



Advertisement Form

(EXTENSION)

General Competitive Bid (First Time)

No.: 18790

Date: 12-7-2017

To / Gentlemen

Sub. / :CONTROL VALVES FOR LUBE OIL PLANT AND SPARE PARTS

389/2017/E

SOUTH REFINERIES COMPANY / STATE COMPANY is pleased to invite the qualified and experienced bidders to submit their bids to supply **(CONTROL VALVES FOR LUBE OIL PLANT AND SPARE PARTS)**, and note the following:

1. The qualified bidders who want to obtain additional information shall call **CONTRACTS & PURCHASING DEPARTMENT - SOUTH REFINERIES COMPANY FROM SUNDAY - THURSDAY 08:00 AM TO 02:00 PM BASRA LOCAL TIME**, as shown in the instructions to bidders.
2. The tender will be executed through the national competitive bidding procedures specified by the Instructions for Implementing Government Contracts issued by the Ministry of Planning No. (2) / 2014.
3. The requisite qualification requirements: (a) **financial capability** ,The Bidder shall submit documented evidence on its ability to meet the following financial requirements: 1- **Final Accounts Profit rate for the past three consecutive years Authorized and audited by a Recognized Certified Accountant.** 2-**Cash liquidity equivalent to (3,300,000) Three Million Three hundred thousand US dollars.**(b) -**Experience and technical capability** ,The Bidder shall submit documented evidence on its ability to meet the requirements of technical experience as follows: **Providing evidence to prove outfitted equipment (control valve and devices, etc.) to oil companies or public sector companies in Iraq.**
4. Interested bidders can buy bid documents, after submitting written request to the address specified in the bid data sheet, and after paying the selling value of documents-nonrefundable whatever reason- amounts **(200,000)Dinars.**
5. The estimated amount of the tender is: **(1,618,550) One million Six hundred and eighteen thousand and Five hundred Fifty US dollars only.**
6. The Bid Guarantee shall be submitted at a value of **(32,500) Only Thirty Two thousand Five hundred US dollars** only in the form of a certified check or letter of guarantee or a Bank Transfer, valid for **(28) days** after the Bid's validity through an Iraqi bank accredited by the Central Bank of Iraq.
7. Technical and Commercial Offers shall be submitted in two separate and sealed envelopes. The envelopes shall be stamped with the stamp of the company and shall be sent by an authorized representative.
8. The bidder, who wins the tender, shall bear the fees of publishing and advertising of last announcement.
9. The bids are delivered to the following address: **ROOM OF RECEIVING & OPENING BIDS COMMITTEE - SOUTH REFINERIES COMPANY- HEAD QUARTER -BASRA - REPUBLIC OF IRAQ** at the specified date **26 July 2017**. Late bids will be rejected, and the bids will be opened by the attendance of the bidders or their representatives. Attendance shall be at the following address: **ROOM OF RECEIVING & OPENING BIDS COMMITTEE - SOUTH REFINERIES COMPANY- HEAD QUARTER -BASRA - REPUBLIC OF IRAQ** at the specified date: **26 July 2017 01:00 PM (BASRA LOCAL TIME) OR THE FOLLOWING DAY.**
10. All terms and conditions are listed in the attached Standard Bid Document.

For/ General Director
Hussam H. Waly

عبد الكريم جاسم قاسم
معاون المدير العام

Standard Bid Documents

Supplying of Commodities

Preface

(Standard bid documents to supply commodities in a general competitive manner) was prepared for projects financed by the federal budget of the Republic of Iraq.

These documents assume no occurrence of pre-qualification to the bidders before the invitation to bid.

Bid Documents

To supply the commodities

CONTROL VALVES FOR LUBE OIL PLANT AND SPARE PARTS

GeneralCompetitiveBids:389/2017/E

The Project: CONTROL VALVES FOR LUBE OIL PLANT AND SPARE PARTS

Contracting Party: SOUTH REFINERIES COMPANY/ STATE COMPANY

Buyer: SOUTH REFINERIES COMPANY/ STATE COMPANY

Advertisement Form

General Competitive Bid (First Time)

No.:

Date:

To / Gentlemen

Sub. / :CONTROL VALVES FOR LUBE OIL PLANT AND SPARE PARTS

389/2017/E

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9. The bids are delivered to the following address: **ROOM OF RECEIVING & OPENING BIDS COMMITTEE - SOUTH REFINERIES COMPANY- HEAD QUARTER -BASRA - REPUBLIC OF IRAQ** at the specified date **26 July 2017**. Late bids will be rejected, and the bids will be opened by the attendance of the bidders or their representatives. Attendance shall be at the following address: **ROOM OF RECEIVING & OPENING BIDS COMMITTEE - SOUTH REFINERIES COMPANY- HEAD QUARTER -BASRA - REPUBLIC OF IRAQ** at the specified date: **12 July 2017-01:00 PM (BASRA LOCAL TIME) OR THE FOLLOWING DAY.**
10. All terms and conditions are listed in the attached Standard Bid Document.

For/ General Director
Hussam H. Waly

Standard Bid Documents to Supply the Commodities

C o n t e n t s

Part One– Contracting Procedures

It contains the following sections:

Section One : Instructions to Bidders

This section contains information that helps the bidders to prepare their bids. It provides information about delivering, opening and evaluating the bids, and contracts awarding. Section one contains conditions that must be used without amending.

Section Two : Bid Data Sheet

This section contains the conditions about supplying operations and it is considered complementary to what is mentioned in section one.

Section Three : Evaluation and Qualification Criteria

This section contains the criteria used to determine the bid with the lowest price, and qualification requirements which has to be fulfilled by the bidder to implement the contract.

Section Four : Bid Forms

This section contains bid forms, schedule of prices and bid guarantee which must be submitted with it.

Section Five : Eligible Countries

This section includes information about the eligible countries

Part Two– Supplying Requirements

It contains the following sections:

Section Six : Schedule of Requirements

This section contains list of commodities and services related thereto, schedules of supplying and delivering methods, technical specifications, drawings that describe the related commodities and services which will be supplied.

Part Three–The Contract

It contains the following sections:

Section Seven : General Conditions of the Contract

This section contains the general conditions that must be applied in each contract. The provisions of Paragraphs included in this section shall not be amended.

Section Eight : Special Conditions of the Contract

This section contains Paragraphs for each contract which amend or complete the general conditions of the contract included in section seven.

Section Nine : Contract Forms

This section contains the contract form that when filled, it will include corrections and amendments of the approved and admissible bid according to the instructions to bidders and the general and special conditions of the contract.

If it was required to submit it then "good performance guarantee form" and "advance payment guarantee" shall be completed and submitted by the winner bidder only after awarding the contract.

Part One

Contracting Procedures

For the Contracts of Supplying Commodities

Section One: Instructions to Bidders
For the Contracts of Supplying Commodities

Table of Contents

A. General	8
1- Scope of Bid	8
2- Financing Resource	8
3- Fraud and Corruption.....	8
4- Eligible Bidders.....	9
5- Eligible Commodities and Related Services	10
B- Contents of Tender Documents.....	10
6- Parts of Tender Documents	10
7- Clarification of Tender Documents.....	11
8- Amendment of Tender Documents.....	11
C- Preparation of Bids	11
9- Cost of Bid.....	11
10- Language of the Bid.....	11
11-Documents Comprising the Bid	11
12-Bid Submission Form and Priced Bill of Quantities.....	12
13-Alternative Bids	12
14-Bid Prices and Discounts.....	12
15- Currency of Bids.....	13
16- Documents Confirming the Eligibility of Bidder.....	13
17- Documents Confirming the Eligibility of Commodities and Services.....	13
18- Documents Confirming the Conformity of Commodities and Related	13
19- Documents Confirming the Qualification of the Bidder	13
20- Period of Validity of Bids	14
21-Bid Guarantee.....	14
22- Method of Submitting and Signing of Bid	15
D- Submission and Opening of Bids.....	16
23- Delivering, Sealing and Marking of Bid	16
24-Deadline for Submitting of the Bids	16
25-Late Bids	16
26- Withdrawing, Replacing and Amending of Bids.....	17
27- Opening of Bids.....	17
E- Evaluating and Comparing Bids	18
28- Confidentiality	18

29- Clarification of Bids.....	18
30- Bids Response	18
31- Non-Conformity of Specifications, Errors and Omitting.....	18
32-Initial Auditing of Bids.....	19
33- Auditing the Terms and Conditions and the Technical Evaluation	19
34-Conversion to Unified Currency.....	20
35-Margin of Preference.....	20
36-Evaluation of Bids	20
37- Bids Comparison.....	21
38-Subsequent Qualifications to Bidders	21
39-Buyer's Right to Accept or Reject any Bid.....	21
F- Awarding the Bid	21
40- Awarding Criteria.....	21
41-Buyer's Right to Change the Quantities upon Awarding the Tender.....	21
42- Notification of Awarding the Bid	21
43- Signing the Contract	22
44- Good Performance Guarantee.....	22

Section One: Instructions to Bidders

A. General

1- Scope of Bid

- 1-1- The buyer, as defined in the Bid Data Sheet, shall issue these tender documents for the acquisition of commodities and related services as stated in section six: schedule of requirements. The bid data sheet shall state this general competitive bid's name and number as well as the name, definition and number of items required.
- 1-2- If mentioned in the tender documents, the following definitions shall be considered:
 - a- "in writing" means any method of written communication (mail, email, fax), with proof of receipt thereof.
 - b- The singular is used to describe the plural and vice-versa.
 - c- "Day" means a Gregorian calendar day,

2- Financing Resource

Financing shall be obtained from the amounts allocated for the project in the Federal Budget of the Government of Iraq. The bid data sheet shall state the project's name and number.

3- Fraud and Corruption

- 3-1- The Buyer requires that the Bidders, suppliers, contractors and advisors shall comply with the ethical standards throughout the process of contracting and execution of contract. In order to achieve this policy,
 - a- The Buyer considers the following definitions for this purpose:
 - First: "Corrupt Practices" means offering, giving, receiving or soliciting, directly or indirectly, anything of value to influence the actions of a public official throughout the acquisition process or contract execution.
 - Second: "Fraudulent Practices" means any misrepresentation or omission of any fact in view to influence the outsourcing process or contract execution.
 - Third: "Collusive Practices" means any scheme of arrangement between two or more Bidders, with or without knowledge of the buyer, in view to establish artificial and noncompetitive prices.
 - Fourth: "Coercive Practices" means harming or threatening to harm, directly or indirectly, the persons or their properties to influence their participation in the acquisition processes or influence the contract execution.
 - Fifth: "Obstructive Practices" means:
 - (1) To destroy intentionally, falsify, distort documents and conceal investigation-required evidences or give false testimony to investigators to obstruct the Buyer's investigation procedures in the corrupt, fraudulent, collusive, coercive practices or threaten, provoke or obstruct any party and prevent it from giving any investigation-related information or prevent it from following up the investigation procedures.

- (2) The practice that obstructs the Buyer from following up the auditing and revision procedures, as per 3-1(d) hereinafter.
- b- The Buyer may reject the awarding recommendations if it is proved that the Applicant is involved, directly or through an agent, in a corrupt, fraudulent, collusive, coercive or obstructive practice during its competition on the relevant contract.
 - c- The Buyer may impose penalties on organizations or individuals, including declaring ineligibility, whether for definite or indefinite term, if it is proved that they are involved, directly or through an agent, in a corrupt, fraudulent, collusive, coercive or obstructive practice during competition or during the execution of a Buyer-funded contract.
 - d- The Buyer shall have the right to add to the Bidding Documents and the contracts a condition stipulating that Bidders, suppliers, contractors and advisors shall permit the Buyer or its appointed auditors to inspect or audit their accounts, registers and any documents related to the bid submission and contract execution.
- 3-2- In addition, the Bidder shall have acquainted with the obligations stated in 35-1 (A/3) General Conditions of Contract in this respect.

4- Eligible Bidders

- 4-1- The Bidder and all parties thereof may be citizens of any country according to the contracts stated in section five: eligible countries. The Bidder holding citizenship of a country shall be either a citizen thereof or have incorporated a company, registered or doing business according to provisions of laws such country.
- These standards shall be applied to identify the citizenship of any subcontractor or supplier for any part of the contract, to include the services related thereto.
- 4-2- Bidders shall not have any conflict of interests; shall be disregarded any applicant proved to be involved in conflict of interest with a Party or another in the process of submitting the bid in each of the following events:
- a- If it has, or had, with relation with the contractor's company or a subsidiary thereof to offer advisory services for the purpose of setting up the design, specifications or other documents used to determine the commodities to be supplied through the documents of the Bid.
 - b- If more than Bid is submitted to the tender, unless alternative bids, if permitted as per 13/Instructions to Bidders, are submitted. In any case, this condition does not prevent contractors from submitting more than a bid.
- 4-3- The Bidder that has been disqualified by the Buyer as per 3/Instructions to Bidders, shall be disregarded on the date of awarding the contract. A list of the disregarded companies is available on the Buyer's URL mentioned in the bid data sheet. Also shall be disregarded any bidder that is disqualified, suspended or banned by the Legal Department or the Public Government Contracts Department of the Ministry of Planning and Developmental Cooperation.
- 4-4- Iraqi Government owned organizations are eligible to participate in bidding, if they meet the two following conditions: (1) they are legally and financially independent, and (2) according to the Trade Law and State Companies Law.

- 4-5- The Bidders shall prove their continuous qualification to the Buyer's satisfaction, according to reasonable qualification requirement

5- Eligible Commodities and Related Services

- 5-1- All commodities and related services in accordance to the contract funded by the Buyer shall be from the eligible countries (origins).
- 5-2- For the purpose of this Clause, the term "commodities" means various commodities such as raw materials, instruments, equipments, industrial facilities. Also, the term "relevant services" means services such as insurance, installation, training and primary maintenance.
- 5-3- The term "origin" means the country from which the commodities are extracted, produced, planted, processed or manufactured, or through manufacturing, processing or assembling produce commercial commodities that have drastically different basic properties than their components.

B- Contents of Tender Documents

6- Parts of Tender Documents

- 6-1- Tender documents are composed of three sections containing all the sections stated hereinafter and the latter shall be read in conjunction with any annex to be issued according to Para eight/Instructions to Bidders.

Part One – Contracting Procedures

- Section One : Instructions to Bidders
- Section Two: Bid Data Sheet
- Section Three: Evaluation and Prequalification Criteria
- Section Four: Bid Forms
- Section Five: Eligible Countries

Part Two – Supply Department Requirements

- Section Six: Table of Requirements

Part Three – The Contract

- Section Seven: General Conditions of the Contract
- Section Eight: Special Conditions of the Contract
- Section Nine: Contract Forms

- 6-2- The announcement of the invitation issued by the Buyer is not considered part of the tender documents.
- 6-3- If the tender documents and its annexes are not received by the Buyer directly, the latter shall not be responsible for completeness thereof.
- 6-4- The Bidder shall check all the instructions, forms, terms and specifications contained in the tender documents. Failure by the Bidder to provide all the information and documents required in the tender Documents may result in rejecting the Bid.

7- Clarification of Tender Documents

7-1- When it is required to clarify or interpret any of the information of the tender documents, the Bidder shall send a letter to the Buyer according to its address stated in the bid data sheet. The latter shall reply in writing to any questions it receives provided that they are received ten days before the bid submission deadline to which the period of announcement is determined by (15) days. The Buyer shall determine the deadline to receive questions for those to which the announcement period exceed the (15) days stated in the bid data sheet, the Buyer shall send a copy of its reply to such questions to all those who received the tender documents directly therefrom, to include the description of question, without stating its source. If the Buyer deems it necessary to amend the tender documents due to such questions, it shall conduct the same according to the procedures stated in articles (8) and (22-2).

8- Amendment of Tender Documents

8-1- The Buyer may amend the tender documents any time before the tender deadline, by issuing annexes thereto.

8-2- Annexes are considered part of the tender documents and shall be circulated in writing to all those who received tender documents directly from the Buyer.

8-3- The Buyer shall have the right to extend the tender deadline as per 24-2/Instructions to Bidders to give the Bidders ample time to consider the amendments stated in the Bid's annex.

C- Preparation of Bids

9- Cost of Bid

9-1- The Bidder is charged with the total cost resulting from setting up and submitting its Bid. The Buyer shall not be liable for such costs regardless of the results of Bids analysis.

10- Language of the Bid

10-1- The bid and all the correspondence and the documents exchanged between the bidder and the contracting party must be prepared in the language referred to in the paper of bid data. The bidder submit and of the literature related thereto which constitute part of his bid in another language, provided that it must be accompanied with an accurate translation for its texts to the language of the bid. Hence the translation will be accepted for the purpose of interpreting the bid.

11-Documents Comprising the Bid

11-1- The Bid is made up of the following documents:

- a- Bid's form and the un-priced bill of quantities used according to 12, 14, 15/Instructions to Bidders.
- b- Bid's security as per 21/Instructions to Bidders, if required.
- c- Written confirmation of the authorization to the Bid's signatory according to a notarized power of attorney as per 22/Instructions to Bidders.
- d- Information certifying the eligibility of Bidder to submit its Bid according to 16/Instructions to Bidders.

- e- Authenticated documents certifying that all the commodities and related services offered by Bidders are from eligible origins as per 17/Instructions to Bidders.
- f- Authenticated documents certifying conformance of the commodities and related services to what is required in the tender documents, according to articles 18 and 39/Instructions to Bidders.
- g- Information certifying the Bidder's prequalification to execute the contract if the contract is awarded in its favor, according to article 19/Instructions to Bidders.
- h- Any other document stated in the bid data sheet.

12-Bid Submission Form and Priced Bill of Quantities

12-1- The Bidder shall employ the Bid's Submission Form mentioned in section four: Bid Forms. The form shall be filled-out without any change to its format, no substitutes are accepted. All blank spaces shall be filled out with the required information.

12-2- The Bidder shall deliver the priced bills of quantities for the commodities and related services as per their origin, employing the forms in section five: bid forms.

13-Alternative Bids

13-1- Alternative bids shall not be considered, unless the bid data sheet states otherwise.

14-Bid Prices and Discounts

14-1- Prices and discounts offered in the Bid Form and the Priced Bill of Quantity shall comply with the specified requirements.

14-2- All items and commodities shall be listed and price separately in the Priced Bill of Quantity. If the table contains un-priced items, shall be assumed that their prices are covered by other items. An item or commodities not stated in the Priced Bill of Quantities shall be considered as uncovered by the Bid. Amendment can be made according to Para 31/Instructions to Bidders.

14-3- The price shown in the Bid Form is the Bid's Total Price, excluding any discount offered.

14-4- The Bidder shall state any unconditional discounts and shall demonstrate in the Bid Form how these can be used.

14-5- EXW, CIP, CIF, C&F and other similar terms are subject to the regulation stated in the applicable Incoterms version issued by the International Chamber of Commerce, as indicated in the Instructions to Bidders.

14-6- Prices offered by the Bidder shall be fixed throughout the term of contract execution and not liable to change under any circumstance, unless the bid data sheet states otherwise.

14-7- Bids may be offered individually (Single Contract) or separated into several parts (number of contracts) if the same is stipulated in Para 1-1/Instructions to Bidders. The said prices shall be according to

100% of the items specified to each part and to 100% of their quantities, unless the bid data sheet states otherwise. The applicants interested in offering price discount, in the event of awarding more than one part in their favor, shall state the discount in accordance with Para 14-4/Instructions to Bidders, provided the Bids for all these parts shall be delivered and opened simultaneously.

15- Currency of Bids

- 15-1- The Bid's currency and payment shall be as stated in the bid data sheet and shall be inclusive all taxes, costumes duties and any additional expensed for the transportation, as indicated separately in each Bill of Quantity in section four.

16- Documents Confirming the Eligibility of Bidder

- 16-1- The Bidders shall fill out the Bid's Form in chapter four to document their eligibility to participate in the tender according to Para 4/Instructions to Bidders.

17- Documents Confirming the Eligibility of Commodities and Services

- 17-1- To prove the eligibility of commodities and service supplied according to article 5/Instructions to Bidders, the Bidders shall fill out the information related to the country of origin in the prices tables stated in section four: Contract Forms.

18- Documents Confirming the Conformity of Commodities and Related Services

- 18-1- For the purpose of confirming the conformity of commodities and related services to the tender documents, the Bidder shall submit, as part of its Bid, documented evidence that the commodities supplied conform the technical specifications stated in section four: schedule of requirements.
- 18-2- Such documents may be either in print, charts or data forms, and shall include detailed description of each item, i.e. the essential technical specifications and performance properties for commodities and services, so that their compliance with the required specifications is clarified. The applicant shall submit a report of variance and exemption from the schedule of requirements.
- 18-3- The bidder shall also submit a list of all details, to include the available resources and current prices of spare parts and special equipments required for the continuous operation of commodities after being used by Buyer for the period specified in the bid data sheet.
- 18-4- The workmanship, materials and equipments and the reference to the trade names and/or reference numbers contemplated as stated by the Buyer in the schedule of requirements shall be examples and not limitations. The Bidder may offer other standards for quality and trademarks and/or contemplated reference numbers, provided that these shall realize the same or exceed the efficiency of items stated in the schedule of requirements and shall satisfy the Buyer.

19- Documents Confirming the Qualification of the Bidder

- 19-1-The documents proving the Bidder's qualifications, in the event of awarding the bid in its favor, shall meet the following conditions:
- a- The Bidders who are not the manufacturers or producers of commodities to be supplied shall submit the authorization of the manufacturer to market the commodities according to the form in chapter four, and the form of authorization by the manufacturer or the producer to market the commodities in the country of the Buyer, if stipulated in the Instructions to Bidders.

- b- If the Bidder is not doing business in Iraq, and if the same is required in the bid data sheet, it shall be represented in Iraq by a proxy that is ready and capable of conducting the maintenance operations and providing spare parts as stated in the contract conditions and/or the technical specifications.
- c- The Bidder shall meet all the qualifications and standards stipulated in section three: Evaluation and Qualification Criteria.

20- Period of Validity of Bids

- 20-1- The Bid shall remain valid beyond the deadline for submission specified by the Buyer as stated in the bid data sheet. Any Bid with shorter validity shall be disregarded.
- 20-2- In some exceptional circumstances, the Buyer may request extension for the validity of Bid beyond the validity period specified. In this case, the request for extension and reply thereof shall be in writing. If Bid's security is required as per article 21/Instructions to Bidders, The Security shall be extended for the same period. The Bidder is entitled to reject the request for extension without losing the Bid's guarantee. The Bidder who consented to the Employer's request shall not be required or entitled to extend its Bid's validity except for the case described in Para 20-3/Instructions to Bidders.
- 20-3- In the contracts where it is not permitted to revise and amend the prices, and in the event of delay in issuing the awarding letter for more than 56 days as of the date of the primary bid's validity, prices shall be revised and amended as specified in the request for extension. Bids shall be outweighed depending on the bids prices regardless of the amendment of prices as indicated above.

