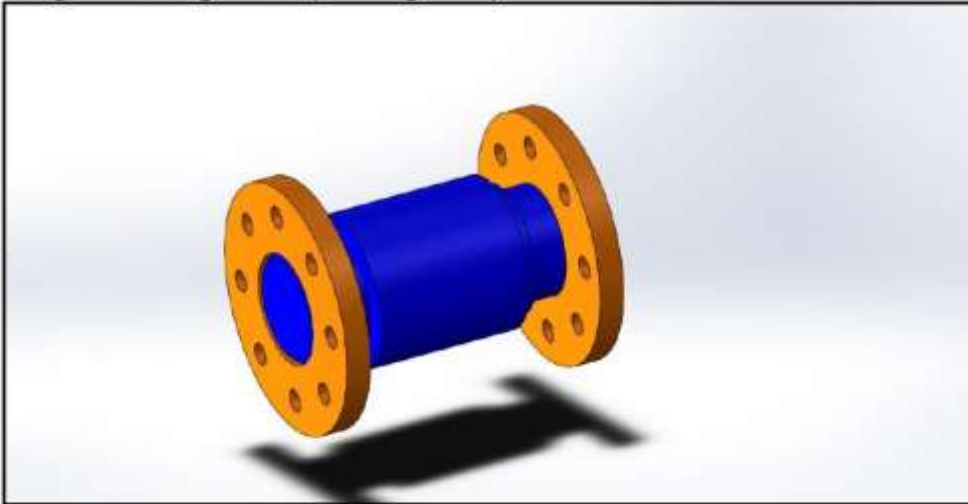


- Figure 3: Servo Motor Bottom Oil Supply Line Rotating Union and Flanged Pipe Connection
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- Figure 4 Replacement Rotating Union
-

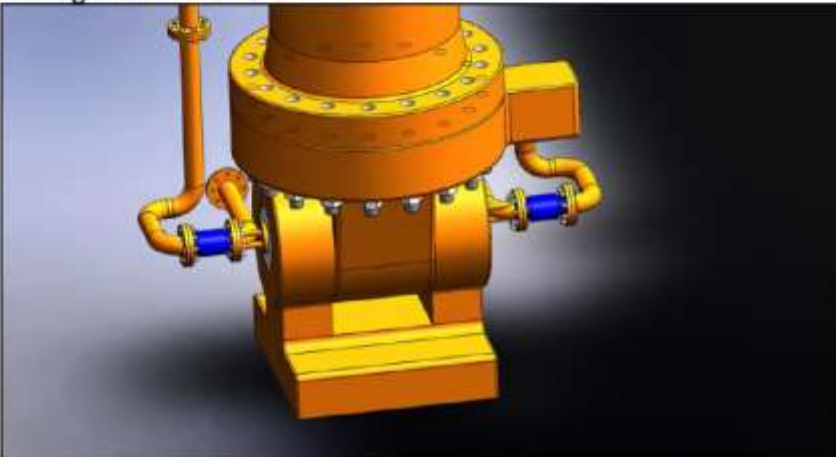
The rotating unions which are currently welded to the pipe segments are replaced with a flanged rotating union (see Figure 5).



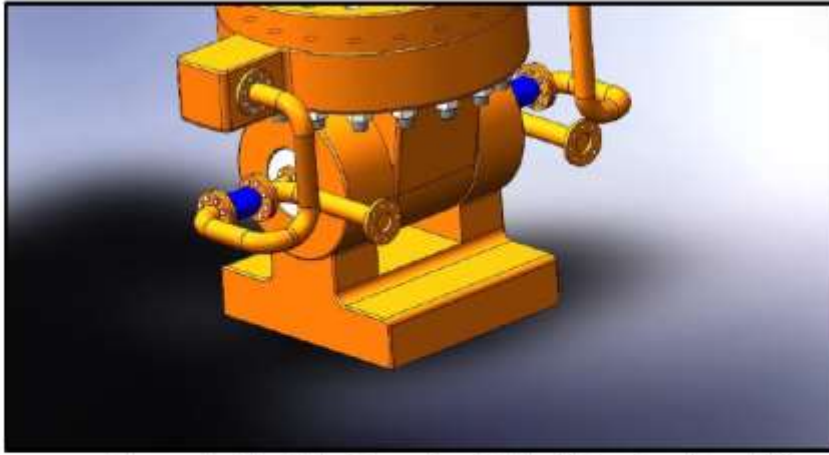
– Figure 5: Rotating union with weld-on flanges fitted