21-Bid Guarantee

- 21-1- The Bidder shall submit, as part of the Bid, "bid guarantee" if required in the bid data sheet.
- 21-2- The guarantee amount shall be equal to the amount specified in the bid data sheet in Iraqi currency or any exchangeable currency. Also,
 - a- It shall be submitted in the form of bank's letter of guarantee or certified check issued by the Government of Iraq, or any other form to be mentioned in the bid data sheet.
 - b- The guarantee shall be issued from a recognized bank in Iraq as per the publication issued by the Central Bank of Iraq on the Banks' financial adequacy, to be selected by the Bidder. If this banking institution exists outside Iraq, a corresponding financial institution recognized inside Iraq shall be adopted, to enable operating the guarantee,
 - c- It shall be identical to any of the forms in section four: Bid Forms or any other form to be adopted by the Buyer before submitting the Bid,
 - d- It shall be negotiable promptly on issuing a written request by the Buyer in the event of breaching the conditions stated in Para 21-5/Instructions to Bidders,
 - e- The original shall be submitted; duplicates are not accepted,

- f- It shall be valid for 28 days after the Bid's validity or after the date of bid extension expiry period, if required according to Para 20-2/Instructions to Bidders.
- 21-3- If the bid guarantee is required pursuant to Para 21-1/Instructions to Bidders, then any Bid that does not include bid guarantee shall not be accepted and be considered noncompliant.
- 21-4- Bid guarantee shall be returned to the non-winning Bidder promptly after the winning Bidder submits a performance guarantee as per article 44/Instructions to Bidders and signing the Contract.
- 21-5- The bid guarantee shall be confiscated if the winning Bidder's fails in:
 - (1) Sign the Contract as per Para 43 of the "Instructions to Bidders".
 - (2) Submit the performance guarantee as per Para 44 of the "Instructions to Bidders".
- 21-6- The Bid's guarantee for the JV shall be in the name of the Bidder's JV and if the JV is still not incorporated legally by the time of submitting the Bid, the Bid's security shall be in the name of all independent partners stated.
- 21-7- the buyer has the right, (If stipulated in the bid data sheet), to declare the Contractor ineligible to be awarded any contract for the period of time stipulated in the bid data sheet in any of the following events:
 - a- If the winning Bidder fails to sign the Contract as per Para 43/Instructions to Bidders
 - b- or to submit the performance bond as per article 44/Instructions to Bidders.

22- Method of Submitting and Signing of Bid

- 22-1- The Bidder shall submit one original copy of its Bid marked as "Original" from the Bidding Documents as stated in 11/Instructions to Bidders. Also, the Bidder shall submit a number of copies marked as "Copy" as stated in the bid data sheet. In the event of discrepancy between the copy and the original, the Original shall be relied on.
- 22-2- All originals and copies of the Bid shall be written in ink and signed by a Bidder's representative. Conversion shall be authenticated by the Notary Public.
- 22-3- Any traces of deletion or writing between the lines shall not be considered valid unless accompanied with the signature of the person authorized to sign the Bid.

D- Submission and Opening of Bids

23- Delivering, Sealing and Marking of Bid

23-1- Bidder shall deliver its Bid in hand or send it through registered mail.

- a- When Bids are delivered in hand or through email (if the same is indicated in the bid data sheet), the originals and copies of the Bid and the alternative Bids (if permitted as per article 13/Instructions to Bidders) shall be delivered in seParated envelopes, provided that such envelopes shall be marked whether they contain originals or copies. Such envelopes shall be, then, put in one envelope. Thereafter, procedures shall be followed as per 22-2 and 22-3/Instructions to Bidders.
- b- Bidders may submit their Bids electronically if the same is indicated in the bid data sheet as per the instructions stated in the bid data sheet.

23-2- The outer and inner envelopes shall state:

- a- The Bidder's name and address.
- b- The Buyer's address according to 24-1/Instructions to Bidders.
- c- The definition of Bid as referred to in sub-Para 1-1/Instructions to Bidders, and any other identification references stated in the bid data sheet.
- d- Notice of "Not to open before the Bids opening date" as per sub-Para 27-1/Instructions to Bidders.

23-3- The Buyer shall not be held responsible for any lost or opened Bid that is not closed, sealed and marked as required.

24-Deadline for Submitting of the Bids

24-1- The Buyer shall receive the Bid at the specified address on the date and time specified in the bid data sheet.

24-2- The Buyer has the right to extend to the Bidding deadline by amendment of documents as per article 8/Instructions to Bidders; in this event the rights and obligations of the Buyer and the Bidder shall be extended according to the new date.

25-Late Bids

25-1- The Employer shall not accept any Bid delivered after the Deadline as per Para 24/Instructions to Bidders. Accordingly, any Bid received after the specified period shall be considered "Late", rejected and returned unopened to the Bidder.

26- Withdrawing, Replacing and Amending of Bids

- 26-1- The Bidder may withdraw, replace or amend its Bid after its submission by sending a written notice as per article 10/Instructions to Bidders, provided that the notice shall be signed by the authorized person and accompanied with a copy of the as per Para 22-2/Instructions to Bidders. And the notices on the substitution or withdrawal shall be attached to the official authorization. All written notices shall:
- a- Be submitted as per Para 22 and 23/Instructions to Bidders. The envelopes shall be marked as Withdrawing, Replacing or Amending.
 - b- Be received by the Buyer before the tender deadline as per Para 24/Instructions to Bidders.
- 26-2- Bid to be withdrawn as Para 26-1/Instructions to Bidders shall be returned to the Bidder unopened.
- 26-3- The Bidder may not withdraw, substitute or amend the Bid with the period between the tender deadline and the expiry of Bid's validity as specified in the bid data sheet or any extension thereto.

27- Opening of Bids

- 27-1- The (Bids Opening Committee) shall open the Bids at the presence of the bidders or their authorized representatives in public session at the time and place specified in the bid data sheet. According to Para 23-1, the procedures regarding opening the electronically submitted bids shall be referred to in the bid data sheet.
- 27-2- The envelopes marked as Withdrawal shall be first opened and read to the public; the envelope containing the withdrawn Bid shall be returned to the Bidder unopened. The withdrawal letter shall not be considered valid unless there's an official authorization therefore; such authorization shall also be read publicly during the bids opening session. Thereafter, the envelopes marked as Substitution shall be opened and read publicly and shall be substituted with the original Bid which shall be returned to the Bidder unopened. No Bid shall be amended unless there's a letter of substitution stating an official authorization that is read publicly in the opening session. The envelopes marked as Amendment shall be opened and read publicly; no amendment shall be adopted unless there's a written letter thereof stating an official authorization. Only the bids opened and read during the bids opening session shall enter into competition and evaluation.
- 27-3- The envelopes shall be opened one by one; the name of Bidder shall be read, whether there's amendment notice shall be stated, the prices offered and discounts and alternative bids shall be read. Also, shall be mentioned the Bid's security, if required, and any other details which the Bids Opening Committee deems necessary to mention. Only discounts and alternative bids read publicly in the session shall enter the competition and evaluation. No Bid mentioned in the bids opening session, other than the Late Bid as per Para 25-1/Instructions to Bidders, shall be rejected.
- 27-4- The Bids Opening Committee shall set up a minutes of the bids opening session which shall at minimum contain the name of Bidder, whether the Bid has been withdrawn, substituted or amended, Bid Price as per each part if required, to include any discounts and alternative proposals if applicable, whether the Bid security is included if applicable. The Buyer shall require the Bidders present to sign the minutes of bids opening session. All bidders who submitted bids before the deadline shall receive a copy of the bids opening session's minutes. Also, the information in the minutes shall be published on the website.

E- Evaluating and Comparing Bids

28- Confidentiality

- 28-1- The information on the examining, evaluation, comparison and post-qualification of Bids and the recommendations on awarding the bid shall not be disclosed to the Bidders or any other person until the result thereof is announced officially in the bid's awarding announcement.
- 28-2- Any attempt by the Bidder to influence the contracting party (committee of evaluating and analyzing the bids) in the process of Bid's examining, evaluation, comparison and awarding the Bid may result in rejecting its Bid.
- 28-3- Notwithstanding Para 28-2/Instructions to Bidders, if any Bidder is interested in approaching the Buyer on any subject related to the Bid during the period between Bid Opening and awarding, it may conduct the same in writing.

29- Clarification of Bids

- 29-1- To facilitate the process of examining, evaluation and comparison of Bids, the contracting party (committee of evaluating and analyzing the bids) may ask the Bidder to clarify its Bid. Any clarification from the Bidder not in response to a question shall not be considered. The request for clarification and the answer thereto shall be made in writing. No demand, offer or permit of change in the price is allowed, unless this is intended for correcting computing errors discovered by the Buyer during the Bid's evaluation as per Para 31/Instructions to Bidders.

30- Bids Response

- 30-1- The Buyer's determination is adopted whether the Bid is in accordance with the contents of the Bid itself.
- 30-2- The compliant Bid is the Bid meeting all the terms, conditions and specifications stated in the tender documents without significant deviation, restriction or deletion. The significant deviation, restriction or deletion is:
- a- Affects, in any way, the quality or performance of the commodities and services specified in the Contract.
 - b- Limits, in any way, in discordance with the tender documents, the Buyer's rights or the Bidder's obligations.
 - c- Affects, in the event of Buyer's acceptance of such significant reservation or deviation, the competition with other Bidders.
- 30-3- The Buyer shall disregard the Bid if it is noncompliant to the Bid Conditions. The Bidder is not allowed to comply with the conditions through making deviation, deletion or restriction on the information submitted after the public bids opening session.

31- Non-Conformity of Specifications, Errors and Omitting

- 31-1- If the Bid is compliant to the required essential conditions, then the contracting party (committee of evaluating and analyzing the bids) may require the Bidder to submit any necessary information or documents well in advance to redress any deficiency not connected to the essential materials and related to the documentation. Such deficiency or deletion shall have no effect on the prices stated in the Bid in any way. Failure by the Bidder to submit the required information shall result in rejecting its Bid.

31-2- If the Bid is compliant to all conditions, then the Buyer shall have the right to correct any computing errors as per the following conditions:

- a- If there's great contradiction between the unit price and the line item amount obtained from multiplying the unit price by the quantity, the unit price shall be adopted and the line item amount shall be corrected accordingly, unless, in the Bids Analysis Committee's opinion, there is a mistake in the decimal point of the units price then the amount shall be adopted and the unit price shall be corrected.
- b- If there's error in the grand total of the line item amounts, the subtotals shall be adopted and the grand total shall be corrected.
- c- If there's discrepancy between the in-writing and in-figure amount of any line item, the in-writing amount shall be adopted, unless there's a computing error in determining the amount; whereupon the in-figure amount shall be adopted according to the secondary Paragraphs (a) and (b) above.

31-4- If the winning Bidder does not consent to the corrections conducted by the contracting party (committee of evaluating and analyzing the bids) , the offer shall be disqualified and the Bid security related thereto shall be confiscated.

32-Initial Auditing of Bids

32-1- The contracting party (committee of evaluating and analyzing the bids) shall examine the Bids to verify that all the documents required in Para 11/Instructions to Bidders are included and to verify that the information exist in the documents submitted are complete.

32-2- The contracting party (committee of evaluating and analyzing the bids) shall confirm its receipt of the following information and documents:

- a- Form of contract, as per Para 12-1/Instructions to Bidders.
- b- Price Table as per Para 12-2/Instructions to Bidders.
- c- Bid's security as per Para 21/Instructions to Bidders, if required.

If any of these information or documents is not available, the Bid shall be disregarded.

33- Auditing the Terms and Conditions and the Technical Evaluation

33-1- The contracting party (committee of evaluating and analyzing the bids) shall check the Bid to verify that the terms and conditions specified in the General and Special Conditions of the Contract are fulfilled by the applicant without any significant restrictions or deviations.

33-2- The contracting party (committee of evaluating and analyzing the bids) shall evaluate the technical aspects of the submitted Bid as per article 18/Instructions to Bidders to verify that all the requirements stipulated in part six: schedule of requirements are available without any material restrictions or deviations.

33-3- If the contracting party (committee of evaluating and analyzing the bids), after checking the terms and conditions and the technical evaluation, decides

that the Bid does not fulfill the conditions required in 30/Instructions to Bidders, the Bid shall be disregarded.

34-Conversion to Unified Currency

34-1- For the comparison and analysis purposes, the contracting party (committee of evaluating and analyzing the bids) shall convert the currencies of the prices of various Bids to the currency stated in the bid data sheet adopting the exchange rate issued by the Central Bank of Iraq on the date specified in the bid data sheet for that currency.

35-Margin of Preference

35-1- the Margin of Preference shall not adopted for the local bidders, unless stipulated in the bid data sheet, then, the specified value of the margin shall be indicated in the bid data sheet.

36-Evaluation of Bids

36-1- The contracting party (committee of evaluating and analyzing the bids) shall evaluate all the Bids that went through to this phase to verify that their contents fulfill the required conditions.

36-2- The contracting party (committee of evaluating and analyzing the bids) shall, in evaluation of Bids, employ all factors, methods and standards specified in Para 36/Instructions to Bidders. No other methods or standards may be employed.

36-3- In evaluating the Bid, the contracting party (committee of evaluating and analyzing the bids) shall consider the following:

- a- Price of Bid submitted as per Article 14,
- b- Amendment of the prices for the purpose of correcting the computing errors as per 31-3/Instructions to Bidders.
- c- Amendment of prices resulting from the discounts offered as per Para 14-4/Instructions to Bidders.
- d- Amendments resulting from the application of evaluation criteria specified in part three: Evaluation and Prequalification Criteria in the bid data sheet.

36-4- The evaluation by the contracting party (committee of evaluating and analyzing the bids) shall include, in addition to the prices, other factors as per article 14/Instructions to Bidders. These factors may be related to the specifications, performance and conditions of acquisition of commodities and services. The effect of such factors, if any, shall be described in the financial conditions to facilitate comparison between the Bids, unless stated otherwise in S3: Evaluation and Prequalification Criteria and then the method, criteria and bases of outweighing shall be those referred to in 36-3-d.

36-5- If the bid data sheet permit parting and allow the Bidder to submit its prices for a table (part) or more from the tables (parts) constituting the general national tender, then the Buyer may contract with more than one supplier and the bids evaluation and comparison criteria stated in chapter three shall be adopted.

37- Bids Comparison

The contracting party (committee of evaluating and analyzing the bids) shall compare the contents of all the compliant Bids in order to determine the lowest price Bid (that is financially and technically compliant) as per Para 36/Instructions to Bidders.

38-Subsequent Qualifications to Bidders

- 38-1- the contracting party (committee of evaluating and analyzing the bids) , after selecting the lowest-cost Bid (that is financially, technically and administratively compliant), shall decide whether the Bidder is qualified to execute the contract satisfactorily.
- 38-2- Such decision shall be passed after checking and reviewing all the documents proving the Bidder's qualifications as per Para 17/Instructions to Bidders.
- 38-3- In light of 38-1 and 38-2, post qualification of the winning Bidders is considered a basic condition for awarding the bid; if it is not compliant to the qualification conditions referred to above, it shall be disregarded and the next lowest-cost Bid shall be considered.

39-Buyer's Right to Accept or Reject any Bid

- 39-1- The Buyer has the right to accept or reject any bid. Also it has the right to cancel the tender and reject all bids submitted any time before awarding the bid without being held liable towards the Bidders.

F- Awarding the Bid

40- Awarding Criteria

- 40-1- The bid shall be awarded to the lowest-cost Bid that is compliant to all the conditions stated in the Bid, after verifying its qualification and abilities to execute the contract in the best possible way.

41-Buyer's Right to Change the Quantities upon Awarding the Tender

- 41-1- The Buyer, upon awarding the bid, shall reserve the right to change (increase or decrease) the quantities specified in chapter six: schedule of requirements, provided that the change shall not exceed the rates specified in the bid data sheet and without any change to the unit prices or any other conditions stipulated in the tender documents.

42- Notification of Awarding the Bid

- 42-1- The Buyer shall, before the expiry of Bid's validity, shall notify the winning Bidder with accepting its Bid in writing.
- 42-2- Soon after issuing the acceptance letter to the winning Bidder, the Buyer shall notify the non-winning Bidders therewith stating the reasons of their

failure and releasing their Bid guarantee submitted, except for what is stipulated in 42-5 hereafter.

42-3- Also, soon after issuing the acceptance letter, the Buyer shall publish the results of Bids analysis on its website, to include the following:

- a- Names of Bidders who participated in bidding.
- b- Prices of Bids as read upon opening the Bids.
- c- Names of Bidders and their Bids prices after analysis.
- d- Name of disregarded bidders and reasons for disregarding.
- e- The name of winning Bidder, its Bid price and the period of execution, plus a summary description of works covered by the contract.

42-4- Bid's acceptance letter shall be considered a binding contract until a formal contract is signed.

42-5- Until the winning Bidder submits a performance guarantee as per Article 44 and signs the contract, the Buyer holds the Bids guarantees of the second and third nominated Bidders.

43- Signing the Contract

43-1- Soon after the Bid acceptance letter is sent, the Buyer shall send to the winning Bidder with the Form of Contract and the Special Conditions of the Contract.

43-2- the winning bidder, in a period not exceeding (14) days or twenty nine (29) days including the warning period from the date of receiving the letter of acceptance after the end of appeal period, has to sign the contract text and fix its date and return it to the buyer, unless it is stipulated otherwise in bid data sheet; otherwise the supplier shall bear the legal consequences stipulated in the prevailing instructions of executing the government contracts.

43-3- In addition to the stipulations of 43-2/Instructions to Bidders above, if the contract is not signed due to obstacles by the Buyer or the Buyer's country, the Bidder shall not be bound by its Bid. Also if such obstacles are stated in instructions from the country of provision of commodities, systems or services, the Bidder shall not be bound by its bid. The Bidder, upon applying for exemption from its obligations, shall prove to and convince the Buyer that its failure to sign the contract is not attributable to omission or violation from its part in performing any formal matters required under the General Conditions of the Contract and the it has applied for the permits and authorizations required for exporting the commodities, systems or services.

44- Good Performance Guarantee

44-1- The Bidder, if required under the General Conditions of the Contract, shall, within 29 days as of the date of awarding the bid, including the warning period, provide a good performance guarantee, unless the bid data sheet states otherwise. It shall use the form of good performance guarantee in chapter nine: contract forms or any other form accepted by

the Buyer. The Buyer shall notify all Bidders with the name of winning Bidder and release their guarantees as per 21-4/Instructions to Bidders.

44-2- Failure by the winning Bidder to submit the good performance guarantee or to sign the Contract shall be good reason for revoking the award and confiscating the Bid's guarantee. In such case, the Buyer shall have the right to award the Contract to the runner-up Bidder whose Bid is compliant to all the required conditions and is capable of executing the terms of Contract in the best possible way. The Buyer may take the necessary actions to charge the party in default with the price difference.

Section Two: Bid Data Sheet

Clause in Instructions to Bidders	A- General
1-1	Buyer's Name: SOUTH REFINERIES COMPANY/ STATE COMPANY
1-1	Tender's Name and Number: CONTROL VALVES FOR LUBE OIL PLANT AND SPARE PARTS 389/2017/ E
2	Financing Resource : the Federal (Operational)Budget of the Government of Iraq
2-1	Project's name and number in the Federal(Operational)Budget: CONTROL VALVES FOR LUBE OIL PLANT AND SPARE PARTS 389/2017 E
4-3	There is a list of the companies that are unqualified or banned from working with the Ministry of Planning and Developmental Cooperation/Government Public Contracts Department http://www.mop.gov.iq
5-1	Eligible countries : WEST EUROPE,USA,UAE,JAPAN.
5-3	The term "origin" means the country from which the commodities are manufactured, or through assembling produce commercial commodities that have drastically different basic properties than their components.
	B- Contents of Bid Documents
7-1	For the purpose of clarification of Bid's objectives only ,the Buyer's addresses: To: CONTRACTS &PURCHASE DEPARTMENT -SOUTH REFINERIESCOMPANY- BASRA- REPUBLIC OF IRAQ Postal Code :N/A Email: CONTRACTS@SRC.GOV.IQ
7-1	Questions on the Bid Documents shall be submitted to the Buyer's contracting departments no later than(7 days before closing date)

	C- Bid's Preparation
10-1	Bid's Language: Arabic, English
11-1(h)	The Bidder shall submit the following additional documents : - STATEMENT OF APPROVAL TO PARTICIPATE IN TENDERS FROM TAX AUTHORITIES((for local suppliers). - CERTIFICATE OF INCORPORATION LEGALIZED BY THE IRAQI EMBASSY FOR INTERNATIONAL COMPANIES. - CHAMBER OF COMMERCE MEMBERSHIP CARD AND THE IDENTIFICATION DOCUMENTS OF THE MANAGER(for local supplier only). - Technical specifications for valves. - Sectional & dimensional drawings, part list,data sheets &performance curves for valves.
13-1	Alternative Bids : it is not permitted to be considered.
14-5	The Incoterms edition is : 2010
14-6	The Bid prices offered by the Bidder upon executing the contract are non-adjustable
14-7	The priced items in each special list(part)in the national competitive bid shall not be less than 100% of the total items constituting such list. The prices shall be valid at 100% of the quantities stated next to each item of such lists.
15-1	Prices shall be in the following currency : Iraqi Dinars, US Dollar, Euro
18-3	The expected life time of commodities : Not Applicable
19-1-a	Authorization of the Manufacturer to the supplier Bidder: Not applicable
19-1-b	After sale services Not Applicable
20-1	Bid's validity : [120]days from of the Closing Date .
20-3	The contracts, in which it is not permitted to adjust prices, and in case of delay in issuing the award decision for a period exceeding (14) days after the date initial bid expiry date, non applicable the prices are to be reviewed and adjusted : Non Applicable

21-1	Bid's guarantee is required
21-2	The Bid guarantee price is: (32,500) Only Thirty Two thousand Five hundred US dollars
21-2-a&b&f	The Bid guarantee shall be submitted in the form of (bank's letter of guarantee or certified check or a Bank Transfer), directed to our company (SRC), and shall have: Name and Number of Tender . The guarantee shall be issued from a recognized bank in The Central Bank of Iraq. Its shall be valid for(28days)after the Bid's validity.
21-7	In the event the Bidder conducts anything stated in(a)or(b)of this clause, the Buyer shall have the right to declare the Bidder disqualified and suspend its participation in tenders for a period of three years
22-1	In addition to the original contract ,the number of copies is(Two hard copies and one soft copy).
	D-Submission and Opening of Bids
23-1-a	The Bidders May Not send their Bids via email.
23-1-b	Not Applicable
23-2-c	The inner and outer envelopes shall have the special additional marks TO /south refineries co. , FROM/ name of supplier ,Tender number and name ,Company stamp, authorized signature and closing date.
24-1	For the purpose of Bid's submission ,the Buyer's address is: To: CONTRACTS & PURCHASE DEPARTMENT -SOUTH REFINERIES COMPANY Address: AL SHUAIBA/ BASRA- REPUBLIC OF IRAQ Floor and room number: ROOM OF RECEIVING & OPENING Bids COMMITTEE City: Basra Tender Deadline: 12 July 2017 Time: 12:00 AM BASRA LOCAL TIME
27-1	Bids shall be opened in the following time and place: Address : AL SHUAIBA/ BASRA- REPUBLIC OF IRAQ Floor and room number: ROOM OF RECEIVING & OPENING BIDS COMMITTEE City: Basra Date:12 July 2017 Time: 01:00 PM BASRA LOCAL TIME OR The Day after.
27-1	Not Applicable

	E-Evaluating and Comparing Bids
34-1	Prices submitted in other currencies shall be converted to their equivalent in : US Dollar . Source of currency exchange : Bulletin of The Central Bank of Iraq . Date of exchange rate: The Opening Date of Tender .
35-1	Insert (it is to be adopted, not adopted)/ Margin of Preference as a factor in analyzing bids. If the limits of methodology are adopted : In accordance with Instructions for Implementing Government Contracts No. (2), 2014
36-3-a	Evaluation and comparison shall be conducted on the bases of (items and parts) The Bids shall be evaluated and compared on the basis of line item totals. If the priced table of a Bidder contained a non-priced item, then its price shall be considered as covered by the prices of other items. Also, if an item is not listed in the schedule of prices in a compliant Bid, its average price in compliant prices shall be taken and added to the price of such Bid to determine its total cost for the purpose of price comparison between the Bids.
36-3-d	Evaluation shall be conducted using the criteria of section three: Evaluating and Comparing Bids: a- Deviation in supply times no b- Deviation in payment times no c- Cost of replaceable parts and spare parts for the purposes of maintenance and after sale service for the equipment stated in Bid no d- Availability of after sale service and spare parts in the country of buyer for the equipments offered in the Bid no e- Cost estimate for the purposes of operation and maintenance through operation lifetime of equipments no f- Performance and productivity of equipments provided no
36-5	Not Applicable
	F- Awarding of Tender
41-1	Upper limit of percentage permitted to increase the quantities in the same prices (20%) Upper limit of percentage permitted to decrease the quantities in the same prices (15%)
43-2	Contract shall be signed within 14 working days as of the date of issuing the letter of acceptance
44-1	A good performance bond shall be submitted within 14 working days as of the date of issuing the letter of acceptance and before the Contract is signed

Section Three: Evaluation and Qualification Criteria For the Contracts of Supplying Commodities

This Section supplements the Instructions to Bidders, contains the criteria employed by the Buyer/Bids Analysis Committee for the evaluation of the Bid and determines whether the required qualifications are fulfilled by the Bidder and other criteria are employed.

The Buyer may select the criteria it deems suitable for the execution of the supply process and it may enter the method it deems suitable by using the samples listed below or using another acceptable method.

Contents

- 1- Evaluation criteria (36-3-d/Instructions to Bidders)
- 2- Multiple contracts (36-5/Instructions to Bidders)
- 3- Requirements for Subsequent Qualification (38-2/Instructions to Bidders)

1- Evaluation Criteria(36-3-d/Instructions to Bidders)

In evaluating a Bid, shall be considered, in addition to the Bid's price as per Para 14-6/Instructions to Bidders, one or more of the following factors stipulated in Para 36-3-d/Instructions to Bidders and 36-3-d/bid data sheet, employing the following methodological criteria:

a- DeliverySchedule(as per the INCOTERMSreferred to in thebid data sheet) N/A

The Commodities exist in the Schedule of Commodities shall be delivered within reasonable period of time (i.e. after the primary date and before the deadline of delivery) as specified in section six: Delivery Schedule. No priority shall be given to the commodities delivered before the early time, and the Bids to deliver commodities after the deadline shall be considered noncompliant. For the purposes of evaluation only, the prices of Bids that deliver commodities after the early delivery time as specified in S6: Delivery Schedule, if the bid data sheet stipulates the same, as stated in Para 36-6-d/bid data sheet.

b- Amendment of Payment Schedule N/A

Prices shall be submitted by Bidders as per the payment schedule referred to in the Special Conditions of the Contract and the Bids shall be evaluated according to the rules specified in that schedule. Bidders are allowed to submit an alternative payment schedule and propose discount to the prices quoted in their original Bid in the event their proposed alternative Bid is accepted. The Buyer shall have the right to take into account the proposed alternative payment schedule as well as the proposed discount percentage.

c- Cost of the Essential Replaceable Parts andCompulsorySparePartsandAfterSale Services(insert one of the following alternatives) N/A

1- The cost of compulsory spare parts, replaceable parts and after sale services according to the lists submitted by the supplier that are set up according to the instructions of manufacturer of commodities for maintenance purposes throughout the operation lifetime of the commodities referred to in Para 18-3/bid data sheet shall be added to the Bid price for the purpose of comparison and outweighing between the offers or 18-3.

2- The Buyer shall set up a list of the requirements of the highly consumable and high cost parts and the compulsory spare parts and estimated quantities during the primary operation period specified in 18-3/bid data sheet. The Bidder shall price these and add them to the contract price for comparison purpose only.

d- Provision of After Sale Servicesfor Commodities and Spare Parts in the Buyer's Country N/A

If Para 36-3-d/Bid Data Sheet stipulates that the Bidder shall offer the cost of providing after sale services, such as maintenance and provision of spare parts in the Buyer's country, the cost of such services shall be added to the contract price for comparison purpose.

e- PlannedCostof OperationandMaintenance N/A

Shall be added an amendment margin to the cost of operation and maintenance of commodities to be added to the contract price for comparison purpose only if the same is stipulated under Para 36-3-d & e. Such cost margin shall be specified according to the method referred to in the 36-3-d & e/Bid Data Sheet.

f- Performance and Productivity of Equipment N/A

A margin of amendment of cost calculated on the basis of the performance and efficiency of commodities proposed by the Bidder in comparison with the efficiency and performance of the commodities referred to in the Bidding Documents, if the same is stipulated in Para 36-3-d & f/Bid Data Sheet according to the method specified in the same clause shall be added to the contract price for comparison purpose only.

g- Any Further Criteria N/A

If it is required to add further criteria for outweighing and comparison, these shall be referred to in 36-3-d & g/Bid Data Sheet.

2- Multiple Contracts (36-5/ Instructions to Bidders) N/A

The Buyer may award more than one Bid over the Bid submitted that offers the lowest value for a set of Bids (so that there's one Bid for each contract) which fulfills all the criteria required in the subsequent qualification phase (as referred to in Para 38-2/Instructions to Bidders of section three: "Requirements of Subsequent Qualification").

The Buyer shall:

- a- Evaluate the Bid that fulfills the minimum limit of percentages specified in the Instructions to Bidders, only with respect to the items indicated in the special lists and the quantities indicated next to these items, as specified in Para 14-8/Instructions to Bidders
- b- Shall be taken into account:
 - (1) Lowest cost Bids as to each special list
 - (2) Discount of price for each special list and the method of application thereof as offered by the Bidder in its Bids.

3- Requirements of Subsequent Qualification (38-2/Instructions to Bidders)

After determining the lowest evaluated Bid as per sub-Para 37-1/Instructions to Bidders, the Buyer shall conduct the subsequent qualification procedures to the Bidder as per Para 38/Instructions to Bidders employing the specified requirements only. While the requirements not covered by the text below shall not be used in the evaluation of the qualifications of Bidders.

a- Financial capability,

The Bidder shall submit documented evidence on its ability to meet the following financial requirements: **1- Final Accounts Profit rate for the past three consecutive years Authorized and audited by a Recognized Certified Accountant. 2-Cash liquidity equivalent to (3,300,000) Three million Three hundred thousand US dollars.**

b- Experience and technical capability,

The Bidder shall submit documented evidence on its ability to meet the requirements of technical experience listed below:

: Providing evidence to prove outfitted equipment (control valve and devices, etc.) to oil companies or public sector companies in Iraq

c- The Bidder shall submit documented evidence that the commodities it offers meet the following requirements applications :Submitting a letter from the manufacturer proving that required equipment is the appropriate for the required use.

Section Four: Bid Forms
For the Contracts of Supplying Commodities

Bidder's Information Form	35
JV's Partners Information Form.....	36
Bid Submission Form	37
Schedule Form of Prices	39
Bill of Quantities	40
Bid Guarantee Form (Bank Guarantee)	42
Authorization of the Manufacturing Party.....	43

Bidder's Information Form

[The bidder shall fill out this form according to the information listed below. No amendment to this form shall be allowed, and no alternative shall be accepted]

Date: [Insert the Bid's submission date (day/month/year)]

National competitive Bid's number: [Insert Bid's No.]

Page _____ of

1- Bidder's Legal Name: [Insert Bidder's Name]

2- In the event of Joint Venture Bidder, the legal name of each partner: [Insert the legal name of each partner in the JV]

3- The country in which the Bidder is actually registered or it intends to be registered therein: [Insert country]

4- Bidder's registration year: [Insert registration year]

5- Bidder's official address in its country of registration: [Insert address]

6- Information of Bidder's authorized representative:

Name: [Insert authorized representative's name]

Address: [Insert authorized representative's address]

Tel./Fax: [Insert authorized representative's tel. and fax]

Email: [Insert authorized representative's email]

7- Attached photocopies of original documents: [Check if the original documents are attached]

- The articles of incorporation of the company stated in 1 above, as per sub-Para 4-1 and 4-2/Instructions to Bidders.

- In the event of a JV bidder, shall be attached a letter of incorporation of the joint venture or a joint agreement as per sub-Para 4-1/Instructions to Bidders.

- In the event of a State owned organization, shall be submitted the documents proving the organization's legal and financial independence according to law, as per sub-Para 4-5/Instructions to Bidders.

JV's Partners Information Form

[The Bidder shall fill out this form according to the instructions stated below] Date:

[Insert the Bid's submission date (day/month/year)]

Local competitive Bid's number: [Insert Bid's No.]

Page _____ of _____

1- Bidder's Legal Name: [Insert Bidder's Name]

2- Legal Name of the Joint Venture: [Insert the legal name of each partner in the JV]

3- The country in which the Bidder is actually registered or it intends to be registered therein:
[Insert country]

4- Bidder's registration year: [Insert registration year]

5- Bidder's official address in its country of registration: [Insert address]

6- Information of Bidder's authorized representative of the joint venture:

Name: [Insert authorized representative's name of the joint venture]

Address: [Insert authorized representative's address of the joint venture]

Tel./Fax: [Insert authorized representative's tel. and fax of the joint venture]

Email: [Insert authorized representative's email of the joint venture]

Bid Submission Form

[The Bidder shall fill out this form according to the instructions stated below. No amendment to this form shall be allowed, and no alternative shall be accepted]

Date: [Insert Bid's submission date (date/month/year)]

National competitive Bid's number: [Insert Bid's No.] Bid

Invitation No.: [Insert Invitation's No.]

Alternative No.: [Insert Reference No. if it is alternative Bid]

To: [Insert Buyer's full name]

We, the signatories below, acknowledge that:

a- We have studied the Bid documents and we have no reservations thereon, including the annexes: [Insert number and date of issuance of each annex],

b- We offer provision of the following commodities and related services in accordance with the Bid Documents and the delivery schedule specified in the Schedule of Requirements [Insert summary description of the commodities and related services],

c- The total price of our Bid, to except for the discounts offered in (d) below: [Insert total price in writing and in figures],

d- Discounts offered and method of application are:

Discounts: If our Bid is accepted, we shall apply the following discounts. [Specify in details each discount offered and on which of the items in the Schedule of Requirements it shall be applied],

Method of discounts applications: Discounts are applied employing the following method: [Specify in details the method to be employed in discounts application],

e- Our Bid shall be valid throughout the period of time specified in sub-Para 20-1/Instructions to Bidders from the Bid deadline as specified in sub-Para 24-1/Instructions to Bidders; it remains binding to us and is accepted any time prior to the expiry of validity period,

d- We pledge, in the event our Bid is accepted, to submit a good performance guarantee as per article 44/Instructions to Bidders and 18/General Conditions of the Contract, as well as signing the Contract as per article 43 and according to the timings stipulated in the Bid Data Sheet. Otherwise, we shall undertake all legal actions taken against us, to include confiscation of the Bid guarantee by us and charging us with the price difference resulting from awarding the tender to another bidder.

g- We, including the subcontractors or suppliers of any part of the Contract, holding the citizenship of eligible countries (insert the Bidder's citizenship as well as the citizenship of all parties involved in the offer, in the event of JV Bidder) and the citizenship of each subcontractor supplier.

h- We have no conflict of interests as per sub-Para 4-2/Instructions to Bidders,

i- Our company or any of its subsidiaries or affiliates, to include subcontractors or suppliers for any part of this Contract, had never been deemed eligible according to the Law of Iraq and the official provisions and our activities have not been suspended or being included in the black list by the Ministry of Planning as per Para 4-3/Instructions to Bidders;

j- Fees, commissions and gratuities, as follow, which are or to be disbursed for completing the Bid or executing the Contract: [Insert full name and full address of each recipient, reason for disbursement, amount and currency]

Recipient's Name	Address	Reason	Amount

(if no payment is or to be disbursed, insert "None")

k- We realize that the Bid and the letter of award attached to your written consent constitute a binding contract between us until setting up and signing the formal contract,

l- We realize that you are not obliged to accept the lowest price bid or any other bid you receive.

Signature: [Insert signature and title of the mentioned person]

In its capacity: [Insert official capacity of the delivery form signatory]

Name: [Insert full name of the person to sign the Bid's submission form]

Duly authorized to sign the Bid on behalf of: [Insert full name of Bidder]

Signed on _____ Day _____ Month _____ Year _____

[Insert signing date]

Schedule Form of Prices

[The bidder has to fill the schedule form of prices according to the instructions written hereunder, and the items list in the first column of the schedule of prices must conform to the list of commodities and related services and specified by the buyer in the schedule of requirements].

Bill of Quantities

				Date: Competitive Bid No.: Alternate No.: Page No.: From:		
1	2	3	4	5	6	7
Item No.	Commodities Description	Date of Delivery	Quantities and Units	Unit Price DDP delivered to warehouses	Total Price of each Item	Country of Origin
[Insert no. of each item]	[Insert names of commodities]	[Insert date of delivery]	[Insert units numbers that must be provided and names of units]	[Insert unit price]	[Insert total price of each item]	
Total Price: Commodities						

To specify the method of commercial selling in the condition of declaration whether CIP, FOB, C&F, CIF ... etc according to INCOTERM.

Schedule of Quantities and Completion – Services related to the Contract

Date: National Competitive Bid No.: Alternate No.: Page No.: From:						
1	2	3	4	5	6	7
Service No.	Description of Service	Country of Origin	Date of Delivery in the Final Destination	Quantities and Unit	Unit Price	Total Price of Service
[Insert service no.]	[Insert name of service]	[Insert name of the country of origin]	[Insert date and place of final delivery for each service]	[Insert numbers of units which will be provided and names of units]	[Insert unit price of each item] in figure an writing	[Insert total price of each item] in figure an writing
Total Price: Associated Services						

Name of Bidder: [Insert full name of bidder]

Signature of Bidder: [Signature of authorized person to sign the bid]

Date: [Insert date]

Bid Guarantee Form (Bank Guarantee)

[The bank fills this bank guarantee form according to the instructions aforementioned between the brackets.]

[Insert the Name of the Bank, Address of the Branch or the Issuing Bureau]

Beneficiary: [Insert the name and address of the Buyer]

Date: [Insert Date]

Bid Guarantee No.: [Insert Number]

We were informed that [Insert name of bidder] (hereinafter called "Bidder") has given you his bid dated [Insert Date] (hereinafter called "Bid") to implement [Insert Name of Contract].

Moreover, we are aware, according to your conditions that bids must be supported by a bid guarantee.

According to the request by the bidder, we [Insert Name of Bank] are committed according to this document to pay you any amount or amounts that does not exceed in total the amount of [Insert amount in numbers] ([Insert amount in writing]) Iraqi Dinar once we receive from you the first written request accompanied by a written affidavit stating that the bidder has violated his obligation (obligations) under the conditions of the bid, because the bidder:

(A) Has withdrew his bid during the validity period of the bid specified in the bid form, or

(B) Informing him that his bid was accepted by the buyer during the validity period of the bid:

(1) Failing or refusing to implement the contract form, if required, or

(2) Failing or refusing to submit a good performance guarantee according to the instructions to bidders.

The validity period of this bid guarantee ends:

A) If the bidder was awarded the bid, once we receive the contract copies signed by the bidder and good performance guarantee issued to you by the bidder, or

B) If the bid was not awarded to the bidder, if preceded by:

(1) Our receipt of a copy of your notification to the bidder that the bid was not awarded, or

(2) After twenty eight days from the completion of validity period of the bidder's bid.

Therefore, any request to pay under this guarantee must be received by us in the bureau at that date or before it.

This guarantee is subject to the unified laws of the guarantees request, issued according to the Iraqi Law.

[Signature (signatures) representative (representatives) authorized (authorized)]

Authorization of the Manufacturing Party

The bidder has to request from the manufacturing party to fill this form according to the specified instructions. This letter of authorization shall be on paper with a logo of the manufacturing party and signed by the person authorized to sign the required documents for the factory, and the bidder shall enclose them in his bid if referred to in the bid data sheet.

Date (Insert the date, day/month/year to submit the bid)

No. of general tender (Insert number of tender)

Alternate No. (Insert identification number if the bid was for an alternate person)

To (Insert name of buyer)

Where

We (Insert full name of factory), the official manufacturers of (Insert type of the manufactured material), we own the plants located on (Insert full address of plants owned by the manufacturing party), we authorize (Insert full name of bidder) to submit his bid which includes supplying of commodities listed later on and manufactured by us (insert name of commodity with a brief description), we authorize him to negotiate and sign the contract.

Hereby, we submit this complete guarantee and undertaking according to the provisions of Para (27) of the general conditions of the contract for commodities offered by the bidder.

Signature (Insert signatures of the authorized representative personnel for the manufacturing party)

Name (Names of authorized representatives of the manufacturing party)

Position (Insert position)

Duly authorized to sign this authorization on behalf of (Insert full name of the bidder)

Signature (Insert signature)

Date (Day/Month/Year)

Section Five: Eligible Countries

Eligibility to provide commodities or execute the works or services in the contracts financed by the buyer:

1. The buyer has the right to allow organizations and personnel of all countries to supply commodities or execute the works or offer services to the projects financed by the Iraqi government, and as an exception, it prevents organizations in countries or the commodities manufactured in the countries from participating in tenders in the following cases:
 - A- The legislations or prevailing regulations prohibit the employer's country from establishing commercial relations with that country, provided, the buyer is convinced that such prohibition will not prevent achieving fruitful competition to supply the commodities or execute the works.
 - B- In response to the decision issued by the United Nations / Security Council under chapter seven of the constitution of the United Nations which prohibit the country of the buyer from contracting to import any commodities or pay any amounts to the country of the bidder.
2. For the review of the bidders thereon, we include the commodities, services and organizations that are prohibited from participating in this tender according to the mentioned instructions.

a) Regarding Para1-(A)above.

Israel

b) Regarding Para 1-(B)above.

Part Two

Requirements of Supplying for The Contracts of Supplying Commodities

Section Six: Schedule of Requirements for

The Contracts of Supplying Commodities

Contents

1- List of Commodities and Schedule of Delivery	خطأ! الإشارة المرجعية غير معروفة.
2- List of Services Related to the Commodities and Schedule of Completion.....	خطأ! الإشارة المرجعية غير معروفة.
3- Technical Specifications	52
4- Drawings	خطأ! الإشارة المرجعية غير معروفة.
5- Test and Engineering Inspection.....	177

Notes about Preparing the Schedule of Requirements

The buyer includes the schedule of requirements in the bid documents, and each one has to cover in minimum a description of commodities and services that will be provided in addition to the schedule of the delivery.

The objective of the schedule of requirements is to provide sufficient information that enables the bidder to prepare their bids accurately and effectively, especially the schedule of prices which there is a special form for it in section four.

In addition to that, the schedule of requirements and the schedule of prices must be essential in case there are differences in quantities upon awarding the contract according to Para (41) of the instructions to bidders.

The timings and date of supplying the commodities must be specified accurately, and taking into consideration:

a. The rules of delivery conditions specified in the instructions to bidders according to INCOTERMS rules (rules of FCA, FOB, CIP, CIF, EXW) which specifies the methods of delivering the commodities to the carrier.

b. The dates specified in the documents regarding the obligations of the buyer as much as it concerns (issuing the letter of acceptance "letter of award", signing the contract, opening and affixing the letters of credits).

1. List of Goods and Delivery Schedule

Line Item N°	Description of Goods	Quantity	Physical unit	Final (Project Site) Destination	Delivery Date		
					Earliest Delivery Date	Latest Delivery Date	Bidder's offered Delivery date [to be provided by the bidder]
A	B	C	D	E	F	G	H
							<i>[insert the number of days following the date of effectiveness the Contract]</i>
1	7-1-FCV-2	1	Nos	CIP SRC (warehouse) Basra		14 months	
2	7-1-FCV-3	1	Nos				
3	7-1-FCV-4	1	Nos				
4	7-1-FCV-5	1	Nos				
5	7-1-LCV-1	1	Nos				
6	7-1-LCV-2	1	Nos				
7	7-1-LCV-3	1	Nos				
8	7-1-LCV-7	1	Nos				
9	7-1-PCV-1	1	Nos				
10	7-1-PCV-2	1	Nos				
11	7-1-XX-1	1	Nos	CIP SRC (warehouse) Basra			
12	7-1-XX-2	1	Nos				
13	7-1-XX-5	1	Nos				
14	7-2-FCV-19	1	Nos				
15	7-2-FCV-20	1	Nos				
16	7-2-FCV-21	1	Nos				
17	7-2-LCV-8	1	Nos				
18	7-2-TCV-8	1	Nos	CIP SRC (warehouse) Basra			
19	7-2-XX-3	1	Nos				
20	7-2-XX-4	1	Nos				

54	9-2-FCV-13	1	Nos				
55	9-2-LCV-4	1	Nos				
56	9-2-PCV-6	1	Nos				
57	9-2-XX-2	1	Nos				
58	9-2-XX-4	1	Nos				
59	9-2-XX-5	1	Nos				
60	9-4-FCV-32	1	Nos				
61	9-4-FCV-34	1	Nos				
62	9-4-FCV-35	1	Nos				
63	9-4-LCV-14	1	Nos				
64	9-4-PCV-4	1	Nos				
65	9-7-TCV-23A	1	Nos				
66	10-1-FCV-2	1	Nos				
67	10-1-FCV-3	1	Nos				
68	10-1-FCV-4	1	Nos				
69	10-1-FCV-6	1	Nos				
70	10-1-FCV-7	1	Nos				
71	10-1-TCV-1	1	Nos				
72	10-2-LCV-1	1	Nos				
73	10-2-LCV-2	1	Nos				
74	10-2-LCV-3	1	Nos				
75	10-2-LCV-4	1	Nos				
76	10-5-LCV-17A	1	Nos				
77	10-5-LCV-17B	1	Nos				
78	10-5-LCV-19A	1	Nos				
79	10-5-LCV-19B	1	Nos				
80	10-5-LCV-21A	1	Nos				
81	10-5-LCV-21B	1	Nos				
82	10-5-LCV-23A	1	Nos				
83	10-5-LCV-23B	1	Nos				
84	10-6-FCV-36	1	Nos				
85	10-6-FCV-37	1	Nos				
86	10-6-FCV-38	1	Nos				
87	10-6-LCV-25A	1	Nos				
88	10-6-LCV-25B	1	Nos				
89	10-6-LCV-27A	1	Nos				
90	10-6-LCV-27B	1	Nos				
91	10-6-LCV-31	1	Nos				
92	10-9-FCV-47	1	Nos				
93	10-10-FCV-53	1	Nos				
94	10-10-FCV-54	1	Nos				
95	10-10-LCV-48	1	Nos				

96	10-10-LCV-49	1	Nos				
97	10-12-FCV-60	1	Nos				
98	10-12-PCV-29A	1	Nos				
99	10-12-PCV-29B	1	Nos				
100	10-12-PCV-31	1	Nos				
101	10-13-FCV-61	1	Nos				
102	10-13-FCV-62	1	Nos				
103	10-13-FCV-63	1	Nos				
104	10-13-FCV-64	1	Nos				
105	10-13-LCV-54	1	Nos				
106	10-13-PCV-37	1	Nos				
107	10-14-PCV-55	1	Nos				
108	10-14-TCV-28A	1	Nos				
109	10-14-TCV-28B	1	Nos				
110	11-FCV-1	1	Nos				
111	11-LCV-2	1	Nos				
112	11-LCV-3	1	Nos				
113	11-LCV-4	1	Nos				
114	11-LCV-7	1	Nos				
115	11-LDCV-5	1	Nos				
116	11-PCV-1	1	Nos				
117	11-PCV-5	1	Nos				
118	11-PCV-9	1	Nos				
119	11-TCV-1A	1	Nos				
120	11-TCV-1B	1	Nos				
121	11-XX-1	1	Nos				

2. List of Related Services and Completion Schedule					
Service N°	Description of Service	Quantity ¹	Physical Unit	Place where Services shall be performed	Final Completion Date(s) of Services
<i>[insert Service No]</i>	<i>[insert description of Related Services]</i>	<i>[insert quantity of items to be supplied]</i>	<i>[insert physical unit for the items]</i>	<i>[insert name of the Place]</i>	<i>[insert required Completion Date(s)]</i>
1	fat for two persons	1	Nos	Manufacturer work shop	7 working Days
1. If applicable					

3- Technical Specifications

The purpose of the technical specifications is to determine the technical characteristics of commodities and relevant services required by the Buyer. The Buyer shall setup a detailed list of the technical specifications taking into account the following:

- □ The technical specifications consist of clear indications through which the Buyer may determine whether the technical specifications provided in the Bid conform to the specifications required, and thus it may submit the Bid. Therefore, the well set technical specifications facilitate the process of setting up a Bid that meets the specifications of the Bidder.
- , in addition to checking, evaluating and comparing the same by the Bids Analysis Committee.
- The specifications require that all commodities and materials used in commodities shall be brand new, state-of-the-art and involve all developments in design and materials, unless the Contract states otherwise.
- □ The technical specifications shall make use of the best previous practice. Samples of specifications used in successful similar Bids in the same country or sector may provide solid ground in establishing the technical specifications.
- □ The Buyer requires using the metric system in specifying the units in the Bid.
- □ To establish fixed standards for the technical specifications may be very useful. This depends on the degree of sophistication and recurrence of this type of supply processes. The technical specifications shall be comprehensive to avoid restriction of manufacture, materials or equipments often used in the manufacture of similar commodities.
- □ The standards fixed for equipments, materials and manufacture in the Bidding documents shall not be restricted. The international specifications adopted shall be set whenever possible. Also, shall be avoided as much as possible any indication to the trade names, figures, illustrations or any other details determining the materials and items required in those produced from a certain factory. If this is not possible, the descriptions of such items shall be followed by the phrase (or similar to max. extent).
- The technical specifications shall demonstrate all the requirements in the following points, for example but not limited to:
 - a- Standards of materials and manufacture required for the production and manufacture of such materials.
 - b- Details of tests required (type and number).
 - c- Any additional work and/or related services required to achieve delivery/completion on the best way.
 - d- Details of activities to be performed by the supplier and the nature of Buyer's participation therein.
 - e- List of the details of guarantees covered by the commodities warrantee Liquidated Damage to be applied if the guarantees are not realized.