The rotating union shown in Figure 4 is disassembled and each half cut to length by the *Contractor* in order to weld on the flanges as shown in Figure 5. The disassembly, welding and re-assembly procedure is described in sections 4.1, 4.2 and 4.3

The two rotating unions are bolted in position as can be seen in Figure 6 and 7. This design will allow for the rotating unions to be easily removed and replaced or repaired for maintenance purposes without having to repair or re-weld components in-situ. This will minimize down time during maintenance.

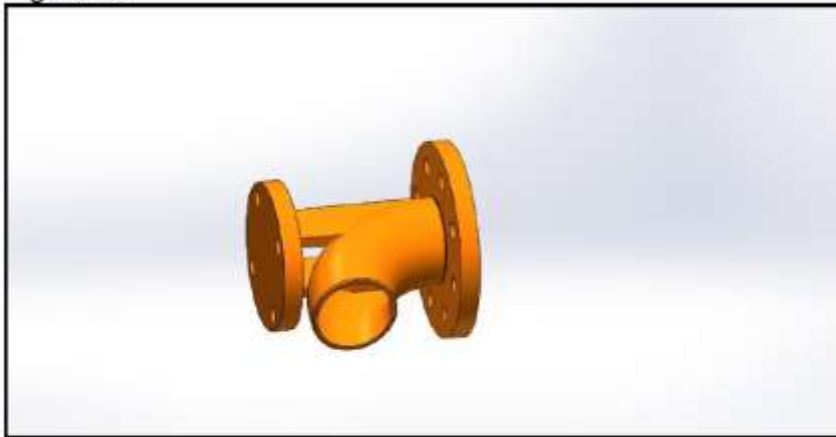


– Figure 6: Rotating Union Bolted Design Rear View



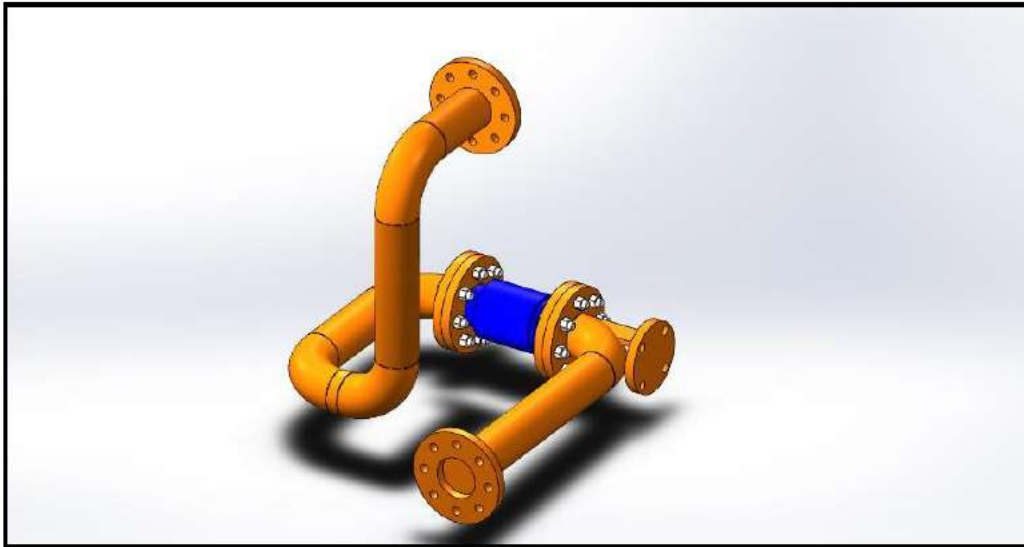
– Figure 7: Flexible Coupling Bolted Design Front View

It is imperative that the rotating unions are mounted concentric with the main clevis of the servo motor. This ensure that no side loads, which may cause fatigue and oil leakage are introduced into the piping system during operation of the spherical valve. An elbow bracket is bolted onto the clevis pin on either side to ensure concentricity of the flexible coupling, see Figure 8.