- The specifications shall describe all the technical and performance requirements and characteristics, to include the higher and lower values guaranteed and accepted, as applicable .The Buyer shall, if necessary, add a special form(to be attached to the Bid Submission Form) in which the Bidder shall state detailed information on such performance characteristics against such guaranteed and accepted values.

When the Buyer requires the Bidder to state in its Bid all or some of these technical specifications, technical tables or other technical information, then it shall specify in details the extent and nature of information required and the method in which these should be provided by the Bidder in the Bid.

[The Buyer shall enter the information in the following table, if it is presumed that it should provide a technical specifications summary. The Bidder shall provide similar table to clarify how they conform to the required specifications].

“Technical Specifications Summary: Commodities and shall be according to the following standards and specifications:

<i>Item No</i>	<i>Name of Goods or Related Service</i>	<i>Technical Specifications and Standards</i>
1	Pneumatic connection	S.St 316
2	Positioner	All control valves must be assembling with I/P smart positioner 4-20 mA (HART), I/O gauges and air filter regulator.
3	Spare parts	Supplying spare parts for two years include [complete valve positioner (13 NOS min), diaphragm, stem, packing, plug, cage, upper and lower seat, body gasket, etc.] for each valve.

Details of standards and technical specifications:

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH.	2 OF	DATE 05/12/78

1 TAG=7-1-PRC-2V-IDENT.N. 2-PLANT= 7 -SERVICE=701B CHARGE -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 3.000"

1 VALVE TYPE	1 NOT REVERSIBLE GLOBE	1	1 CALCULATION IN ACCORDANCE WITH		1
1 SEAT TYPE	1 SINGLE SEAT WITH REDUCED TRIM	1"	1 *MASCHELLAN HANDBOOK FOR CONTROL VALVE SIZING*		1
1 NOMINAL DIAMETER	1 2"		1		1
1 RATING	1 300 ANSI		1 FLUID - LIQUID		1
1 BODY MATERIAL	1 A 214 WCB		1		1
1 TRIM MATERIAL	1 AISI 316 WITH STELLITE		1 MAXIMUM FLOW		1 27862.99 KG/H
1 IMBODANT	1 FINISHED		1 MINIMUM FLOW		1 16718.00 KG/H
1 IMBODANT	1 TEFLON ASBESTOS		1 ABSOLUTE PRESSURES		1
1 LUBRICATOR MATERIAL	1 BODY MATERIAL		1 UPSTREAM (AT MAX.FLOW)		1 15.80000 KG/CM2
1 SOFT SEAT	1		1 UPSTREAM (AT MIN.FLOW)		1 21.79999 KG/CM2
1 PERO	1 CONToured		1 DOWNSTREAM (AT MAX.FLOW)		1 9.60000 KG/CM2
1 CHARACTERISTIC	1 EQUAL PERCENTAGE		1 DOWNSTREAM (AT MIN.FLOW)		1 3.60000 KG/CM2
1 CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI B46.1		1 OPERATING TEMPERATURE		1 272.00 DEG.C
1 TOP FOR MOTOR SIZE	1 24.900 KG/CM2		1 DENSITY AT OPERATING CONDIT.		1 0.79900 KG/DM3
1 PROCESS FLUID ACTION	1 OPEN		1 VAPOR PRESSURE OF LIQUID		1 0.00150 KG/CM2
1 ON POWER FAILURE	1 OPEN		1 CRITICAL PRESSURE		1 9.48000 KG/CM2
1 HANDWHEEL	1 NOT REQUIRED		1 DP ON CLOSE VALVE		1 24.89999 KG/CM2
1 SPECIAL SERVICE	1		1		1
1 POSITIONER	1 WITH BY-PASS AND GAUGES		1 *CV MAX.CALCULATED		1 14.67533
1 LIMIT SWITCH	1 NOT REQUIRED		1 *CV MAX.CALCULATED OVERSIZED		1 18.74416
1 SPRING RANGE	1 3 - 15 PSIG		1 *OVERSIZING FACTOR OF CV		1 1.25000
1 INPUT RANGE	1 3 - 15 PSIG		1 *CV SELECTED		1 20.00000
1 JACKET	1		1 *CV MIN.CALCULATED		1 5.21769
1 ACCESSORIES	1 ~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~ Ⓢ		1 *CF		1 0.90000
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C		1 *CFR		1 0.90000
1 MANUFACTURER	1 NUOVO PIGNONE		1 *R		1 0.93459
1 SUPPLIER	1 NUOVO PIGNONE		1 *RANGEABILITY		1 3.83311
1 MODEL	1 1200		1 *FLUID VELOCITY		1 5.07382 M/SEC
1 QUANTITY	1 1		1 (PIPE THK = 5.49 MM)		1
1 INDEX NUMBER	1 140600 BS 3136		1		1

MESSAGES

NOTE: VALVE BODY IS PROVIDED WITH HOLE SIZE 1/2" NPTF FOR STEAM FLUSHING.

* DATA CALCULATED OR SELECTED BY PROGRAMME

OR GENERAL CHARACTERISTICS SEE

C N. 000-SA-E-50028 SH 1:7 Rev. 0

REV. 2 VERIFIED BY *fin* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH.	3 OF	DATE 05/12/78

TAG-7-1-FRC-3V-IDENT.N. 3-PLANT# 7 -SERVICE=701B CHARGE -CODES(PIPE=13A/ -JOB 00621)-PIPE DIAM 3.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*
NOMINAL DIAMETER	2"	
RATING	300 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	MAXIMUM FLOW
TRIM MATERIAL	AISI 316 WITH STELLITE	MINIMUM FLOW
BUNNET	FINNED	ABSOLUTE PRESSURES
PACKING	TEFLON ASBESTOS	UPSTREAM(AT MAX.FLOW)
LUBRICATOR MATERIAL	BODY MATERIAL	UPSTREAM(AT MIN.FLOW)
SOFT SEAT		DOWNSTREAM(AT MAX.FLOW)
PLUG	CONTOURED	DOWNSTREAM(AT MIN.FLOW)
CHARACTERISTIC	EQUAL PERCENTAGE	OPERATING TEMPERATURE
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	DENSITY AT OPERATING CONDIT.
OP. FOR MOTOR SIZE	24.900 KG/CM2	VAPOR PRESSURE OF LIQUID
PROCESS FLUID ACTION	OPEN	CRITICAL PRESSURE
ON POWER FAILURE	OPEN	DP ON CLOSE VALVE
HANDWHEEL	NOT REQUIRED	
SPECIAL SERVICE		*CV MAX.CALCULATED
POSITIONER	WITH BY-PASS AND GAUGES	*CV MAX.CALCULATED OVERSIZED
LIMIT SWITCH	NOT REQUIRED	*OVERSIZING FACTOR OF CV
SPRING RANGE	3 - 15 PSIG	*CV SELECTED
INPUT RANGE	3 - 15 PSIG	*CV MIN.CALCULATED
JACKET		*CF
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~	*CFR
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*R
MANUFACTURER	NUOVO PIGNONE	*RANGEABILITY
SUPPLIER	NUOVO PIGNONE	*FLUID VELOCITY
MODEL	1200	(PIPE THK = 5.49 MM)
QUANTITY	1	
ORDER NUMBER	140600 BS 3136	

MESSAGES

NOTE: VALVE BODY IS PROVIDED WITH A HOLE SIZE 1/8" NPTF FOR STEAM FLUSHING.

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh.1+7 Rev. 0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *fiore* DATE 29/1/79

1 SNAM-PROGETTI - PROGRAMME ** C O V A L **		1 CUSTOMER SCOP		1 JOB 140600 PLANT 7	
1 INSTRUMENTS REQUISITION		1 LOCATION BASRAH REFINERY - IRAQ		1 REQ. NO. 7-SA- 50728 REV. 1	
1 CONTROL VALVES AND REGULATORS		1 PLANT VACUUM DISTILLATION		1 SH. 4 OF DATE 05/12/78	

1 TAG=7-1-FRC-4V-IDENT.N. 4-PLANT= 7 -SERVICE=7018 CHARGE		-CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 3.000"	
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1 VALVE TYPE	1 NOT REVERSIBLE GLOBE	1	1 CALCULATION IN ACCORDANCE WITH	
1 SEAT TYPE	1 SINGLE SEAT WITH REDUCED TRIM	1"	1 *MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
1 NOMINAL DIAMETER	1 2"		1	
1 RATING	1 300 ANSI		1 FLUID - LIQUID	
1 BODY MATERIAL	1 A 216 WCB		1	
1 TRIM MATERIAL	1 AISI 316 WITH STELLITE		1 MAXIMUM FLOW 27862.99 KG/H	
1 BONNET	1 FINNED		1 MINIMUM FLOW 16718.00 KG/H	
1 PACKING	1 TEFLON ASBESTOS		1 ABSOLUTE PRESSURES	
1 LUBRICATOR MATERIAL	1 BODY MATERIAL		1 UPSTREAM (AT MAX.FLOW) 15.80000 KG/CM2	
1 SOFT SEAT	1		1 UPSTREAM (AT MIN.FLOW) 21.79999 KG/CM2	
1 PLUG	1 CONTOURED		1 DOWNSTREAM (AT MAX.FLOW) 9.60000 KG/CM2	
1 CHARACTERISTIC	1 EQUAL PERCENTAGE		1 DOWNSTREAM (AT MIN.FLOW) 3.60000 KG/CM2	
1 CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI 646.1		1 OPERATING TEMPERATURE 272.00 DEG.C	
1 DP FOR MOTOR SIZE	1 24.900 KG/CM2		1 DENSITY AT OPERATING CONDIT. 0.79800 KG/DM3	
1 PROCESS FLUID ACTION ,	1 OPEN		1 VAPOR PRESSURE OF LIQUID 0.00150 KG/CM2	
1 ON POWER FAILURE	1 OPEN		1 CRITICAL PRESSURE 9.46000 KG/CM2	
1 HANDWHEEL	1 NOT REQUIRED		1 DP ON CLOSE VALVE 24.89999 KG/CM2	
1 SPECIAL SERVICE	1		1	
1 POSITIONER	1 WITH BY-PASS AND GAUGES		1 *CV MAX.CALCULATED 14.67533	
1 LIMIT SWITCH	1 NOT REQUIRED		1 *CV MAX.CALCULATED OVERSIZED 18.34416	
1 SPRING RANGE	1 3 - 15 PSIG		1 *OVERSIZING FACTOR OF CV 1.25000	
1 INPUT RANGE	1 3 - 15 PSIG		1 *CV SELECTED 20.00000	
1 JACKET	1		1 *CV MIN.CALCULATED 5.21769	
1 ACCESSORIES	1 ~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~ 4		1 *CF 0.90000	
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C		1 *CFR 0.90000	
1 MANUFACTURER	1 NUOVO PIGNONE		1 *R 0.99459	
1 SUPPLIER	1 NUOVO PIGNONE		1 *RANGEABILITY 3.83311	
1 MODEL	1 1200		1 *FLUID VELOCITY 5.07382 M/SEC	
1 QUANTITY	1 1		1 (PIPE THK = 5.49 MM)	
1 ORDER NUMBER	1 140600 BS 3136		1	

1 MESSAGES

1 NOTE: VALVE BODY IS PROVIDED WITH A HOLE SIZE 1/2" NPTF FOR STEAM FLUSHING.

1 * DATA CALCULATED OR SELECTED BY PROGRAMME

1 FOR GENERAL CHARACTERISTICS SEE

1 N. 000-SA-E-500.2B Sh. 127 Rev. 2

1 REV. 2 1 VERIFIED BY *hien* 1 DATE 29/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA-	50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH.	5 OF	DATE	05/12/78

I TAG=7-1-FRC-5V-IDENT.N. 5-PLANT= 7 -SERVICE=701B CHARGE -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 3.000"

I VALVE TYPE	I NOT REVERSIBLE GLOBE	I	CALCULATION IN ACCORDANCE WITH	I
I SEAT TYPE	I SINGLE SEAT WITH REDUCED TRIM	I**	I 'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	I
I NOMINAL DIAMETER	I 2"	I	I	I
I ORATING	I 300 ANSI	I	I FLUID - LIQUID	I
I BODY MATERIAL	I A 216 WCB	I	I	I
I TRIM MATERIAL	I A151 316 WITH STELLITE	I	I MAXIMUM FLOW	I 27862.99 KG/H
I BONNET	I FINNED	I	I MINIMUM FLOW	I 16718.00 KG/H
I PACKING	I TEFELON ASBESTOS	I	I ABSOLUTE PRESSURES	I
I LUBRICATOR MATERIAL	I BODY MATERIAL	I	I UPSTREAM AT MAX.FLOW	I 15.80000 KG/CM2
I SOFT SEAT	I	I	I UPSTREAM AT MIN.FLOW	I 21.79999 KG/CM2
I PLUG	I CONTOURED	I	I DOWNSTREAM AT MAX.FLOW	I 9.60000 KG/CM2
I CHARACTERISTIC	I EQUAL PERCENTAGE	I	I DOWNSTREAM AT MIN.FLOW	I 3.60000 KG/CM2
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I	I OPERATING TEMPERATURE	I 272.00 DEG.C
I DP FLR FLTR SIZE	I 24.900 KG/CM2	I	I DENSITY AT OPERATING CONDIT.	I 0.79800 KG/CM3
I PROCESS FLUID ACTION	I OPEN	I	I VAPOR PRESSURE OF LIQUID	I 0.00150 KG/CM2
I ON POWER FAILURE	I OPEN	I	I CRITICAL PRESSURE	I 9.46000 KG/CM2
I HANDWHEEL	I NOT REQUIRED	I	I DP ON CLOSE VALVE	I 24.89999 KG/CM2
I SPECIAL SERVICE	I	I	I	I
I POSITIONER	I WITH BY-PASS AND GAUGES	I	I *CV MAX.CALCULATED	I 14.67533
I LIMIT SWITCH	I NOT REQUIRED	I	I *CV MAX.CALCULATED OVERSIZED	I 18.34416
I SPRING RANGE	I 3 - 15 PSIG	I	I *OVERSIZING FACTOR OF CV	I 1.25000
I INPUT RANGE	I 3 - 15 PSIG	I	I *CV SELECTED	I 20.00000
I JACKET	I	I	I *CV MIN.CALCULATED	I 5.21769
I ACCESSORIES	I ~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~ ②	I	I *CF	I 0.90000
I AMBIENT TEMPERATURE	I MIN 1.7 MAX43.3DEG.C	I	I *CFR	I 0.90000
I MANUFACTURER	I NUOVO PIGNONE	I	I *R	I 0.99459
I SUPPLIER	I NUOVO PIGNONE	I	I *RANGEABILITY	I 3.83311
I MODEL	I 1200	I	I *FLUID VELOCITY	I 5.07382 M/SEC
I QUANTITY	I 1	I	I (PIPE THK = 5.49 MM)	I
I ORDER NUMBER	I 140600 BS 3136	I	I	I

MESSAGES

NOTE: VALVE BODY IS PROVIDED WITH A HOLE SIZE 1/2" NPTF FOR STEAM FLUSHING.

* DATA CALCULATED OR SELECTED BY PROGRAMME

GENERAL CHARACTERISTICS SEE
 ALLY COMPRESSOR 28 1-7 PL 0

REV. 2 VERIFIED BY *Pignone* DATE 24/1/79

SNAP-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAC	REC. NO.	7-5A- 50728 REV.
CONTROL VALVES AND REGULATORS		PLANT	VACUUM DISTILLATION	SH. 20 OF	DATE 05/12/78

TAG=7-1-1C-IV -IDENT.N. 20-PLANT=		7	-SERVICE=EX TO 705C	-CODES(PIPE=130/ -JOB 0052)-PIPE DIAM	3.000"
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VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 3/4"	"MASONNEILAN HANDBOOK FOR CONTROL VALVE SIZING"	
NOMINAL DIAMETER	1 1/2"	FLUID - LIQUID	
RATING	600 ANSI	MAXIMUM FLOW	
BODY MATERIAL	A 216 WCB	MINIMUM FLOW	
TRIM MATERIAL	FULL STELLITE	ABSOLUTE PRESSURES	
END-USE	STANDARD	UPSTREAM MAX. FLOW	
PACKING	TEFLON	UPSTREAM MIN. FLOW	
LUBRICATOR MATERIAL		DOWNSTREAM MAX. FLOW	
SEAT SEAT		DOWNSTREAM MIN. FLOW	
PLUG	CUNTOURED	OPERATING TEMPERATURE	
CHARACTERISTIC	LINEAR	DENSITY AT OPERATING CONDIT.	
CONNECTICAS	FLANGED (RE 125 RPS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID	
OP FOR MOTOR SIZE	47.000 KG/CM2	CRITICAL PRESSURE	
PROCESS FLUID ACTION	OPEN	OP ON CLOSE VALVE	
ON POWER FAILURE	CLOSE	CV MAX. CALCULATED	
MANWHEEL	NOT REQUIRED	CV MAX. CALCULATED OVERSIZED	
SPECIAL SERVICE		OVERSIZING FACTOR OF CV	
POSITIONER	WITH 5-PSI GAUGES	CV SELECTED	
LIMIT SWITCH	NOT REQUIRED	CV MIN. CALCULATED	
SPRING RANGE	15 - 30 PSIG	KDF	
INLET RANGE	5 - 15 PSIG	KCFR	
JACKET		KX	
ACCESS PT'S		RANGEABILITY	
APPLICAT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	FLUID VELOCITY	

MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1000
QUANTITY	1
ORDER NUMBER	140600/05/3136

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 SH 1/7 Rev. 2

REV. 2 VERIFIED BY *lian* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **
INSTRUMENTS REQUISITION
CONTROL VALVES AND REGULATORS

CUSTOMER SCOP
LOCATION BASRAH REFINERY - IRAQ
PLANT VACUUM DISTILLATION

JOB 140600 PLANT 7
REQ. NO. 7-SA- 50728 REV. 1
SH. 21 OF DATE 05/12/78

TAG=7-1-LIC-2V-IDENT.N. 21-PLANT= 7 -SERVICE=SLOP MAX STORAGE -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE REVERSIBLE GLOBE
SEAT TYPE SINGLE SEAT WITH REDUCED TRIM 1 1/4"
NOMINAL DIAMETER 1 1/2"
RATING 600 ANSI
BODY MATERIAL A 216 WCB
TRIM MATERIAL AISI 316
BONNET STANDARD
PACKING TEFLON
LUBRICATOR MATERIAL
SOFT SEAT
PLUG
CHARACTERISTIC CONTOURED
EQUAL PERCENTAGE
CONNECTIONS FLANGED 1 RF 125 RMS 1 PER ANSI B46.1
DP FOR MOTOR SIZE 14.800 KG/CM2
PROCESS FLUID ACTION OPEN
ON POWER FAILURE CLOSE
HANDWHEEL NOT REQUIRED
SPECIAL SERVICE
POSITIONER WITH ~~BY PASS~~ AND GAUGES
LIMIT SWITCH NOT REQUIRED
SPRING RANGE 6 - 30 PSIG
INPUT RANGE 3 - 15 PSIG
JACKET
ACCESSORIES
AMBIENT TEMPERATURE FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER NUOVO PIGNONE
SUPPLIER NUOVO PIGNONE
MODEL 1000
QUANTITY 1
ORDER NUMBER 140600 BS 3136

CALCULATION IN ACCORDANCE WITH
"MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"

FLUID - LIQUID

MAXIMUM FLOW 7522.00 KG/H
MINIMUM FLOW 4513.00 KG/H
ABSOLUTE PRESSURES
UPSTREAM AT MAX.FLOW 8.70000 KG/CM2
UPSTREAM AT MIN.FLOW 10.40000 KG/CM2
DOWNSTREAM AT MAX.FLOW 7.00000 KG/CM2
DOWNSTREAM AT MIN.FLOW 5.40000 KG/CM2
OPERATING TEMPERATURE 170.00 DEG.C
DENSITY AT OPERATING CONDIT. 0.85200 KG/DM3
VAPOR PRESSURE OF LIQUID 0.00100 KG/CM2
CRITICAL PRESSURE 8.40000 KG/CM2
DP ON CLOSE VALVE 14.80000 KG/CM2

*CV MAX.CALCULATED 7.36892
*CV MAX.CALCULATED OVERSIZED 9.21115
*OVERSIZING FACTOR OF CV 1.25000
*CV SELECTED 16.0000
*CV MIN.CALCULATED 2.57796
*CF 0.90000
*CFR 0.90000
*R 0.99367
*RANGEABILITY 6.20645
*FLUID VELOCITY 2.24061 M/SEC
(PIPE THK = 5.49 MM)

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1/7 Rev. 0

REV. 2 VERIFIED BY *Pier* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH. 22 OF	DATE 05/12/78	

TAG=7-1-LIC-3V-IDENT.N. 22-PLANT= 7 -SERVICE=RESIDUUM STORAGE -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 6.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH "MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 2 1/2"	
NOMINAL DIAMETER	3"	
RATING	300 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	MAXIMUM FLOW
TRIM MATERIAL	AISI 316	53161.99 KG/H
BONNET	STANDARD	ABSOLUTE PRESSURES
PACKING	TEFLON	UPSTREAM (AT MAX. FLOW)
LUBRICATOR MATERIAL		15.80000 KG/CM2
SOFT SEAT		DOWNSTREAM (AT MAX. FLOW)
PLUG	CONTOURED	12.80000 KG/CM2
CHARACTERISTIC	EQUAL PERCENTAGE	OPERATING TEMPERATURE
CONNECTIONS	FLANGED (RF 125 RNS) PER ANSI B46.1	149.00 DEG.C
OP FOR MOTOR SIZE	26.700 KG/CM2	DENSITY AT OPERATING CONDIT.
PROCESS FLUID ACTION	OPEN	0.92000 KG/DM3
ON POWER FAILURE	CLOSE	VAPOR PRESSURE OF LIQUID
HANDWHEEL	NOT REQUIRED	0.00100 KG/CM2
SPECIAL SERVICE		CRITICAL PRESSURE
POSITIONER	WITH ~~BY PASS~~ AND GAUGES	6.70000 KG/CM2
LIMIT SWITCH	NOT REQUIRED	OP ON CLOSE VALVE
SPRING RANGE	15 - 30 PSIG	26.70000 KG/CM2
INPUT RANGE	3 - 15 PSIG	
JACKET		*CV MAX. CALCULATED
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~	37.72186
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.30 DEG.C	*CV MAX. CALCULATED OVERSIZED
		47.15234
		*OVERSIZING FACTOR OF CV
		1.25000
		*CV SELECTED
		75.00000
		*CF
		0.90000
		*CFR
		0.90000
		*R
		0.99383
		*FLUID VELOCITY
		3.66236 M/SEC
		(PIPE THK = 7.11 MM)

MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1200
QUANTITY	1
ORDER NUMBER	140600 BS 3136

MESSAGES

NOTE: VALVE BODY IS PROVIDED WITH HOLE SIZE 1/2" NPTF FOR STEAM FLUSHING.

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1 of 7 Rev. 0

REV. 2 VERIFIED BY *liam* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH. 26 OF	DATE 05/12/78	

TAG=7-1-LC-7V -IDENT.N. 26-PLANT= 7 -SERVICE=LUGO TO STORAGE -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE	REVERSIBLE GLOBE
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 2"
NOMINAL DIAMETER	3"
RATING	300 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	ATSI 316
DOWNNET	STANDARD
PACKING	TEFLON
LUBRICATOR MATERIAL	
SOFT SEAT	
PLUG	CONTOURED
CHARACTERISTIC	EQUAL PERCENTAGE
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1
OP FOR MOTOR SIZE	14.500 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	CLOSE
HANDWHEEL	NOT REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH BY-PASS AND GAUGES
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	15 - 30 PSIG
INPUT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) @
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1000
QUANTITY	1
ORDER NUMBER	140600 BS 3136

CALCULATION IN ACCORDANCE WITH
'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'

FLUID - LIQUID

MAXIMUM FLOW	15453.99 KG/H
MINIMUM FLOW	9272.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM (AT MAX.FLOW)	7.00000 KG/CM2
UPSTREAM (AT MIN.FLOW)	10.10000 KG/CM2
DOWNSTREAM (AT MAX.FLOW)	5.50000 KG/CM2
DOWNSTREAM (AT MIN.FLOW)	4.80000 KG/CM2
OPERATING TEMPERATURE	49.00000 DEG.C
DENSITY AT OPERATING CONDIT.	0.86100 KG/DH3
VAPOR PRESSURE OF LIQUID	0.00010 KG/CM2
CRITICAL PRESSURE	13.45000 KG/CM2
OP ON CLOSE VALVE	14.50000 KG/CM2
*CV MAX.CALCULATED	15.93130
*CV MAX.CALCULATED OVERSIZED	19.91412
*OVERSIZING FACTOR OF CV	1.25000
*CV SELECTED	40.00000
*CV MIN.CALCULATED	5.08501
*CF	0.90000
*CFR	0.90000
*R	1.00000
*RANGEABILITY	7.86625
*FLUID VELOCITY (PIPE THK = 5.49 MM)	1.04495 M/SEC

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *Pisani* DATE 24/1/79

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh.1+7 Rev.0

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH. 16 OF	DATE 05/12/78	

1 TAG=7-1-PIC-IV-IDENT.N. 16-PLANT= 7 -SERVICE=FUEL OIL TO 701B -CODES(PIPE=11E/ -JOB 00621-PIPE DIAM 2.000!"

1 VALVE TYPE	1 NOT REVERSIBLE GLOBE
1 SEAT TYPE	1 SINGLE SEAT WITH REDUCED TRIM 1/2"
1 NOMINAL DIAMETER	1 1"
1 RATING	1 600 ANSI
1 BODY MATERIAL	1 A 216 WCB
1 TRIM MATERIAL	1 AISI 316
1 BONNET	1 STANDARD
1 PACKING	1 TEFLON
1 LUBRICATOR MATERIAL	1
1 SOFT SEAT	1
1 PLUG	1 CONTOURED
1 CHARACTERISTIC	1 EQUAL PERCENTAGE
1 CONNECTIONS	1 FLANGED 1 RF 125 RMS 1 PER ANSI 846.1
1 DP FOR MOTOR SIZE	1 13.200 KG/CM2
1 PROCESS FLUID ACTION	1 OPEN
1 ON POWER FAILURE	1 CLOSE
1 HANDWHEEL	1 NOT REQUIRED
1 SPECIAL SERVICE	1
1 POSITIONER	1 WITH BY-PASS AND GAUGES
1 LIMIT SWITCH	1 NOT REQUIRED
1 SPRING RANGE	1 3 - 15 PSIG
1 INPUT RANGE	1 3 - 15 PSIG
1 JACKET	1
1 ACCESSORIES	1 ~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C
1 MANUFACTURER	1 NUOVO PIGNONE
1 SUPPLIER	1 NUOVO PIGNONE
1 MODEL	1 1200
1 QUANTITY	1 1
1 ORDER NUMBER	1 140600 BS 3136

1 MESSAGES

CALCULATION IN ACCORDANCE WITH
"MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"

FLUID -- LIQUID

MAXIMUM FLOW	3500.00 KG/H
MINIMUM FLOW	2000.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM(AT MAX.FLOW)	8.50000 KG/CM2
UPSTREAM(AT MIN.FLOW)	9.00000 KG/CM2
DOWNSTREAM(AT MAX.FLOW)	4.50000 KG/CM2
DOWNSTREAM(AT MIN.FLOW)	1.80000 KG/CM2
OPERATING TEMPERATURE	115.00 DEG.C
DENSITY AT OPERATING CONDIT.	0.88500 KG/CM3
VAPOR PRESSURE OF LIQUID	0.00100 KG/CM2
CRITICAL PRESSURE	7.00000 KG/CM2
DP ON CLOSE VALVE	13.20000 KG/CM2
*CV MAX.CALCULATED	2.19309
*CV MAX.CALCULATED OVERSIZED	2.74136
*OVERSIZING FACTOR OF CV	1.25000
*CV SELECTED	3.60000
*CV MIN.CALCULATED	0.93408
*CF	0.90000
*GFR	0.90000
*R	0.99373
*RANGEABILITY	3.85405
*FLUID VELOCITY	2.13639 M/SEC
(PIPE THK = 3.91 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 147 Rev. 0

REV. 2 | VERIFIED BY *Pian* | DATE 24/11/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	VACUUM DISTILLATION	SH. 17 OF	DATE 05/12/78	

TAG=7-1-PIC-2V-IDENT.N. 17-PLANT= 7 -SERVICE=FUEL GAS TO 7018 -CODES(PIPE=11G/ -JOB 0062)-PIPE DIAM 4.000"	
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VALVE TYPE	NOT REVERSIBLE GLOBE (2)	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	"MASONELLAN HANDBOOK FOR CONTROL VALVE SIZING"	
NOMINAL DIAMETER	1 1/2"	FLUID- HYDROCARBON GAS	
RATING	600 ANSI	MAXIMUM FLOW	
BODY MATERIAL	A 216 WCB	1564.00 KG/H	
TRIM MATERIAL	AISI 316	MINIMUM FLOW	
BONNET	STANDARD	938.00 KG/H	
PACKING	TEFLON	ABSOLUTE PRESSURES	
LUBRICATOR MATERIAL		UPSTREAM (AT MAX. FLOW)	
SEAT		8.00000 KG/CM2	
PLUG	TRIM CAGE TYPE	DOWNSTREAM (AT MAX. FLOW)	
CHARACTERISTIC	EQUAL PERCENTAGE	2.50000 KG/CM2	
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	DOWNSTREAM (AT MIN. FLOW)	
OP. FOR MOTOR SIZE	9.000 KG/CM2	1.20000 KG/CM2	
PROCESS FLUID ACTION	OPEN	OPERATING TEMPERATURE	
ON POWER FAILURE	CLOSE	40.00000 DEG.C	
HANDWHEEL	NOT REQUIRED	DENSITY AT OPERATING CONDIT.	
SPECIAL SERVICE		0.00397 KG/DM3	
POSITIONER	WITH ~~3" PASS AND GAUGES~~ (4)	MOLECULAR WEIGHT	
LIMIT SWITCH	NOT REQUIRED	21.50000	
SPRING RANGE	6 - 30 PSIG (2)	COMPR. FACTOR AT OPER. COND.	
INPUT RANGE	3 - 15 PSIG	1.00000	
JACKET		OP ON CLOSE VALVE	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~ (2)	9.00000 KG/CM2	
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C		

MANUFACTURER	NUOVO PIGNONE	CV MAX. CALCULATED	16.78143
SUPPLIER	NUOVO PIGNONE	CV MAX. CALCULATED OVERSIZED	20.77679
MODEL	GRDF	OVERSIZING FACTOR OF CV	1.25000
QUANTITY	1	CV SELECTED	27.00000
ORDER NUMBER	140600 BS 3136	CV MIN. CALCULATED	9.17898

MESSAGES		CF	0.90000
		CFR	0.86000
		R	0.95792
		RANGEABILITY	2.94150
		FLUID VELOCITY	210.13 M/SEC
		AERODYNAMIC NOISE (DBEL/A)	
		ESTIMATED AT 1 METRE	90.68013
		(PIPE THK = 6.02 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 17 Rev. 2

REV. 2 VERIFIED BY *Pinu* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH.	31 OF	DATE	05/12/78

I TAG=7-1-XX-IV -IDENT.N. 31-PLANT= 7 -SERVICE=F.O.TO 701B -CODES(PIPE=13A/ -JOB 00621-PIPE DIAM 2.000"

I VALVE TYPE	I REVERSIBLE GLOBE	I	CALCULATION IN ACCORDANCE WITH	
I SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM	I	"MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"	
I NOMINAL DIAMETER	I 2"	I	FLUID - LIQUID	
I RATING	I 300 ANSI	I	MAXIMUM FLOW 3500.00 KG/H	
I BODY MATERIAL	I A 216 WCB	I	ABSOLUTE PRESSURES	
I TRIM MATERIAL	I AISI 316	I	UPSTREAM(AT MAX.FLOW) 9.00000 KG/CM2	
I BONNET	I STANDARD	I	DOWNSTREAM(AT MAX.FLOW) 8.50000 KG/CM2	
I PACKING	I TEFLON	I	OPERATING TEMPERATURE 115.00 DEG.C	
I LUBRIFICATION MATERIAL	I	I	DENSITY AT OPERATING CONDIT. 0.88500 KG/DM3	
I SOFT SEAT	I TEFLON	I	VAPOR PRESSURE OF LIQUID 0.00100 KG/CM2	
I PLUG	I QUICK OPENING	I	CRITICAL PRESSURE 7.00000 KG/CM2	
I CHARACTERISTIC	I QUICK OPENING	I	DP ON CLOSE VALVE 13.20000 KG/CM2	
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI 846.1	I	*CV MAX.CALCULATED 6.16409	
I DP FOR MOTOR SIZE	I 13.200 KG/CM2	I	*CV MAX.CALCULATED OVERSIZED 1.70511	
I PROCESS FLUID ACTION	I CLOSE	I	*OVERSIZING FACTOR OF CV 1.25000	
I ON POWER FAILURE	I CLOSE	I	*CV SELECTED 53.00	
I HANDWHEEL	I NOT REQUIRED	I	*CF 0.85000	
I SPECIAL SERVICE	I	I	*CFR 0.81000	
I POSITIONER	I NOT REQUIRED	I	*R 1.00000	
I LIMIT SWITCH	I NOT REQUIRED	I	*FLUID VELOCITY 0.50757 M/SEC	
I SPRING RANGE	I 6 - 30 PSIG	I	(PIPE THK = 5.54 MM)	
I INPUT RANGE	I 3 - 15 PSIG	I		
I JACKET	I	I		
I ACCESSORIES	I	I		
I AMBIENT TEMPERATURE	I MIN 1.7 MAX43.3DEG.C	I		
I MANUFACTURER	I NUOVO PIGNONE	I		
I SUPPLIER	I NUOVO PIGNONE	I		
I MODEL	I 1000	I		
I QUANTITY	I 1	I		
I ORDER NUMBER	I 140600 BS 3136	I		

I MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1 di 1 Rev. 0

REV. 1 VERIFIED BY *fini* DATE 12/12/78

SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	VACUUM DISTILLATION	SH. 13 OF	DATE 05/12/78	1

TAG=7-2-FRC19V-IDENT.N. 13-PLANT= 7 -SERVICE=BTM P.A.		-CODES/PIPE=13A/ -JOB 00621-PIPE DIAM 8.000"	
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VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 5"	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	6"	FLUID - LIQUID	
RATING	300 ANSI	MAXIMUM FLOW 130135.94 KG/H	
BODY MATERIAL	A 217 C5	MINIMUM FLOW 77791.94 KG/H	
TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
BONNET	FINNED	UPSTREAM(AT MAX.FLOW) 4.20000 KG/CM2	
PACKING	TEFLON ASBESTOS	UPSTREAM(AT MIN.FLOW) 6.93000 KG/CM2	
LUBRICATOR MATERIAL	BODY MATERIAL	DOWNSTREAM(AT MAX.FLOW) 2.91000 KG/CM2	
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW) 2.26000 KG/CM2	
PLUG	CONTOURED	OPERATING TEMPERATURE 221.00 DEG.C	
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT. 0.77400 KG/DM3	
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID 0.00140 KG/CM2	
OP FOR MOTOR SIZE	10.500 KG/CM2	CRITICAL PRESSURE 10.69000 KG/CM2	
PROCESS FLUID ACTION	OPEN	OP ON CLOSE VALVE 10.50000 KG/CM2	
ON POWER FAILURE	OPEN	CV MAX.CALCULATED 152.87	
HANDWHEEL	REQUIRED	CV MAX.CALCULATED OVERSIZED 191.09	
SPECIAL SERVICE		OVERSIZING FACTOR OF CV 1.25000	
POSITIONER	WITH BY-PASS AND GAUGES	CV SELECTED 200.00	
LIMIT SWITCH	NOT REQUIRED	CV MIN.CALCULATED 48.02896	
SPRING RANGE	3 - 15 PSIG	CF 0.90000	
INPUT RANGE	3 - 15 PSIG	CFR 0.90000	
JACKET		R 0.99807	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (GET AT 40 PSIG) @~~	RANGEABILITY 4.16415	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.30DEG.C	FLUID VELOCITY 2.57435 M/SEC	
MANUFACTURER	NUOVO PIGNONE	(PIPE THK = 8.18 MM)	
SUPPLIER	NUOVO PIGNONE		
MODEL	1000		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES	
FOR GENERAL CHARACTERISTICS SEE	
SPEC. N. 000-SA-E-500.2B Sh. 1/7 Rev. 0	

* DATA CALCULATED OR SELECTED BY PROGRAMME	
REV. 2	VERIFIED BY <i>fin</i> DATE 29/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA-	50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH. 14 OF	DATE	05/12/78	

TAG=7-2-FRC20V-IDENT.N. 14-PLANT= 7 -SERVICE=TOP P.A. -CODES(PIPE=11A/ -JOB 0062)-PIPE DIAM 6.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	3"		
RATING	300 ANSI	FLUID - LIQUID	
BODY MATERIAL	A 216 WCB	MAXIMUM FLOW	37933.99 KG/H
TRIM MATERIAL	AISI 316	MINIMUM FLOW	17758.99 KG/H
BONNET	STANDARD	ABSOLUTE PRESSURES	
PACKING	TEFLON	UPSTREAM(AT MAX.FLOW)	7.00000 KG/CM2
LUBRICATOR MATERIAL		UPSTREAM(AT MIN.FLOW)	10.10000 KG/CM2
SOFT SEAT		DOWNSTREAM(AT MAX.FLOW)	5.93000 KG/CM2
PLUG	CONTOURED	DOWNSTREAM(AT MIN.FLOW)	5.65000 KG/CM2
CHARACTERISTIC	EQUAL PERCENTAGE	OPERATING TEMPERATURE	49.00000 DEG.C
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI 846.1	DENSITY AT OPERATING CONDIT.	0.86100 KG/DM3
DP FOR MOTOR SIZE	12.700 KG/CM2	VAPOR PRESSURE OF LIQUID	0.00010 KG/CM2
PROCESS FLUID ACTION	OPEN	CRITICAL PRESSURE	13.45000 KG/CM2
ON POWER FAILURE	OPEN	DP ON CLOSE VALVE	12.70000 KG/CM2
HANDWHEEL	NOT REQUIRED		
SPECIAL SERVICE		*CV MAX.CALCULATED	47.74550
POSITIONER	WITH BY-PASS AND GAUGES	*CV MAX.CALCULATED OVERSIZED	59.68188
LIMIT SWITCH	NOT REQUIRED	*OVERSIZING FACTOR OF CV	1.25000
SPRING RANGE	3 - 15 PSIG	*CV SELECTED	82.00000
INPUT RANGE	3 - 15 PSIG	*CV MIN.CALCULATED	10.96060
JACKET		*CF	0.90000
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~	*CFR	0.86000
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	*R	0.96975

MANUFACTURER	NUOVO PIGNONE	*RANGEABILITY	7.48134
SUPPLIER	NUOVO PIGNONE	*FLUID VELOCITY	2.79237 M/SEC
MODEL	1000	(PIPE THK = 7.11 MM)	
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1/1 Rev. 0

REV. 2 VERIFIED BY *fuor* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH.	15 OF	DATE	05/12/78

TAG=7-2-FRC2IV-IDENT.N. 15-PLANT= 7 -SERVICE=MIDDLE P.A. -CODES(PIPE=11A/ -JOB 00621-PIPE DIAM 8.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	6"		
ORATING	300 ANSI	FLUID - LIQUID	
BODY MATERIAL	A 216 WCB		
TRIM MATERIAL	AISI 316	MAXIMUM FLOW	123605.94 KG/H
DOWNNET	FINNED	MINIMUM FLOW	67929.94 KG/H
PACKING	TEFLON ASBESTOS	ABSOLUTE PRESSURES	
LUBRICATOR MATERIAL	BODY MATERIAL	UPSTREAM(AT MAX.FLOW)	4.20000 KG/CM2
SOFT SEAT		UPSTREAM(AT MIN.FLOW)	6.17000 KG/CM2
PLUG	CONTOURED	DOWNSTREAM(AT MAX.FLOW)	3.20000 KG/CM2
CHARACTERISTIC	EQUAL PERCENTAGE	DOWNSTREAM(AT MIN.FLOW)	2.50000 KG/CM2
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	OPERATING TEMPERATURE	202.00 DEG.C
DP FOR MOTOR SIZE	9.410 KG/CM2	DENSITY AT OPERATING CONDIT.	0.77200 KG/DH3
PROCESS FLUID ACTION	OPEN	VAPOR PRESSURE OF LIQUID	0.00170 KG/CM2
ON POWER FAILURE	OPEN	CRITICAL PRESSURE	11.67000 KG/CM2
HANDWHEEL	REQUIRED	DP ON CLOSE VALVE	9.41000 KG/CM2
SPECIAL SERVICE			
POSITIONER	WITH BY-PASS AND GAUGES	CV MAX.CALCULATED	166.77
LIMIT SWITCH	NOT REQUIRED	CV MAX.CALCULATED OVERSIZED	208.46
SPRING RANGE	3 - 15 PSIG	OVERSIZING FACTOR OF CV	1.25000
INPUT RANGE	3 - 15 PSIG	CV SELECTED	295.00
JACKET		CV MIN.CALCULATED	47.84125
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~	CF	0.90000
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	CFR	0.86000
MANUFACTURER	NUOVO PIGNONE	OR	0.98627
SUPPLIER	NUOVO PIGNONE	RANGEABILITY	6.16623
MODEL	1000	FLUID VELOCITY	2.45151 M/SEC
QUANTITY	1	(PIPE THK.= 8.18 MM)	
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1/7 Rev. 0

REV. 2 VERIFIED BY *Pucci* DATE 29/1/79

SNAM-PROGETTI - PROGRAMME ** C Q V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH. 27 OF	DATE 05/12/78	1

TAG=7-2-LDC-BV-IDENT.N. 27-PLANT= 7 -SERVICE=WATER FROM T01F -CODES(PIPE=13A/ -JOB 00621-PIPE DIAM 4.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	4"	FLUID - LIQUID	
RATING	300 ANSI	MAXIMUM FLOW 33417.99 KG/H	
BODY MATERIAL	A 216 WCB	MINIMUM FLOW 19999.99 KG/H	
TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
BONNET	STANDARD	UPSTREAM(AT MAX.FLOW) 1.10000 KG/CM2	
PACKING	TEFLON	UPSTREAM(AT MIN.FLOW) 1.10000 KG/CM2	
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW) 1.00000 KG/CM2	
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW) 1.00000 KG/CM2	
PLUG	TRIM CAGE TYPE	OPERATING TEMPERATURE 40.00000 DEG.C	
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT. 1.00000 KG/DM3	
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID 0.07500 KG/CM2	
DP FOR MOTOR SIZE	1.000 KG/CM2	CRITICAL PRESSURE 218.40 KG/CM2	
PROCESS FLUID ACTION	OPEN	DP ON CLOSE VALVE 1.00000 KG/CM2	
ON POWER FAILURE	CLOSE	CV MAX.CALCULATED 123.81	
HANDWHEEL	REQUIRED	CV MAX.CALCULATED OVERSIZED 154.76	
SPECIAL SERVICE		OVERSIZING FACTOR OF CV 1.25000	
POSITIONER	WITH BY-PASS AND GAUGES	CV SELECTED 195.00	
LIMIT SWITCH	NOT REQUIRED	CV MIN.CALCULATED 74.0949	
SPRING RANGE	3 - 15 PSIG	CF 0.90000	
INPUT RANGE	3 - 15 PSIG	CFR 0.86000	
JACKET		R 1.00000	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~	RANGEABILITY 2.63175	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	FLUID VELOCITY 1.13426 M/SEC	
MANUFACTURER	NUOVO PIGNONE	(PIPE THK = 6.02 MM)	
SUPPLIER	NUOVO PIGNONE		
MODEL	GREF		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1 ÷ 7 Rev. 0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *finer* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH. 30 OF	DATE	05/12/78	