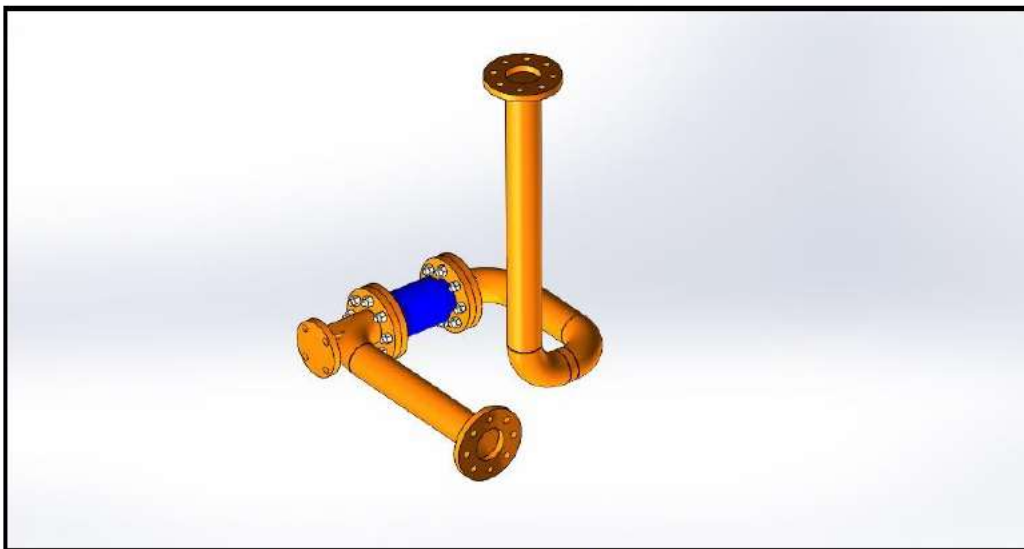


– Figure 8: Elbow Bracket

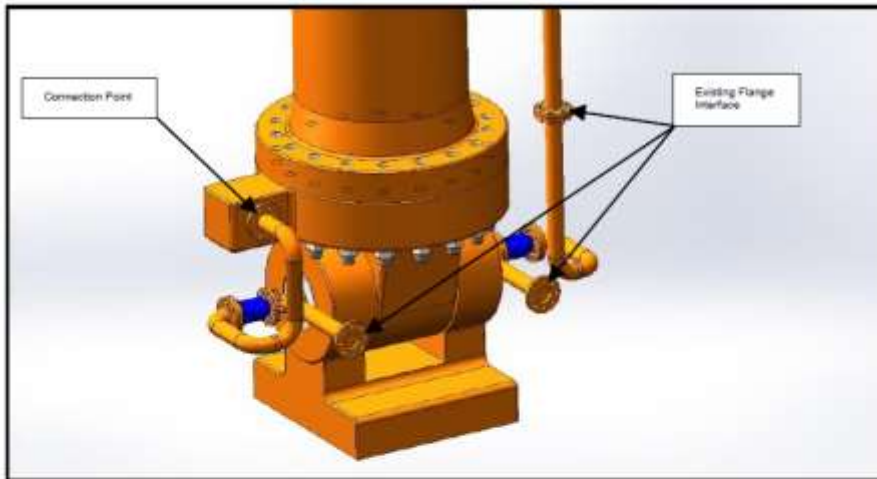
The following two pipe assemblies, Figures 9 and 10 are welded in situ in order to interface with the existing flanges and connection points see Figure 11, this include the three bolt-on components; the Elbow Bracket, the Flanged Rotating Union and Inlet Pipe Assembly.



– Figure 9: Left Hand Pipe Assembly



– Figure 10: Right Hand Pipe Assembly



– Figure 11: Interfacing of In-Situ Welded Assemblies

- Procedure for the disassembly of the rotating union
 - Remove tag by carefully prising up hammer screws with 2 sharp chisels or screwdrivers (Note: - take care not to snap the head off the drive screws, which are hardened and will not drill), see Figure 4.
 - Unscrew nylon plug.
 - Holding casing in a vice, remove the ball bearings through the hole with a magnet, turning the sleeve by the flats to reveal all the ball bearings.
 - Use solvent on the balls if stuck with grease.
 - When all balls are removed, pull sleeve and casing apart.
 - Remove rollers and dust seal from sleeve.
 - Clean with solvent ready for re-assembly.
 - Remove main seal from casing and clean area ready for re-assembly.
 - Carry out welding to your procedure.
- Welding and Fabrication