TAG=7-2-TRC-BV-IDENT.N. 30-PLANT= 7 -SERVICE=REFLUX TO T01E -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 1 1/2"	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	2"	FLUID - LIQUID	
RATING	300 ANSI	MAXIMUM FLOW 17627.99 KG/H	
BODY MATERIAL	A 216 WCB	MINIMUM FLOW 10173.00 KG/H	
TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
BONNET	FINNED	UPSTREAM(AT MAX.FLOW) 9.20000 KG/CM2	
PACKING	TEFLON ASBESTOS	UPSTREAM(AT MIN.FLOW) 10.60000 KG/CM2	
LUBRICATOR MATERIAL	BODY MATERIAL	DOWNSTREAM(AT MAX.FLOW) 5.06000 KG/CM2	
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW) 3.40000 KG/CM2	
PLUG	CONTOURED	OPERATING TEMPERATURE 204.00 DEG.C	
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT. 0.75900 KG/DM3	
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID 0.03400 KG/CM2	
DP FOR MOTOR SIZE	13.000 KG/CM2	CRITICAL PRESSURE 13.45000 KG/CM2	
PROCESS FLUID ACTION	OPEN	DP ON CLOSE VALVE 13.00000 KG/CM2	
ON POWER FAILURE	OPEN		
HANDWHEEL	NOT REQUIRED	*CV MAX.CALCULATED 11.71368	
SPECIAL SERVICE		*CV MAX.CALCULATED OVERSIZED 14.64210	
POSITIONER	WITH BY-PASS AND GAUGES	*OVERSIZING FACTOR OF CV 1.25000	
LIMIT SWITCH	NOT REQUIRED	*CV SELECTED 23.00000	
SPRING RANGE	3 - 15 PSIG	*CV MIN.CALCULATED 5.12594	
INPUT RANGE	3 - 15 PSIG	*CF 0.90000	
JACKET		*CFR 0.90000	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) ②~~	*R 0.99459	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*RANGEABILITY 4.48698	
MANUFACTURER	NUOVO PIGNONE	*FLUID VELOCITY 3.37498 M/SEC	
SUPPLIER	NUOVO PIGNONE	(PIPE THK = 5.49 MM)	
MODEL	1000		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh.1 di 7 Rev.0

REV. 2 VERIFIED BY *Lucini* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCQP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH. 33 OF	DATE 05/12/78	

TAG=7-2-XX-3V -IDENT.N. 33-PLANT= 7 -SERVICE=GAS FROM 704F -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE	3 WAY DIVERTING
SEAT TYPE	DOUBLE SEAT WITH NORMAL TRIM
NOMINAL DIAMETER	3"
RATING	300 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	AISI 316
BONNET	STANDARD
PACKING	TEFLON
LUBRICATOR MATERIAL	
SOFT SEAT	MAX LEAKAGE 0.005% CV - MET. TO MET.
PLUG	QUICK OPENING
CHARACTERISTIC	QUICK OPENING
CONNECTIONS	FLANGED 1 RF 125 RMS 1 PER ANSI B46.1
DP FOR MOTOR SIZE	1.100 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	OPEN ANGLE WAY
HANDWHEEL	REQUIRED
SPECIAL SERVICE	
POSITIONER	NOT REQUIRED
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	3 - 15 PSIG
INPUT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C
MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1600 B
QUANTITY	1
ORDER NUMBER	140600 BS 3136

MESSAGES

CALCULATION IN ACCORDANCE WITH	
'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
FLUID- HYDROCARBON GAS	
MAXIMUM FLOW	99.99998 KG/H
ABSOLUTE PRESSURES	
UPSTREAM(AT MAX.FLOW)	1.20000 KG/CM2
DOWNSTREAM(AT MAX.FLOW)	1.00000 KG/CM2
OPERATING TEMPERATURE	40.00000 DEG.C
DENSITY AT OPERATING CONDIT.	0.00124 KG/DM3
MOLECULAR WEIGHT	30.00000
COMPR. FACTOR AT OPER. COND.	1.00000
DP ON CLOSE VALVE	1.10000 KG/CM2
CV MAX.CALCULATED	7.66405
CV MAX.CALCULATED OVERSIZED	9.58006
OVERSIZING FACTOR OF CV	1.25000
CV SELECTED	82.00000
CF	0.98000
CFR	0.94000
R	1.00000
FLUID VELOCITY	5.15088 M/SEC
AERODYNAMIC NOISE (DBEL/A)	
ESTIMATED AT 1 METRE	42.11626
(PIPE THK = 5.49 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh.1÷7 Rev.0

REV. 1 VERIFIED BY *finer* DATE 12/12/78

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	7
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	7-SA- 50728 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	VACUUM DISTILLATION	SH. 34 OF	DATE 05/12/78	

TAG=7-2-XX-4V -IDENT.N. 34-PLANT= 7 -SERVICE=H.S. TO 702JT -CODES(PIPE-25L/ -JOB 0062)-PIPE DIAM 4.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	DOUBLE SEAT WITH NORMAL TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	4"	FLUID - STEAM	
RATING	600 ANSI	MAXIMUM FLOW	5260.00 KG/H
BODY MATERIAL	AISI 316	MINIMUM FLOW	1500.00 KG/H
TRIM MATERIAL	AISI 316 WITH STELLITE	ABSOLUTE PRESSURES	
BONNET	PINNED	UPSTREAM(AT MAX.FLOW)	31.50000 KG/CM2
PACKING	GRAPHITE ASBESTOS	UPSTREAM(AT MIN.FLOW)	36.00000 KG/CM2
LUBRICATOR MATERIAL	BODY MATERIAL	DOWNSTREAM(AT MAX.FLOW)	28.00000 KG/CM2
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)	28.00000 KG/CM2
PLUG	QUICK OPENING	OPERATING TEMPERATURE	410.00 DEG.C
CHARACTERISTIC	QUICK OPENING	*DENSITY AT OPERATING CONDIT.	0.00962 KG/DM3
CONNECTIONS	FLANGED 1 RF 125 RMS 1 PER ANSI 846.1	MOLECULAR WEIGHT	18.00000
OP FOR MOTOR SIZE	34.967 KG/CM2	COMPR. FACTOR AT OPER. COND.	1.00000
PROCESS FLUID ACTION	OPEN	OP ON CLOSE VALVE	32.00000 KG/CM2
ON POWER FAILURE	OPEN		
HANDWHEEL	NOT REQUIRED	*CV MAX.CALCULATED	34.63501
SPECIAL SERVICE		*CV MAX.CALCULATED OVERSIZED	43.29378
POSITIONER	NOT REQUIRED	*OVERSIZING FACTOR OF CV	1.25000
LIMIT SWITCH	FULL OPEN POSITION (SPDT TYPE) EXPLOSION PROOF	*CV SELECTED	275.00
SPRING RANGE	6 - 30 PSIG	*CV MIN.CALCULATED	6.48051
INPUT RANGE	3 - 15 PSIG	*CF	0.90000
JACKET		*CFR	0.86000
ACCESSORIES		*R	1.00000
AMBIENT TEMPERATURE	MIN 1.7 MAX43.30EG.C	*RANGEABILITY	27.77557
MANUFACTURER	NUOVO PIGNONE	*FLUID VELOCITY	19.75601 M/SEC
SUPPLIER	NUOVO PIGNONE	AERODYNAMIC NOISE (DBEL/A)	
MODEL	1100	* ESTIMATED AT 1 METRE	74.74937
QUANTITY	1	(PIPE THK = 6.02 MM)	
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1:7 Rev. 0

REV. 2 VERIFIED BY *fuon* DATE 24/1/79

I SNAM-PROGETTI - PROGRAMME ** C O V A L **	I CUSTOMER	SCOP	I JOB	140600 PLANT	7
I INSTRUMENTS REQUISITION	I LOCATION	BASRAH REFINERY - IRAQ	I REQ. NO.	7-SA- 50728 REV.	1
I CONTROL VALVES AND REGULATORS	I PLANT	VACUUM DISTILLATION	I SH.	36 OF	DATE 05/12/78

I TAG=7-2-XX-6V -IDENT.N. 36-PLANT= 7 -SERVICE=H.S. TO 710JAT -CODES:PIPE=25L/ -JOB 00621-PIPE DIAM 3.000"

I VALVE TYPE	I REVERSIBLE GLOBE	I	CALCULATION IN ACCORDANCE WITH		I
I SEAT TYPE	I DOUBLE SEAT WITH NORMAL TRIM	I	*MASONELLAN HANDBOOK FOR CONTROL VALVE SIZING*		I
I NOMINAL DIAMETER	I 3"	I	FLUID - STEAM		I
I RATING	I 600 ANSI	I	MAXIMUM FLOW		1960.00 KG/H
I BODY MATERIAL	I AISI 316	I	MINIMUM FLOW		980.00 KG/H
I TRIM MATERIAL	I AISI 316 WITH STELLITE	I	ABSOLUTE PRESSURES		
I BONNET	I FINNED	I	UPSTREAM (AT MAX.FLOW)		31.50000 KG/CM2
I PACKING	I GRAPHITE ASBESTOS	I	UPSTREAM (AT MIN.FLOW)		36.00000 KG/CM2
I LUBRICATOR MATERIAL	I BODY MATERIAL	I	DOWNSTREAM (AT MAX.FLOW)		28.00000 KG/CM2
I SOFT SEAT	I	I	DOWNSTREAM (AT MIN.FLOW)		28.00000 KG/CM2
I PLUG	I QUICK OPENING	I	OPERATING TEMPERATURE		410.00 DEG.C
I CHARACTERISTIC	I QUICK OPENING	I	*DENSITY AT OPERATING CONDIT.		0.00962 KG/DM3
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I	MOLECULAR WEIGHT		18.00000
I DP FOR MOTOR SIZE	I 34.967 KG/CM2	I	COMPR. FACTOR AT OPER. COND.		1.00000
I PROCESS FLUID ACTION	I OPEN	I	DP ON CLOSE VALVE		32.00000 KG/CM2
I CN POWER FAILURE	I OPEN	I	*CV MAX.CALCULATED		12.90582
I HANDWHEEL	I NOT REQUIRED	I	*CV MAX.CALCULATED OVERSIZED		16.13228
I SPECIAL SERVICE	I	I	*OVERSIZING FACTOR OF CV		1.25000
I POSITIONER	I NOT REQUIRED	I	*CV SELECTED		155.00
I LIMIT SWITCH	I FULL OPEN POSITION (SPOT TYPE) EXPLOSION PROOF	I	*CV MIN.CALCULATED		4.29393
I SPRING RANGE	I 6 - 30 PSIG	I	*CF		0.90000
I INPLT RANGE	I 3 - 15 PSIG	I	*CFR		0.86000
I JACKET	I	I	*R		1.00000
I ACCESSORIES	I	I	*RANGEABILITY		24.79962
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.30 DEG.C	I	*FLUID VELOCITY		12.60436 M/SEC
I MANUFACTURER	I NUOVO PIGNONE	I	AERODYNAMIC NOISE (DBEL/A)		
I SUPPLIER	I NUOVO PIGNONE	I	ESTIMATED AT 1 METRE		67.49832
I MODEL	I 1100	I	(PIPE THK = 5.49 MM)		
I QUANTITY	I 1	I			
I ORDER NUMBER	I 140600 BS 3136	I			

I MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-500.28 Sh. 1:7 Rev. 0

REV. 2 I VERIFIED BY *fuor* I DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH.	3 OF	DATE	07/12/78

TAG=8-1-FRC-2V-IDENT.A. 3-PLANT= 8 -SERVICE=801J BY-PASS -CODES(PIPE=15A/ -JOB 0062)-PIPE DIAM 4.000"

VALVE TYPE	REVERSIBLE GLOBE
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM
NOMINAL DIAMETER	2"
RATING	600 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	FULL STELLITE
BONNET	STANDARD
PACKING	FOR VACUUM
LUBRICATOR MATERIAL	
SOFT SEAT	
PLUG	CONTOURED
CHARACTERISTIC	LINEAR
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.3
OP FOR MOTOR SIZE	54.000 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	OPEN
HANDWHEEL	NOT REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH BY-PASS AND GAUGES
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	3 - 15 PSIG
INPUT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) Q~~
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1000
QUANTITY	1
ORDER NUMBER	140600 BS 3136

MESSAGES

CALCULATION IN ACCORDANCE WITH
'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'

FLUID - LIQUID

MAXIMUM FLOW	18809.99 KG/H
MINIMUM FLOW	7940.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM (AT MAX.FLOW)	49.89999 KG/CM2
UPSTREAM (AT MIN.FLOW)	49.89999 KG/CM2
DOWNSTREAM (AT MAX.FLOW)	8.00000 KG/CM2
DOWNSTREAM (AT MIN.FLOW)	0.70000 KG/CM2
OPERATING TEMPERATURE	110.00 DEG.C
DENSITY AT OPERATING CONDIT.	0.96700 KG/DM3
VISCOSITY	700.00 CST
VAPOR PRESSURE OF LIQUID	0.00100 KG/CM2
CRITICAL PRESSURE	13.40000 KG/CM2
OP ON CLOSE VALVE	54.00000 KG/CM2
CV MAX.CALCULATED	3.52486
CV MAX.CALCULATED OVERSIZED	4.40608
OVERSIZING FACTOR OF CV	1.25000
CV SELECTED	10.00000
CV MIN.CALCULATED	1.48790
CF	0.90000
CFR	0.90000
CR	0.99180
RANGEABILITY	6.72088
FLUID VELOCITY	3.68768 M/SEC
(PIPE THK = 8.86 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh.1+7 Rev.0

REV. 2	VERIFIED BY	<i>Pignone</i>	DATE	29/1/79
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SHAM-PROGETTI - PROGRAMME ** C D V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH.	4 OF	DATE	07/12/78

TAG=8-1-FIC-3V-IDENT.N. 4-PLANT= 8 -SERVICE=DILUTION PROPANE -CODES(PIPE=25G/ -JOB 0062)-PIPE DIAM 2.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	DOUBLE SEAT WITH REDUCED TRIM 1"	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	1 1/2"	FLUID - LIQUID	
RATING	600 ANSI	MAXIMUM FLOW	6107.00 KG/H
BODY MATERIAL	A 216 WCB	MINIMUM FLOW	3396.00 KG/H
TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
BONNET	STANDARD	UPSTREAM(AT MAX.FLOW)	52.70000 KG/CM2
PACKING	TEFLON	UPSTREAM(AT MIN.FLOW)	57.70000 KG/CM2
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW)	49.70000 KG/CM2
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)	49.09999 KG/CM2
PLUG	CONTOURED	OPERATING TEMPERATURE	60.00000 DEG.C
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	0.42300 KG/DM3
CONNECTIONS	FLANGED 1 RF 125 RMS 1 PER ANSI B46.1	VAPOR PRESSURE OF LIQUID	23.00000 KG/CM2
DP FOR MOTOR SIZE	56.667 KG/CM2	CRITICAL PRESSURE	42.00000 KG/CM2
PROCESS FLUID ACTION	OPEN	DP ON CLOSE VALVE	54.09999 KG/CM2
ON POWER FAILURE	CLOSE		
HANDWHEEL	NOT REQUIRED	*CV MAX.CALCULATED	6.36766
SPECIAL SERVICE		*CV MAX.CALCULATED OVERSIZED	7.95958
POSITIONER	WITH ~~IN~~ PASS AND GAUGES	*OVERSIZING FACTOR OF CV	1.25000
LIMIT SWITCH	NOT REQUIRED	*CV SELECTED	13.00000
SPRING RANGE	6 - 30 PSIG	*CV MIN.CALCULATED	2.09137
INPUT RANGE	3 - 15 PSIG	*CF	0.80000
JACKET		*CFR	0.80000
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) ②~~	*R	0.99741
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*RANGEABILITY	6.21602
MANUFACTURER	NUOVO PIGNONE	*FLUID VELOCITY	3.68376 M/SEC
SUPPLIER	NUOVO PIGNONE	(PIPE THK = 5.54 MM)	
MODEL	1100		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh.1:7 Rev.0

REV. 2 VERIFIED BY *lion* DATE 29/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH. 7 OF	DATE 07/12/78	

TAG=8-1-FRC-6V-IDENT.N. 7-PLANT= 8 -SERVICE=ASPH.MIX. TO 801-B -CODES(PIPE=15A/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM	"MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"	
NOMINAL DIAMETER	2"	FLUID - LIQUID	
RATING	600 ANSI	MAXIMUM FLOW	12317.99 KG/H
BODY MATERIAL	A 216 WCB	MINIMUM FLOW	6280.00 KG/H
TRIM MATERIAL	AISI 316 WITH STELLITE	ABSOLUTE PRESSURES	
BONNET	STANDARD	UPSTREAM(AT MAX.FLOW)	45.59999 KG/CM2
PACKING	TEFLON	UPSTREAM(AT MIN.FLOW)	45.79999 KG/CM2
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW)	39.89999 KG/CM2
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)	27.09999 KG/CM2
PLUG	CONTOURED	OPERATING TEMPERATURE	60.00000 DEG.C
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	0.75500 KG/DM3
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID	21.00000 KG/CM2
OP FOR MOTOR SIZE	44.767 KG/CM2	OP ON CLOSE VALVE	36.00000 KG/CM2
PROCESS FLUID ACTION	OPEN	CV MAX.CALCULATED	6.95644
ON POWER FAILURE	CLOSE	CV MAX.CALCULATED OVERSIZED	8.69555
HANDWHEEL	NOT REQUIRED	OVERSIZING FACTOR OF CV	1.25000
SPECIAL SERVICE		CV SELECTED	20.00000
POSITIONER	WITH 8Y PASS AND GAUGES	CV MIN.CALCULATED	1.95805
LIMIT SWITCH	NOT REQUIRED	CF	0.90000
SPRING RANGE	15 - 30 PSIG	CFR	0.90000
INPLT RANGE	3 - 15 PSIG	OR	0.99067
JACKET		RANGEABILITY	10.21424
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~	FLUID VELOCITY	2.84032 M/SEC
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	(PIPE THK = 7.62 MM)	
MANUFACTURER	NUOVO PIGNONE		
SUPPLIER	NUOVO PIGNONE		
MODEL	1200		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

NOTE: VALVE BODY IS PROVIDED WITH A HOLE SIZE 1/2" NPTF FOR STEAM FLUSHING.

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-1 Rev. 0

REV. 2 VERIFIED BY *Piani* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH.	8 OF	DATE 07/12/78

TAG=8-1-FRC-TV-ICENT.N. 8-PLANT= 8 -SERVICE=ASPH.MIX. TO 801-B -CODES(PIPE=15A/ -JOB 00621-PIPE DIAM 3.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 1"	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*
NOMINAL DIAMETER	2"	
RATING	600 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	
TRIM MATERIAL	AISI 316 WITH STELLITE	MAXIMUM FLOW
BONNET	STANDARD	12317.99 KG/H
PACKING	TEFLON	MINIMUM FLOW
LUBRIFICATOR MATERIAL		6280.00 KG/H
SOFT SEAT		ABSOLUTE PRESSURES
PLUG	CONTOURED	UPSTREAM(AT MAX.FLOW)
CHARACTERISTIC	EQUAL PERCENTAGE	45.59999 KG/CM2
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	UPSTREAM(AT MIN.FLOW)
OP FOR MOTOR SIZE	44.767 KG/CM2	39.89999 KG/CM2
PROCESS FLUID ACTION	OPEN	DOWNSTREAM(AT MAX.FLOW)
CN POWER FAILURE	CLOSE	27.09999 KG/CM2
HANDWHEEL	NOT REQUIRED	DOWNSTREAM(AT MIN.FLOW)
SPECIAL SERVICE		OPERATING TEMPERATURE
POSITIONER	WITH ~~BY PASS AND~~ GAUGES	60.00000 DEG.C
LIMIT SWITCH	NOT REQUIRED	DENSITY AT OPERATING CONDIT.
SPRING RANGE	15 - 20 PSIG	0.75500 KG/DM3
INPUT RANGE	3 - 15 PSIG	VAPOR PRESSURE OF LIQUID
JACKET		21.00000 KG/CM2
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~	DP ON CLOSE VALVE
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	36.00000 KG/CM2
MANUFACTURER	NUOVO PIGNONE	
SUPPLIER	NUOVO PIGNONE	*CV MAX.CALCULATED
MODEL	1200	6.95644
QUANTITY	1	*CV MAX.CALCULATED OVERSIZED
ORDER NUMBER	140600 BS 3136	8.69555
		*OVERSIZING FACTOR OF CV
		1.25000
		*CV SELECTED
		20.00000
		*CV MIN.CALCULATED
		1.95805
		*CF
		0.90000
		*CFR
		0.90000
		*R
		0.99067
		*RANGEABILITY
		10.21424
		*FLUID VELOCITY
		2.84032 M/SEC
		(PIPE THK = 7.62 MM)

MESSAGES

NOTE: VALVE BODY IS PROVIDED WITH A HOLE SIZE 1/2" NPTF FOR STEAM FLUSHING.

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 2

REV. 2 VERIFIED BY *fuari* DATE 24/1/79

1 TAG=R-1-PIC-2V-ICENT.A. 13-PLANT= 8 -SERVICE=FUEL OIL TO NO1-B -CODES(PIPE=11G/ -JOB 0062)-PIPE DIAM 3.000"

I MANUFACTURER	I NUOVO PIGNONE
I SUPPLIER	I NUOVO PIGNONE
I MODEL	I GREF
I QUANTITY	I 1
I ORDER NUMBER	I 100600 AS 3136

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-500 28 Sh. 117 Rev. e

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1      CALCULATION IN ACCORDANCE WITH
1      *MASONELLAN HANDBOOK FOR CONTROL VALVE SIZING*
1
1      FLUID- HYDROCARBON GAS
1
1      MAXIMUM FLOW                      674.00 KG/H
1      MINIMUM FLOW                      185.00 KG/H
1      ABSOLUTE PRESSURES
1          UPSTREAM(AT MAX.FLOW)        7.30000 KG/CM2
1          UPSTREAM(AT MIN.FLOW)        8.00000 KG/CM2
1          DOWNSTREAM(AT MAX.FLOW)      2.50000 KG/CM2
1          DOWNSTREAM(AT MIN.FLOW)      1.20000 KG/CM2
1      OPERATING TEMPERATURE            40.00000 DEG.C
1      *DENSITY AT OPERATING CONDIT.    0.00397 KG/DM3
1      MOLECULAR WEIGHT                  21.50000
1      COMPR. FACTOR AT OPER. COND.     1.00000
1      OP ON-CLOSE VALVE                 9.00000 KG/CM2
1
1      *CV MAX.CALCULATED                7.23741
1      *CV MAX.CALCULATED OVERSIZED     9.04676
1      *OVERSIZING FACTOR OF CV         1.25000
1      *CV SELECTED                      14.00000
1      *CV MIN.CALCULATED                1.81035
1      *CF                               0.90000
1      *CFR                              0.86000
1      *R                                0.94759
1
1      *RANGEABILITY                     7.73331
1      *FLUID VELOCITY                   237.64 M/SEC
1      AERODYNAMIC NOISE (DBEL/A)
1      * ESTIMATED AT 1 METRE            85.27841
1      (PIPE THK = 5.49 MM)

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* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *juar* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	PROPANE DEASPHALTING	SH. 14 OF	DATE 07/12/78	1

TAG=B-1-PRC-3V-IDENT.N. 14-PLANT=		8	-SERVICE=801-E TOP OUTLET	-CODES(PIPE=15A/ -JOB 0062)-PIPE DIAM	6.000"
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VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	DOUBLE SEAT WITH REDUCED TRIM 3"	MASONETLAN HANDBOOK FOR CONTROL VALVE SIZING
NOMINAL DIAMETER	6"	
RATING	600 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	
TRIM MATERIAL	AISI 316 WITH STELLITE	MAXIMUM FLOW
BONNET	STANDARD	99550.94 KG/H
PACKING	TEFLON	MINIMUM FLOW
LUBRICATOR MATERIAL		55372.99 KG/H
SOFT SEAT		ABSOLUTE PRESSURES
PLUG	CONTOURED	UPSTREAM(AT MAX.FLOW)
CHARACTERISTIC	EQUAL PERCENTAGE	44.59999 KG/CM2
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI 846.1	UPSTREAM(AT MIN.FLOW)
OP FOR MOTOR SIZE	43.567 KG/CM2	44.59999 KG/CM2
PROCESS FLUID ACTION	OPEN	DOWNSTREAM(AT MAX.FLOW)
ON POWER FAILURE	OPEN	29.39999 KG/CM2
HANDWHEEL	REQUIRED	DOWNSTREAM(AT MIN.FLOW)
SPECIAL SERVICE		24.50000 KG/CM2
POSITIONER	WITH BY-PASS AND GAUGES	OPERATING TEMPERATURE
LIMIT SWITCH	NOT REQUIRED	74.00000 DEG.C
SPRING RANGE	3 - 15 PSIG	DENSITY AT OPERATING CONDIT.
INPUT RANGE	3 - 15 PSIG	0.42500 KG/DM3
JACKET		MOLECULAR WEIGHT
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~	44.00000
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	COMPR. FACTOR AT OPER. COND.
		0.75000
		LIQUID AND ITS VAPORS
		PERCENTAGE FLASH
		3.00000
		DP ON CLOSE VALVE
		40.09999 KG/CM2
		*CV MAX.CALCULATED
		60.67334
		*CV MAX.CALCULATED OVERSIZED
		75.84167
		*OVERSIZING FACTOR OF CV
		1.25000
		*CV SELECTED
		110.00
		*CV MIN.CALCULATED
		29.47559
		*CF
		0.80000
		*CFR
		0.80000
		*R
		1.00000
		*RANGEABILITY
		3.73190
		*FLUID VELOCITY
		3.86516 M/SEC
		(PIPE THK =10.97 MM)

MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1100
QUANTITY	1
ORDER NUMBER	140600 85 3136

MESSAGES

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh.1-7 Rev.0

REV. 2	VERIFIED BY <i>Pisa</i>	DATE 29/1/79
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SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH. 28 OF	DATE 07/12/78	

1 TAG-8-1-TRC2VA-ICENT.N. 28-PLANT= 8 -SERVICE=801-C BY PASS -CODES(PIPE=15A/ -JOB 0062)-PIPE DIAM 4.000"

1 VALVE TYPE	1 REVERSIBLE GLOBE	1 CALCULATION IN ACCORDANCE WITH
1 SEAT TYPE	1 SINGLE SEAT WITH REDUCED TRIM 1 1/2"	1 *MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*
1 NOMINAL DIAMETER	1 2"	
1 *RATING	1 600 ANSI	1 FLUID - LIQUID
1 *BODY MATERIAL	1 A 216 WCB	
1 *TRIM MATERIAL	1 AISI 316	1 MAXIMUM FLOW
1 *GONNET	1 STANDARD	1 15351.99 KG/H
1 *PACKING	1 TEFLON	1 ABSOLUTE PRESSURES
1 LUBRICATOR MATERIAL		1 UPSTREAM (AT MAX.FLOW)
1 SOFT SEAT		1 48.89999 KG/CM2
1 PLUG	1 CONTOURED	1 DOWNSTREAM (AT MAX.FLOW)
1 CHARACTERISTIC	1 EQUAL PERCENTAGE	1 47.20000 KG/CM2
1 *CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI B46.1	1 OPERATING TEMPERATURE
1 *OP FOR MOTOR SIZE	1 47.867 KG/CM2	1 93.00000 DEG.C
1 PROCESS FLUID ACTION	1 OPEN	1 DENSITY AT OPERATING CONDIT.
1 ON POWER FAILURE	1 CLOSE	1 0.79000 KG/DM3
1 HANDWHEEL	1 NOT REQUIRED	1 VISCOSITY
1 SPECIAL SERVICE		1 28.00000 CST
1 POSITIONER	1 WITH BY-PASS AND GAUGES	1 VAPOR PRESSURE OF LIQUID
1 *LIMIT SWITCH	1 NOT REQUIRED	1 31.00000 KG/CM2
1 *SPRING RANGE	1 15 - 30 PSIG	1 CRITICAL PRESSURE
1 INPUT RANGE	1 3 - 15 PSIG	1 20.00000 KG/CM2
1 JACKET		1 OP ON CLOSE VALVE
1 *ACCESSORIES	1 ~~1 FILTER REGUL. WITH GAUGES (SET AT 60 PSIG)~~	1 *CV MAX.CALCULATED
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C	1 15.64805
1 MANUFACTURER	1 NUOVO PIGNONE	1 *CV MAX.CALCULATED OVERSIZED
1 SUPPLIER	1 NUOVO PIGNONE	1 19.56006
1 MODEL	1 1000	1 *OVERSIZING FACTOR OF CV
1 QUANTITY	1 1	1 *CV SELECTED
1 ORDER NUMBER	1 140600 BS 3136	1 23.00000
		1 *CF
		1 0.90000
		1 *CFR
		1 0.90000
		1 *R
		1 0.99180
		1 *FLUID VELOCITY
		1 3.68407 M/SEC
		1 (PIPE THK = 8.56 MM)

1 MESSAGES

1 * DATA CALCULATED OR SELECTED BY PROGRAMME

1 FOR GENERAL CHARACTERISTICS SEE

1 SPEC. N. 000-SA-E-50028 Sh. 1-2 Rev. 0

1 REV. 2 1 VERIFIED BY *Pignone* 1 DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	B
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH.	29 OF	DATE	07/12/78

TAG=8-1-TRC2VB-IDENT.N. 29-PLANT= 8 -SERVICE=801-C OUT -CODES(PIPE=15A/ -JOB 0062)-PIPE DIAM 6.000"

I VALVE TYPE	I REVERSIBLE GLOBE
I SEAT TYPE	I DOUBLE SEAT WITH NORMAL TRIM
I NOMINAL DIAMETER	I 3"
I RATING	I 600 ANSI
I BODY MATERIAL	I A 216 WCB
I THIM MATERIAL	I A151 316
I BONNET	I STANDARD
I PACKING	I TEFLON
I LUBRICATOR MATERIAL	I
I SOFT SEAT	I
I PLUG	I V. PORT
I CHARACTERISTIC	I EQUAL PERCENTAGE
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1
I OP. FOR MOTOR SIZE	I 46.667 KG/CM2
I PROCESS FLUID ACTION	I OPEN
I ON POWER FAILURE	I OPEN
I HANDWHEEL	I NOT REQUIRED
I SPECIAL SERVICE	I
I POSITICKER	I WITH ~~BY-PASS~~ AND GAUGES
I LIMIT SWITCH	I NOT REQUIRED
I SPRING RANGE	I 4 - 30 PSIG
I INPUT RANGE	I 3 - 15 PSIG
I JACKET	I
I ACCESSORIES	I ~~FILTER REGUL. WITH GAUGES (507 AT 40 PSIG)~~
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.3 DEG.C

I MANUFACTURER	I NUOVO PIGNONE
I SUPPLIER	I NUOVO PIGNONE
I MODEL	I 1100
I QUANTITY	I 1
I ORDER NUMBER	I 140600 BS 3136

MESSAGES

CALCULATION IN ACCORDANCE WITH
'MASONNEILAN HANDBOOK FOR CONTROL VALVE SIZING'

FLUID - LIQUID

MAXIMUM FLOW	30703.99 KG/H
ABSOLUTE PRESSURES	
UPSTREAM(AT MAX.FLOW)	47.70000 KG/CM2
DOWNSTREAM(AT MAX.FLOW)	47.20000 KG/CM2
OPERATING TEMPERATURE	60.00000 DEG.C
DENSITY AT OPERATING CONDIT.	0.81300 KG/DM3
VISCOSITY	63.00000 CST
VAPOR PRESSURE OF LIQUID	17.00000 KG/CM2
CRITICAL PRESSURE	20.00000 KG/CM2
OP ON CLOSE VALVE	5.00000 KG/CM2

*CV MAX.CALCULATED	59.71051
*CV MAX.CALCULATED OVERSIZED	74.63814
*OVERSIZING FACTOR OF CV	1.25000
*CV SELECTED	110.00
*CF	0.98000
*CFR	0.94000
*R	0.94487
*FLUID VELOCITY (PIPE THK =10.97 MM)	2.97735 M/SEC

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1 di 7 Rev. 0

REV. 2 I VERIFIED BY *fuori* I DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	PROPANE DEASPHALTING	SH. 31 OF	DATE 07/12/78	1

TAG=8-1-TRC3VB-IDENT.N. 31-PLANT=		8	-SERVICE=802-C OUT	-CODES(PIPE=25G/ -JOB 00621-PIPE DIAM 6.000"
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VALVE TYPE SEAT TYPE NOMINAL DIAMETER RATING BODY MATERIAL TRIM MATERIAL BONNET PACKING LUBRICATOR MATERIAL SOFT SEAT PLUG CHARACTERISTIC CONNECTIONS DP FOR MOTOR SIZE PROCESS FLUID ACTION ON POWER FAILURE HANDWHEEL SPECIAL SERVICE POSITIONER LIMIT SWITCH SPRING RANGE INPUT RANGE JACKET ACCESSORIES AMBIENT TEMPERATURE		REVERSIBLE GLOBE DOUBLE SEAT WITH NORMAL TRIM 6" 600 ANSI A 216 WCB A151 316 STANDARD TEFLON V PORT EQUAL PERCENTAGE FLANGED 1 RF 125 RMS 1 PER ANSI B46.1 51.167 KG/CM2 OPEN OPEN REQUIRED WITH BY-PASS AND GAUGES ② NOT REQUIRED 3 - 15 PSIG ④ 3 - 15 PSIG ~~FILTER REGUL. WITH GAUGES (SET AT 90 PSIG) ⑤~~ MIN 1.7 MAX43.3DEG.C	CALCULATION IN ACCORDANCE WITH *MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING* FLUID - LIQUID MAXIMUM FLOW 91605.94 KG/H ABSOLUTE PRESSURES UPSTREAM(AT MAX.FLOW) 52.20000 KG/CM2 DOWNSTREAM(AT MAX.FLOW) 51.79999 KG/CM2 OPERATING TEMPERATURE 38.00000 DEG.C DENSITY AT OPERATING CONDIT. 0.47000 KG/DM3 VAPOR PRESSURE OF LIQUID 14.50000 KG/CM2 CRITICAL PRESSURE 42.00000 KG/CM2 DP ON CLOSE VALVE 5.00000 KG/CM2 *CV MAX.CALCULATED 247.51 *CV MAX.CALCULATED OVERSIZED 309.39 *OVERSIZING FACTOR OF CV 1.25000 *CV SELECTED 440.00 *CF 0.98000 *CFR 0.94000 *R 1.00000 *FLUID VELOCITY 2.90195 M/SEC (PIPE THK = 7.11 MM)
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MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	H00
QUANTITY	1
ORDER NUMBER	140600 85 3136

MESSAGES

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh.1-7 Rev.0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 | VERIFIED BY *fuori* | DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C.O.V.A.L. **	CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH. 32 OF	DATE 07/12/78	

I TAG=8-1-TIC-4V-IDENT.N. 32-PLANT= 8 -SERVICE=STEAM FROM 801-B -CODES(PIPE=11L/ -JOB 00621)-PIPE DIAM 2.000"

I VALVE TYPE	I REVERSIBLE GLOBE	I	CALCULATION IN ACCORDANCE WITH	
I SEAT TYPE	I SINGLE SEAT WITH REDUCED TRIM 1/4"	I	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
I NOMINAL DIAMETER	I 1 1/2"	I	FLUID - STEAM	
I RATING	I 600 ANSI	I	MAXIMUM FLOW 315.00 KG/H	
I BODY MATERIAL	I A 216 WCB	I	ABSOLUTE PRESSURES	
I TRIM MATERIAL	I AISI 316 WITH STELLITE	I	UPSTREAM (AT MAX. FLOW) 4.00000 KG/CM2	
I BONNET	I FINNED	I	DOWNSTREAM (AT MAX. FLOW) 1.00000 KG/CM2	
I PACKING	I GRAPHITE ASBESTOS	I	OPERATING TEMPERATURE 300.00 DEG.C	
I LUBRICATOR MATERIAL	I BODY MATERIAL	I	*DENSITY AT OPERATING CONDIT. 0.00093 KG/DM3	
I SCOT SEAT	I MAX LEAKAGE 0.005% CV. - MET. TO MET.	I	MOLECULAR WEIGHT 18.00000	
I PLUG	I CONTOURED	I	COMPR. FACTOR AT OPER. COND. 1.00000	
I CHARACTERISTIC	I EQUAL PERCENTAGE	I	OP ON CLOSE VALVE 5.50000 KG/CM2	
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I	*CV MAX. CALCULATED 8.68071	
I OP FOR MOTOR SIZE	I 5.500 KG/CM2	I	*CV MAX. CALCULATED OVERSIZED 10.85089	
I PROCESS FLUID ACTION	I OPEN	I	*OVERSIZING FACTOR OF CV 1.25000	
I ON POWER FAILURE	I OPEN	I	*CV SELECTED 16.0000	
I HANDWHEEL	I NOT REQUIRED	I	*CF 0.90000	
I SPECIAL SERVICE	I WITH BY-PASS AND GAUGES	I	*CFR -0.90000	
I POSITIONER	I NOT REQUIRED	I	*R 0.99855	
I LIMIT SWITCH	I 3 - 15 PSIG	I	*FLUID VELOCITY 182.92 M/SEC	
I SPRING RANGE	I 3 - 15 PSIG	I	*AERODYNAMIC NOISE (DBEL/A)	
I INPUT RANGE	I 3 - 15 PSIG	I	ESTIMATED AT 1 METRE 84.22929	
I JACKET	I	I	(PIPE THK = 3.91 MM)	
I ACCESSORIES	I FILTER REGUL. WITH GAUGES (SET AT 20 PSIG) @	I		
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.3 DEG.C	I		
I MANUFACTURER	I NUOVO PIGNONE	I		
I SUPPLIER	I NUOVO PIGNONE	I		
I MODEL	I 1000	I		
I QUANTITY	I 1	I		
I ORDER NUMBER	I 140600 BS 3136	I		

MESSAGES

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1 of 7 Rev. 0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *fiori* DATE 24/1/79

SHAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH.	20 OF	DATE	07/12/78

TAG=8-2-LIC-3V-IDENT.N. 20-PLANT= 8 -SERVICE=ASPHALT TO 805-E -CODES(PIPE=15A/ -JOB 0062)-PIPE DIAM 4.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM	MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING
NOMINAL DIAMETER	3"	FLUID - LIQUID
RATING	600 ANSI	MAXIMUM FLOW
BODY MATERIAL	A 216 WCB	MINIMUM FLOW
TRIM MATERIAL	AISI 316 WITH STELLITE	ABSOLUTE PRESSURES
BONNET	FINNED	UPSTREAM(AT MAX.FLOW)
PACKING	GRAPHITE ASBESTOS	UPSTREAM(AT MIN.FLOW)
LUBRICATOR MATERIAL	BODY MATERIAL	DOWNSTREAM(AT MAX.FLOW)
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)
PLUG	CONTOURED	OPERATING TEMPERATURE
CHARACTERISTIC	LINEAR	DENSITY AT OPERATING CONDIT.
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	MOLECULAR WEIGHT
OP FOR MOTOR SIZE	29.000 KG/CM2	COMPR. FACTOR AT OPER. COND.
PROCESS FLUID ACTION	OPEN	VISCOSITY
ON POWER FAILURE	CLOSE	VAPOR PRESSURE OF LIQUID
HANDWHEEL	NOT REQUIRED	CRITICAL PRESSURE
SPECIAL SERVICE		LIQUID AND ITS VAPORS
POSITIONER	WITH BY-PASS AND GAUGES	PERCENTAGE FLASH
LIMIT SWITCH	NOT REQUIRED	DP ON CLOSE VALVE
SPRING RANGE	15 - 30 PSIG	CV MAX.CALCULATED
INPUT RANGE	3 - 15 PSIG	CV MAX.CALCULATED OVERSIZED
JACKET		OVERSIZING FACTOR OF CV
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)	CV SELECTED
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	CV MIN.CALCULATED
MANUFACTURER	NUOVO PIGNONE	CF
SUPPLIER	NUOVO PIGNONE	CFR
MODEL	1200	FR
QUANTITY	1	ORANGEABILITY
ORDER NUMBER	140600 BS 3136	FLUID VELOCITY

MESSAGES

NOTE: VALVE BODY IS PROVIDED WITH A HOLE SIZE 1/2" NPTF FOR STEAM FLUSHING.

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-Y Rev. 0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *fuad* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH. 22 OF	DATE	07/12/78	

I TAG=8-2-LC- 5V-IDENT.N. 22-PLANT= 8 -SERVICE=BFW TO 806-C -CODES(PIPE=13D/ -JOB 00621-PIPE DIAM 1.500"

I VALVE TYPE	I NOT REVERSIBLE GLOBE	I	CALCULATION IN ACCORDANCE WITH		I
I SEAT TYPE	I SINGLE SEAT WITH REDUCED TRIM	3/8"	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*		I
I NOMINAL DIAMETER	I 1"				I
I RATING	I 600 ANSI		FLUID - LIQUID		I
I BODY MATERIAL	I A 216 WCB		MAXIMUM FLOW		2460.00 KG/H
I TRIM MATERIAL	I FULL STELLITE		MINIMUM FLOW		935.00 KG/H
I BONNET	I STANDARD		ABSOLUTE PRESSURES		
I PACKING	I TEFLON		UPSTREAM(AT MAX.FLOW)		24.29999 KG/CM2
I LUBRICATOR MATERIAL	I		UPSTREAM(AT MIN.FLOW)		24.89999 KG/CM2
I SOFT SEAT	I		DOWNSTREAM(AT MAX.FLOW)		4.50000 KG/CM2
I PLUG	I CONTOURED		DOWNSTREAM(AT MIN.FLOW)		4.50000 KG/CM2
I CHARACTERISTIC	I LINEAR		OPERATING TEMPERATURE		148.00 DEG.C
I CONNECTIONS	I FLANGED (RF 125 RNS) PER ANSI B46.1		DENSITY AT OPERATING CONDIT.		0.92000 KG/DH3
I OP FOR MOTOR SIZE	I 24.000 KG/CM2		VAPOR PRESSURE OF LIQUID		4.50000 KG/CM2
I PROCESS FLUID ACTION	I OPEN		CRITICAL PRESSURE		225.60 KG/CM2
I CN POWER FAILURE	I CLOSE		OP ON CLOSE VALVE		24.00000 KG/CM2
I HANDWHEEL	I NOT REQUIRED		*CV MAX.CALCULATED		0.73928
I SPECIAL SERVICE	I		*CV MAX.CALCULATED OVERSIZED		0.92410
I POSITIONER	I WITH BY-PASS AND GAUGES		*OVERSIZING FACTOR OF CV		1.25000
I LIMIT SWITCH	I NOT REQUIRED		*CV SELECTED		1.90000
I SPRING RANGE	I 3 - 15 PSIG		*CV MIN.CALCULATED		0.27691
I INPUT RANGE	I 3 - 15 PSIG		*CF		0.90000
I JACKET	I		*CFR		0.90000
I ACCESSORIES	I ~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG) Q~~		*R		0.99878
I AMBIENT TEMPERATURE	I MIN 1.7 MAX43.3DEG.C		*RANGEABILITY		6.86145
I MANUFACTURER	I NUOVO PIGNONE		*FLUID VELOCITY		1.74997 M/SEC
I SUPPLIER	I NUOVO PIGNONE		(PIPE THK = 5.08 MM)		
I MODEL	I 1200				
I QUANTITY	I 1				
I ORDER NUMBER	I 140600 BS 3136				

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1+1 Rev. 0

REV. 2 I VERIFIED BY *lioni* I DATE 24/1/79

SKAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH. 24 OF	DATE 07/12/78	

TAG-B-2-LIC-7V-IDENT.N. 24-PLANT= 8 -SERVICE-DAD TO STORAGE -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	1 1/2"	FLUID - LIQUID	
RATING	600 ANSI	MAXIMUM FLOW	9359.00 KG/H
BODY MATERIAL	A 216 WCB	MINIMUM FLOW	4743.00 KG/H
TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
BOUNNET	STANDARD	UPSTREAM(AT MAX.FLOW)	10.20000 KG/CM2
PACKING	TEFLON	UPSTREAM(AT MIN.FLOW)	12.90000 KG/CM2
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW)	9.00000 KG/CM2
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)	3.20000 KG/CM2
PLUG	CONTOURED	OPERATING TEMPERATURE	82.00000 DEG.C
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	0.90000 KG/DM3
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VISCOSITY	55.00000 CST
DP FOR MOTOR SIZE	16.000 KG/CM2	VAPOR PRESSURE OF LIQUID	0.00100 KG/CM2
PROCESS FLUID ACTION	OPEN	CRITICAL PRESSURE	9.10000 KG/CM2
ON POWER FAILURE	CLOSE	OP ON CLOSE VALVE	16.00000 KG/CM2
HANDWHEEL	NOT REQUIRED	*CV MAX.CALCULATED	11.01407
SPECIAL SERVICE		*CV MAX.CALCULATED OVERSIZED	13.76759
POSITIONER	WITH ~~BY PASS AND~~ GAUGES	*OVERSIZING FACTOR OF CV	1.25000
LIMIT SWITCH	NOT REQUIRED	*CV SELECTED	23.00000
SPRING RANGE	15 - 30 PSIG	*CV MIN.CALCULATED	1.96325
INPUT RANGE	3 - 15 PSIG	*CF	0.90000
JACKET		*CFR	0.86000
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) @~~	*R	0.95792
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*RANGEABILITY	11.71525
MANUFACTURER	NUOVO PIGNONE	*FLUID VELOCITY	2.63913 M/SEC
SUPPLIER	NUOVO PIGNONE	(PIPE THK = 5.49 MM)	
MODEL	1000		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1 of 7 Rev. 0

REV. 2 VERIFIED BY *fior* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C D V & L **	CUSTOMER	SCOP	JOB	140600	PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	Sh. 16 OF	DATE	05/12/78	

TAG=8-2-PIC-7V-IDENT.N. 16-PLANT= 8 -SERVICE=804-J BY-PASS -CODES(PIPE=13A/ -JOB 00621-PIPE DIAM 3.000")

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM	MASONEILLAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	2"		
RATING	300 ANSI	FLUID - LIQUID	
BODY MATERIAL	A 216 WCB	MAXIMUM FLOW	13061.99 KG/H
TRIM MATERIAL	AISI 316 WITH STELLITE	MINIMUM FLOW	5009.00 KG/H
BONNET	FINNED	ABSOLUTE PRESSURES	
PACKING	GRAPHITE ASBESTOS	UPSTREAM(AT MAX.FLOW)	12.60000 KG/CM2
LUBRICATOR MATERIAL	BODY MATERIAL	UPSTREAM(AT MIN.FLOW)	12.60000 KG/CM2
SOFT SEAT		DOWNSTREAM(AT MAX.FLOW)	5.10000 KG/CM2
PLUG	CONTOURED	DOWNSTREAM(AT MIN.FLOW)	1.47000 KG/CM2
CHARACTERISTIC	EQUAL PERCENTAGE	OPERATING TEMPERATURE	310.00 DEG.C
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI 846.1	DENSITY AT OPERATING CONDIT.	0.89000 KG/DH3
OP FOR MOTOR SIZE	13.000 KG/CM2	VISCOSITY	35.00000 CST
PROCESS FLUID ACTION	OPEN	VAPOR PRESSURE OF LIQUID	0.00100 KG/CM2
ON POWER FAILURE	OPEN	CRITICAL PRESSURE	10.70000 KG/CM2
HANDWHEEL	NOT REQUIRED	DP ON CLOSE VALVE	13.00000 KG/CM2
SPECIAL SERVICE			
POSITIONER	WITH BY-PASS AND GAUGES	*CV MAX.CALCULATED	5.96072
LIMIT SWITCH	NOT REQUIRED	*CV MAX.CALCULATED OVERSIZED	7.45090
SPRING RANGE	3 - 15 PSIG	*OVERSIZING FACTOR OF CV	1.25000
INPUT RANGE	3 - 15 PSIG	*CV SELECTED	20.00000
JACKET		*CV MIN.CALCULATED	1.94714
ACCESSORIES	~~PISTON REGUL. WITH GAUGES (SET AT 40 PSIG) @~~	*CF	0.90000
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*CFR	0.90000
		*R	0.99367
MANUFACTURER	NUOVO PIGNONE	*RANGEABILITY	10.27147
SUPPLIER	NUOVO PIGNONE	*FLUID VELOCITY	3.72471 M/SEC
MODEL	1200	(PIPE THK = 5.49 MM)	
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

NOTE: VALVE BODY IS PROVIDED WITH A HOLE SIZE 1/8" NPTF FOR STEAM FLUSHING.