The *Contractor* submits the following documents to the *Employer* for acceptance before commencing with the works:

- The *Contractor's* valid ISO 3834 certificate (both pages)
- The Welding Procedure Specification (WPS)
- The Welding Procedure Qualification Record (WPQR)
- The Welder Qualification Record
- The Quality Plan and Method Statement

The *Contractor* performs the replacement as follows:

- Cut, fit and tack weld the pipes, pipe fittings and rotating unions in situ in order to fit all the components such that no stress is induced in the line when the servo motor is actuated.
- The tack welded pipe fittings and rotating unions are fully welded as per the approved welding specifications and procedures.
- Any visible inclusions or pinholes are ground, re-welded, machined and inspected. This process is repeated until no defects are visible. The procedure for repairing the defects is submitted by the *Contractor* to the *Employer* for acceptance prior to the commencement thereof.

- When there are no more visible defects and the rotating union is re-assembled as prescribed in section 4.3, a pressure test with water as a medium is performed on the welded sub-assemblies, Figures 9 and 10 at a pressure of 7.25 MPa for a time period of 30 minutes.
 - Pressure testing equipment and blanking flanges for the pressure test are supplied by the *Contractor*.
 - Any leaks, or the notice of pressure drop within the testing time are addressed by finding the leak or source of pressure drop and repairing it by means of grinding, re-welding and re-testing.
 - The pipe segments are painted with one coat etch primer and two coats of BS4800 06-C-39 Saddle Brown enamel-based paint as per the paint manufacturer's instructions to conform to the rest of the hydraulic pipes.
 - Re assembly of rotating union
 - Fit dust seal to sleeve.
 - Grease roller groove with RLGH2 grease.
 - Press rollers into grease around race leaving a gap of approximately one roller.
 - Main seal – smear with grease, carefully place in base of casing with spring towards pressure (i.e. facing away from dust seal of joint in positive pressure applications).
 - PTFE seals need careful handling: - do not use sharp tools.
 - Insert sleeve with full complement of rollers into casing and align ball bearing race on sleeve with hole in casing.
 - Load ball bearings through hole, rotating joint slightly.
 - Screw in nylon plug taking care not to prevent movement of ball bearings.
 - Attach label over plug with rivets previously removed.
 - Load with LGHB2 grease until grease extrudes slightly through dust seal.
 - Quality Control
 - The *Contractor* submits the welding and machining method statement and quality control plan indicating all hold and witness points to the *Employer* for acceptance prior to the commencement of the *works*.
 - Non-destructive testing on all the welded surfaces is done by means of dye penetrant testing and all inclusions or defects found are repaired by the *Contractor*. The defects can include porosities, inclusions or any surface imperfections.
 - After repairs the surface is tested again by the *Contractor* until no visible defects are noted.
 - Upon completion of the welding and assembly of the pipe assemblies/ rotating union, a pressure test is performed with water at 125% of the operating pressure for a period of 30 minutes to ensure the integrity of the welding and rotating unions. The rotating union is rotated backwards and forwards through 90 degrees while under pressure during the test to verify the integrity of the rotating union seals. This rotation procedure is performed 10 times during the 30 minute test. The left hand and right hand side assemblies are tested individually.
 - The pipe sections are installed by the *Contractor* on the unit only after passing the pressure test, (no visible leaks or pressure drop during the test, (7.2 MPa for a duration of 30 min)
 - The *Contractor* is responsible for the installation of the welded pipe assemblies to the servo motor
-

- In the event of an oil leak in service, the Contractor is responsible for the repair of the oil leak.
- Repair of Defects
 - The procedure for the repair of the defects is submitted to the *Employer* for acceptance before repairing defects.



– Figure 12: Spherical Valve System

The *Employer* free issues the rotating unions as shown in Figure 4

The *Contractor* supplies all piping, pipe elbow fittings, flanges, O-rings and nuts and bolts to fabricate and fit the components as shown in Figures 5, 8, 9 and 10, all components are pressure rated for use with hydraulic oil at a working pressure of 6 MPa.

The *Contractor* supplies valid material certificates of all piping and pipe fittings.

The *Contractor* supplies and paints the piping

The *Contractor* supplies all welding and fabrication consumables

The *Contractor* supplies all jigs for the in-situ fitment of the piping, fittings and rotating unions

The *Contractor* supplies pressure testing equipment and performs the pressure test

Please note the following quantities as required per unit.

- | | |
|--|-------|
| • Rotating Union with flanges fitted, (Figure 5) | 2 off |
| • Elbow Bracket, (Figure 8) | 2 off |
| • LH Pipe assembly, (Figure 9) | 1 off |
| • RH Pipe Assembly, (Figure 10) | 1 off |

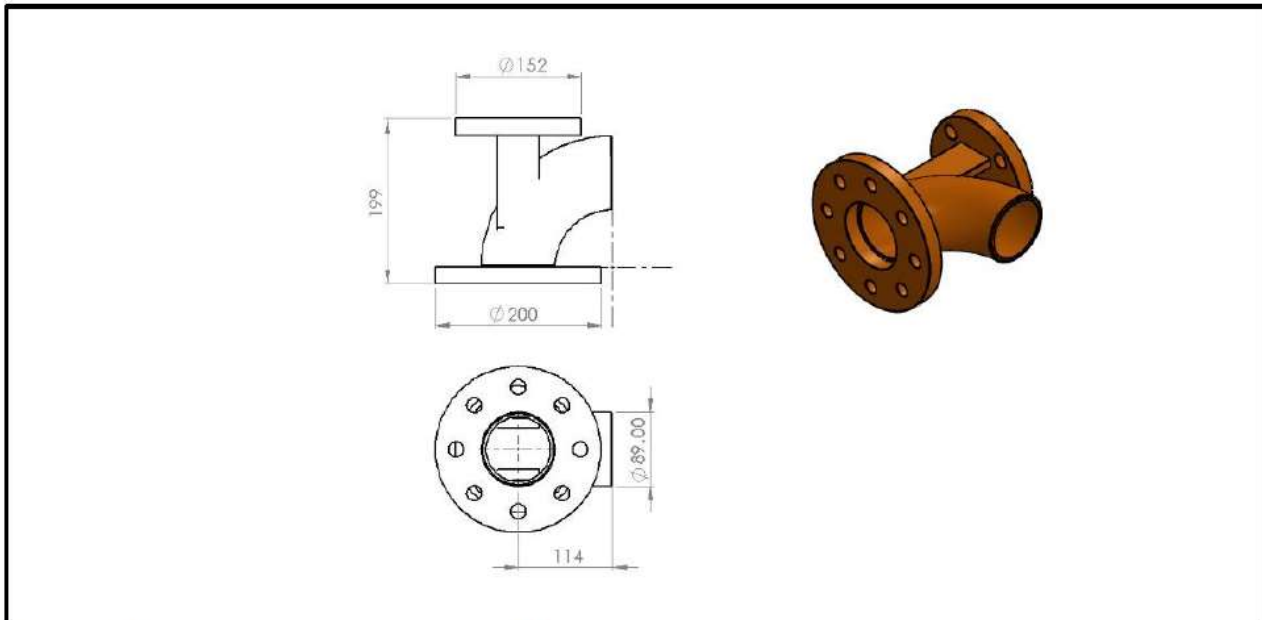


Figure 13: Elbow Bracket Basic Dimensions

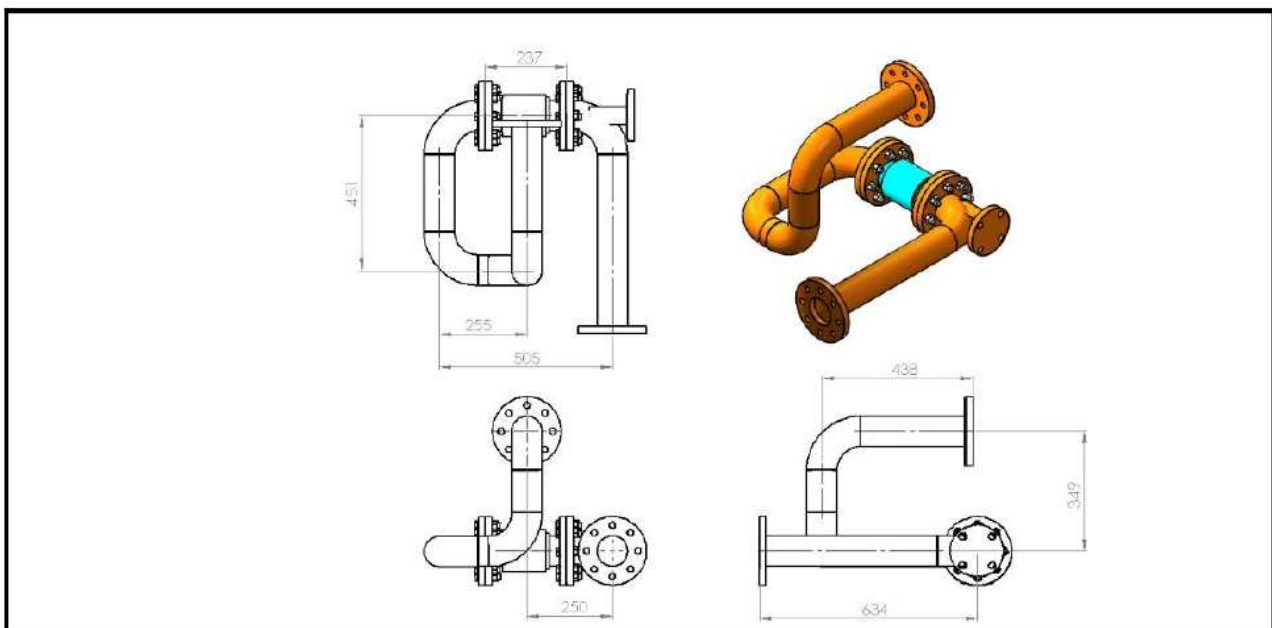


Figure 14: LH Pipe Assembly Basic Dimensions

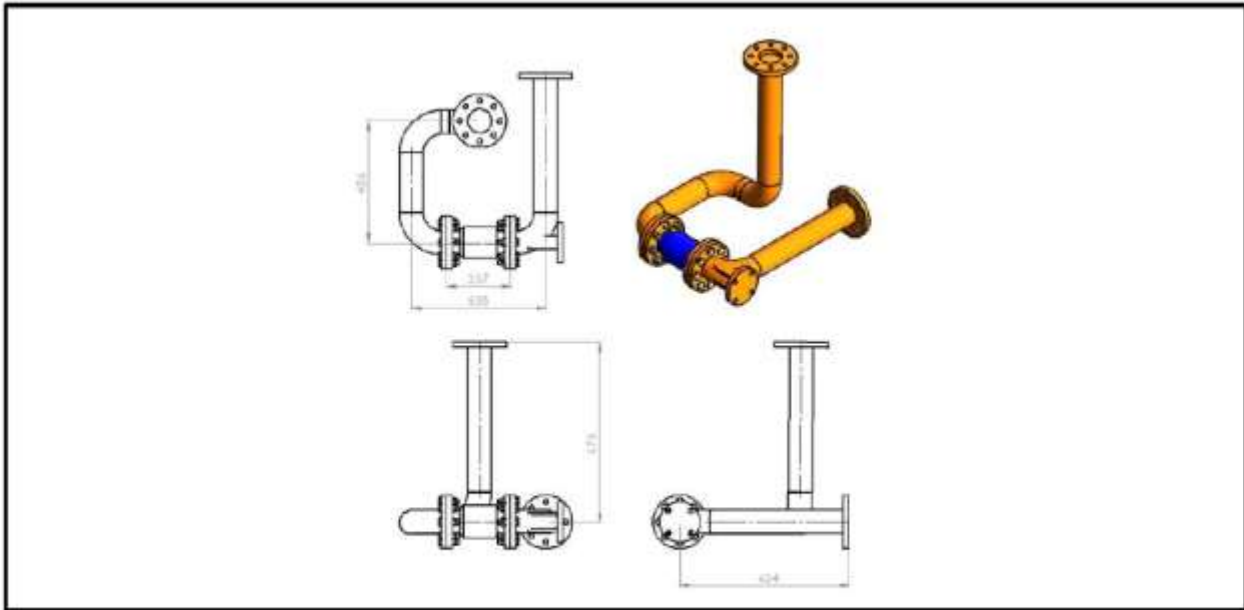


Figure 15: RH Pipe Assembly Basic Dimensions

5. SPECIFICATION OF PRODUCT OR GOODS

Description of the goods or service needed

May also be used to expand and explain on the quality of the product or service required.

S.Z Mabaso

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