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-500.28 Sh.1-7 Rev.0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *Pignone* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH. 17 OF	DATE 07/12/78	

1 TAG-B-2-PIC-BV-IDENT.N. 17-PLANT= 8 -SERVICE=805-J BY-PASS -CODES(PIPE=15A/ -JOB 00621-PIPE DIAM 1.500"

1 VALVE TYPE	1 NOT REVERSIBLE GLOBE	1	1 CALCULATION IN ACCORDANCE WITH		1
1 SEAT TYPE	1 SINGLE SEAT WITH REDUCED TRIM	3/8"	1 'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'		1
1 NOMINAL DIAMETER	1 1"		1		1
1 RATING	1 600 ANSI		1 FLUID - LIQUID		1
1 BODY MATERIAL	1 A 216 WCB		1		1
1 TRIM MATERIAL	1 FULL STELLITE		1 MAXIMUM FLOW		3875.00 KG/H
1 BONNET	1 STANDARD		1 MINIMUM FLOW		482.00 KG/H
1 PACKING	1 FOR VACUUM		1 ABSOLUTE PRESSURES		
1 LUBRICATOR MATERIAL	1		1 UPSTREAM(AT MAX.FLOW)		46.79999 KG/CM2
1 SOFT SEAT	1		1 UPSTREAM(AT MIN.FLOW)		46.79999 KG/CM2
1 PLUG	1 CONTOURED		1 DOWNSTREAM(AT MAX.FLOW)		2.00000 KG/CM2
1 CHARACTERISTIC	1 LINEAR		1 DOWNSTREAM(AT MIN.FLOW)		0.80000 KG/CM2
1 CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI B46.1		1 OPERATING TEMPERATURE		49.00000 DEG.C
1 DP FOR POTR SIZE	1 50.000 KG/CM2		1 DENSITY AT OPERATING CONDIT.		0.86100 KG/DH3
1 PROCESS FLUID ACTION	1 OPEN		1 VAPOR PRESSURE OF LIQUID		0.00100 KG/CM2
1 ON POWER FAILURE	1 OPEN		1 CRITICAL PRESSURE		13.40000 KG/CM2
1 HANDWHEEL	1 NOT REQUIRED		1 DP ON CLOSE VALVE		50.00000 KG/CM2
1 SPECIAL SERVICE	1		1		
1 POSITIONER	1 WITH BY-PASS AND GAUGES		1 *CV MAX.CALCULATED		0.79463
1 LIMIT SWITCH	1 NOT REQUIRED		1 *CV MAX.CALCULATED OVERSIZED		0.99329
1 SPRING RANGE	1 3 - 15 PSIG		1 *OVERSIZING FACTOR OF CV		1.25000
1 INPUT RANGE	1 3 - 15 PSIG		1 *CV SELECTED		1.90000
1 JACKET	1		1 *CV MIN.CALCULATED		0.09884
1 ACCESSORIES	1 ~~FILTER REGUL. WITH GAUGES (-SET AT 20 PSIG) @~~		1 *CF		0.90000
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX43.3DEG.C		1 *CFR		0.90000
1 MANUFACTURER	1 NUOVO PIGNONE		1 *R		0.99878
1 SUPPLIER	1 NUOVO PIGNONE		1 *RANGEABILITY		19.22266
1 MODEL	1 1200		1 *FLUID VELOCITY		2.94546 M/SEC
1 QUANTITY	1		1 (PIPE THK = 5.08 MM)		
1 ORDER NUMBER	1 140600 BS 3136				

1 MESSAGES
1 CAVITATION EXISTIT

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh.17 Rev.0

REV. 2 VERIFIED BY *Pinai* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	8
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	8-SA- 50828 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	PROPANE DEASPHALTING	SH. 23 OF	DATE 07/12/78	1

TAG=8-3-LIC-6V-ICENT.N. 23-PLANT= 8 -SERVICE=DAO TO 803-E -CODES(PIPE=13A/ -JOB 00621)-PIPE DIAM 3.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	DOUBLE SEAT WITH REDUCED TRIM 1"	'MASONELLAN HANDBOOK FOR CONTROL VALVE SIZING'
NOMINAL DIAMETER	1 1/2"	
RATING	600 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	
TRIM MATERIAL	FULL STELLITE	MAXIMUM FLOW
BONNET	STANDARD	9900.00 KG/H
PACKING	TEFLON	MINIMUM FLOW
LUBRICATOR MATERIAL		5030.00 KG/H
SOFT SEAT		ABSOLUTE PRESSURES
PLUG	CONTURED	UPSTREAM(AT MAX.FLOW)
CHARACTERISTIC	LINEAR	24.09999 KG/CM2
CONNECTIONS	FLANGED (RF 125 RNS) PER ANSI B46.1	UPSTREAM(AT MIN.FLOW)
DP FOR MOTOR SIZE	29.000 KG/CM2	26.59999 KG/CM2
PROCESS FLUID ACTION	OPEN	DOWNSTREAM(AT MAX.FLOW)
ON POWER FAILURE	CLOSE	2.80000 KG/CM2
HANDWHEEL	NOT REQUIRED	DOWNSTREAM(AT MIN.FLOW)
SPECIAL SERVICE		2.40000 KG/CM2
POSITIONER	WITH BY-PASS AND GAUGES	OPERATING TEMPERATURE
LIMIT SWITCH	NOT REQUIRED	177.00 DEG.C
SPRING RANGE	3 - 15 PSIG	DENSITY AT OPERATING CONDIT.
INPUT RANGE	3 - 15 PSIG	0.79000 KG/DM3
JACKET		MOLECULAR WEIGHT
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~	44.00000
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	COMPR. FACTOR AT OPER. COND.
		1.00000
MANUFACTURER	NUOVO PIGNONE	VAPOR PRESSURE OF LIQUID
SUPPLIER	NUOVO PIGNONE	24.00000 KG/CM2
MODEL	1100	CRITICAL PRESSURE
QUANTITY	1	9.10000 KG/CM2
ORDER NUMBER	140600 BS 3136	LIQUID AND ITS VAPORS
		PERCENTAGE FLASH
		6.00000
		DP ON CLOSE VALVE
		29.00000 KG/CM2
		*CV MAX.CALCULATED
		6.16527
		*CV MAX.CALCULATED OVERSIZED
		7.70659
		*OVERSIZING FACTOR OF CV
		1.25000
		*CV SELECTED
		13.00000
		*CV MIN.CALCULATED
		2.80836
		*CF
		0.80000
		*CFR
		0.80000
		*K
		0.98872
		*RANGEABILITY
		4.62903
		*FLUID VELOCITY
		3.18040 M/SEC
		(PIPE THK = 5.49 MM)

MESSAGES

FOR GENERAL CHARACTERISTICS SEE SPEC. N. 000-SA-E-50028 Sh.1+1 Rev. 0

REV. 2 VERIFIED BY *Pinu* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **
INSTRUMENTS REQUISITION
CONTROL VALVES AND REGULATORS

CUSTOMER SCOP
LOCATION BASRAH REFINERY - IRAQ
PLANT PROPANE DEASPHALTING

JOB 140600 PLANT 8
REQ. NO. 8-SA- 50828 REV. 1
SH. 19 OF DATE 07/12/78

TAG=8-3-PRC9VB-IDENT.N. 19-PLANT= 8 -SERVICE=PROPANE TO 807-C -CODES(PIPE=23G/ -JOB 0062)-PIPE DIAM 2.000"

VALVE TYPE REVERSIBLE GLOBE
SEAT TYPE SINGLE SEAT WITH REDUCED TRIM 3/4"
NOMINAL DIAMETER 1 1/2"
RATING 600 ANSI
BODY MATERIAL A 216 WCB
TRIM MATERIAL FULL STELLITE
BONNET STANDARD
PACKING TEFLON
LUBRICATOR MATERIAL
SOFT SEAT
PLUG
CHARACTERISTIC
CONTOURED
CONNECTIONS FLANGED (RF 125 RMS) PER ANSI B46.1
UP FOR MOTOR SIZE 26.000 KG/CM2
PROCESS FLUID ACTION OPEN
ON POWER FAILURE OPEN
HANDWHEEL NOT REQUIRED
SPECIAL SERVICE
POSITIONER
LIMIT SWITCH WITH 87 PASS AND GAUGES (SPLIT-RANGE) (INVERSE ACTION)
NOT REQUIRED
SPRING RANGE 3 - 15 PSIG
INPUT/OUTPUT SIGNAL POSIT. 9 - 15/15-3 PSIG
JACKET
ACCESSORIES
AMBIENT TEMPERATURE MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER NUOVO PIGNONE
SUPPLIER NUOVO PIGNONE
MODEL 1000
QUANTITY 1
ORDER NUMBER 140600 BS 3136

MESSAGES

CALCULATION IN ACCORDANCE WITH
"MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"

FLUID- HYDROCARBON GAS

MAXIMUM FLOW 1039.00 KG/H
MINIMUM FLOW 213.00 KG/H
ABSOLUTE PRESSURES
UPSTREAM (AT MAX.FLOW) 24.50000 KG/CM2
UPSTREAM (AT MIN.FLOW) 24.50000 KG/CM2
DOWNSTREAM (AT MAX.FLOW) 1.64000 KG/CM2
DOWNSTREAM (AT MIN.FLOW) 1.20000 KG/CM2
OPERATING TEMPERATURE 120.00 DEG.C
DENSITY AT OPERATING CONDIT. 0.01726 KG/DM3
MOLECULAR WEIGHT 44.00000
COMPR. FACTOR AT OPER. COND. 1.00000
DP ON CLOSE VALVE 26.00000 KG/CM2

CV MAX.CALCULATED 2.48471
CV MAX.CALCULATED OVERSIZED 3.10589
OVERSIZING FACTOR OF CV 1.25000
CV SELECTED 6.00000
CV MIN.CALCULATED 0.50938
CF 0.90000
CFR 0.90000
R 0.99855
RANGEABILITY 11.77902
FLUID VELOCITY 104.01 M/SEC
AERODYNAMIC NOISE (DBEL/A)
ESTIMATED AT 1 METRE 87.80803
(PIPE THK = 3.91 MM)

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 127 Rev. 0

REV. Z VERIFIED BY *Pignoni* DATE 24/1/79

1 .SNAM-PROGETTI - PROGRAMME ** C O V A L **	1 CUSTOMER SCOP	1 JOB 140600 PLANT 9
1 INSTRUMENTS REQUISITION	1 LOCATION BASRAH REFINERY - IRAQ	1 REQ. NO. 9-SA- 50928 REV. 1
1 CONTROL VALVES AND REGULATORS	1 PLANT FURFURAL EXTRACTION	1 SH. 2 OF DATE 07/12/78

1 TAG-9-1-FRC-2V-IDENT.N. 2-PLANT# 9 -SERVICE=CHARGE OIL TO 902E -CODES(PIPE=13A/ -JOB 00621)-PIPE DIAM 6.000"

1 VALVE TYPE	1 NOT REVERSIBLE GLOBE	1 CALCULATION IN ACCORDANCE WITH
1 SEAT TYPE	1 SINGLE SEAT WITH NORMAL TRIM	1 "MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"
1 NOMINAL DIAMETER	1 3"	1 FLUID - LIQUID
1 *RATING	1 300 ANSI	1 MAXIMUM FLOW 44289.99 KG/H
1 *BODY MATERIAL	1 A 216 WCB	1 MINIMUM FLOW 15083.00 KG/H
1 *IMM MATERIAL	1 AISI 316	1 ABSOLUTE PRESSURES
1 *BONNET	1 STANDARD	1 UPSTREAM(AT MAX.FLOW) 11.60000 KG/CM2
1 *PACKING	1 TEFLON	1 UPSTREAM(AT MIN.FLOW) 18.00000 KG/CM2
1 LUBRICATOR MATERIAL	1	1 DOWNSTREAM(AT MAX.FLOW) 10.10000 KG/CM2
1 SOFT SEAT	1	1 DOWNSTREAM(AT MIN.FLOW) 9.14000 KG/CM2
1 PLUG	1 TRIM CAGE TYPE	1 OPERATING TEMPERATURE 82.00000 DEG.C
1 CHARACTERISTIC	1 EQUAL PERCENTAGE	1 DENSITY AT OPERATING CONDIT. 0.84900 KG/DM3
1 *CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI B46.1	1 VISCOSITY 120.00 CST
1 *DP FOR MOTOR SIZE	1 16.967 KG/CM2	1 VAPOR PRESSURE OF LIQUID 0.00100 KG/CM2
1 PROCESS FLUID ACTION	1 OPEN	1 CRITICAL PRESSURE 8.30000 KG/CM2
1 ON POWER FAILURE	1 CLOSE	1 DP ON CLOSE VALVE 13.40000 KG/CM2
1 HANDWHEEL	1 NOT REQUIRED	1 *CV MAX.CALCULATED 47.91043
1 SPECIAL SERVICE	1	1 *CV MAX.CALCULATED OVERSIZED 59.88805
1 POSITIONER	1 WITH ~~BY-PASS~~ AND GAUGES	1 *OVERSIZING FACTOR OF CV 1.25000
1 *LIMIT SWITCH	1 NOT REQUIRED	1 *CV SELECTED 110.00
1 *SPRING RANGE	1 15 - 30 PSIG	1 *CV MIN.CALCULATED 6.71338
1 INPLT RANGE	1 3 - 15 PSIG	1 *CF 0.90000
1 JACKET	1	1 *CFR 0.86000
1 *ACCESSORIES	1 ~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~ @	1 *R 0.95970
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX43.3DEG.C	1 *RANGEABILITY 16.38518
1 MANUFACTURER	1 NUOVO PIGNONE	1 *FLUID VELOCITY 3.30633 M/SEC
1 SUPPLIER	1 NUOVO PIGNONE	1 (PIPE THK = 7.11 MM)
1 MODEL	1 GREF	
1 QUANTITY	1 1	
1 CRODR NUMBER	1 140600 BS 3136	

1 MESSAGES

1 * DATA CALCULATED OR SELECTED BY PROGRAMME

1 FOR GENERAL CHARACTERISTICS SEE

1 SPEC. N. 000-SA-E-50028 Sh.1÷7 Rev.0

1 REV. 2 1 VERIFIED BY *Pison* 1 DATE 29/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH.	3 OF	DATE	07/12/78

I TAG=9-1-FRC-3V-IDENT.A. 3-PLANT= 9 -SERVICE=FURFURAL TO 902E -CODES(PIPE=13B/ -JOB 00621)-PIPE DIAM 6.000"

VALVE TYPE	REVERSIBLE GLOBE
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 5"
NOMINAL DIAMETER	6"
RATING	300 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	AISI 316
BONNET	STANDARD
PACKING	TEFLON
LUBRICATOR MATERIAL	
SOFT SEAT	
PLUG	CONTOURED
CHARACTERISTIC	EQUAL PERCENTAGE
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1
OP FOR MOTOR SIZE	15.167 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	CLOSE
HANDWHEEL	REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH BY-PASS AND GAUGES
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	3 - 15 PSIG
INPUT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 60 PSIG) ②
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C

MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1000
QUANTITY	1
ORDER NUMBER	140600 BS 3136

MESSAGES

DO NOT USE RUBBER IN CONTACT WITH THE FLUID

CALCULATION IN ACCORDANCE WITH	
MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING	
FLUID - LIQUID	
MAXIMUM FLOW	139967.94 KG/H
MINIMUM FLOW	55007.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM (AT MAX.FLOW)	11.10000 KG/CM2
UPSTREAM (AT MIN.FLOW)	16.20000 KG/CM2
DOWNSTREAM (AT MAX.FLOW)	9.60000 KG/CM2
DOWNSTREAM (AT MIN.FLOW)	8.70000 KG/CM2
OPERATING TEMPERATURE	143.00 DEG.C
DENSITY AT OPERATING CONDIT.	1.02300 KG/DM3
VAPOR PRESSURE OF LIQUID	0.56000 KG/CM2
CRITICAL PRESSURE	56.09999 KG/CM2
OP ON CLOSE VALVE	12.00000 KG/CM2
*CV MAX.CALCULATED	132.37
*CV MAX.CALCULATED OVERSIZED	165.47
*OVERSIZING FACTOR OF CV	1.25000
*CV SELECTED	200.00
*CV MIN.CALCULATED	23.26523
*CF	0.90000
*CFR	0.90000
*R	1.00000
*RANGEABILITY	8.59651
*FLUID VELOCITY	2.03712 M/SEC
(PIPE THK = 7.11 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 157 Rev. e

REV. 2	VERIFIED BY	DATE
	<i>luar</i>	29/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH.	4 OF	DATE 05/12/78

1 TAG=9-1-FRC-4V-IDENT.N. 4-PLANT= 9 -SERVICE=702-E RECYCLE CODE=1-PIPE=1307 -JOB 00021-PIPE DIAM 8.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASCHELLAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	6"	FLUID - LIQUID	
*RATING	300 ANSI	MAXIMUM FLOW	159335.94 KG/H
*BODY MATERIAL	A 216 WCB	MINIMUM FLOW	70540.94 KG/H
*TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
*BONNET	STANDARD	UPSTREAM (AT MAX. FLOW)	12.40000 KG/CM2
*PACKING	TEFLON	UPSTREAM (AT MIN. FLOW)	13.60000 KG/CM2
LUBRICATOR MATERIAL		DOWNSTREAM (AT MAX. FLOW)	11.70000 KG/CM2
SOFT SEAT		DOWNSTREAM (AT MIN. FLOW)	9.50000 KG/CM2
PLUG	TRIM CAGE TYPE	OPERATING TEMPERATURE	138.00 DEG.C
CHARACTERISTIC	EQUAL PERCENTAGE (BALANCED)	DENSITY AT OPERATING CONDIT.	1.00800 KG/DM3
*CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID	0.50000 KG/CM2
*OP FOR MOTOR SIZE	12.587 KG/CM2	CRITICAL PRESSURE	52.00000 KG/CM2
PROCESS FLUID ACTION	OPEN	OP ON CLOSE VALVE	6.70000 KG/CM2
ON POWER FAILURE	CLOSE	*CV MAX. CALCULATED	230.37
HANDWHEEL	REQUIRED	*CV MAX. CALCULATED OVERSIZED	287.96
SPECIAL SERVICE		*OVERSIZING FACTOR OF CV	1.25000
POSITIONER	WITH BY-PASS AND GAUGES	*LV SELECTED	430.00
*LIMIT SWITCH	NOT REQUIRED	*CV MIN. CALCULATED	42.14188
*SPRING RANGE	3 - 15 PSIG	*CF	0.90000
INPUT RANGE	3 - 15 PSIG	*CFR	0.86000
JACKET		*R	0.96484
*ACCESSORIES	~~FILTER REGU. WITH GAUGES (SET AT 20 PSI)~~	*RANGEABILITY	10.20362
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	*FLUID VELOCITY	2.4208 M/SEC
MANUFACTURER	NUOVO PIGNONE	(PIPE THK = 8.18 MM)	
SUPPLIER	NUOVO PIGNONE		
MODEL	GRF B1		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-500.28 Sh. 1-7 Rev. 0

REV. 2 VERIFIED BY PIGN DATE 24/1/79

SHAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH.	5 OF	DATE	07/12/78

I TAG=9-1-FRC-5V-ICENT.N. 5-PLANT= 9 -SERVICE=EXTRACT RECYCLE -CODES(PIPE=13B/ -JOB 0062)-PIPE DIAM 3.000"

I VALVE TYPE	I NOT REVERSIBLE GLOBE	I CALCULATION IN ACCORDANCE WITH
I SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM	I 'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'
I NOMINAL DIAMETER	I 2"	
I RATING	I 300 ANSI	I FLUID - LIQUID
I BODY MATERIAL	I A 216 MCB	
I TRIM MATERIAL	I AISI 316	I MAXIMUM FLOW
I BONNET	I STANDARD	I 19659.00 KG/H
I PACKING	I TEFLON	I MINIMUM FLOW
I LUBRICATOR MATERIAL		I 8667.00 KG/H
I SOFT SEAT		I ABSOLUTE PRESSURES
I PLUG	I TRIM CAGE TYPE	I UPSTREAM(AT MAX.FLOW)
I CHARACTERISTIC	I EQUAL PERCENTAGE	I 12.60000 KG/CM2
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I UPSTREAM(AT MIN.FLOW)
I DP FOR MOTOR SIZE	I 14.867 KG/CM2	I DOWNSTREAM(AT MAX.FLOW)
I PROCESS FLUID ACTION	I OPEN	I 11.70000 KG/CM2
I ON POWER FAILURE	I CLOSE	I DOWNSTREAM(AT MIN.FLOW)
I HANDWHEEL	I NOT REQUIRED	I 9.50000 KG/CM2
I SPECIAL SERVICE		I OPERATING TEMPERATURE
I POSITIONER	I WITH BY-PASS AND GAUGES	I 98.00000 DEG.C
I LIMIT SWITCH	I NOT REQUIRED	I DENSITY AT OPERATING CONDIT.
I SPRING RANGE	I 15 - 30 PSIG	I 1.01100 KG/DM3
I INPUT RANGE	I 3 - 15 PSIG	I VAPOR PRESSURE OF LIQUID
I JACKET		I 0.30000 KG/CM2
I ACCESSORIES	I FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)	I CRITICAL PRESSURE
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.3 DEG.C	I 41.00000 KG/CM2
I MANUFACTURER	I NUOVO PIGNONE	I DP ON CLOSE VALVE
I SUPPLIER	I NUOVO PIGNONE	
I MODEL	I GREF	I *CV MAX.CALCULATED
I QUANTITY	I 1	I 24.14471
I ORDER NUMBER	I 140600 BS 3136	I *CV MAX.CALCULATED OVERSIZED
		I 30.18089
		I *OVERSIZING FACTOR OF CV
		I 1.25000
		I *CV SELECTED
		I 60.00
		I *CV MIN.CALCULATED
		I 3.99173
		I *CF
		I 0.90000
		I *CFR
		I 0.86000
		I *R
		I 0.94589
		I *RANGEABILITY
		I 15.03107
		I *FLUID VELOCITY
		I 1.13206 M/SEC
		I (PIPE THK = 5.49 MM)

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh.1:7 Rev.0

REV. 2 VERIFIED BY *Pisani* DATE 24/1/73

SNAM-PROGETTI - PROGRAMME ** C D V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 16 OF	DATE 07/12/78	1

I TAG=9-1-FRC51V-IDENT.N. 16-PLANT# 9 -SERVICE=EXT.MIX.FROM 902-E -CODES(PIPE=11B/ -JOB 00621-PIPE DIAM 8.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	6"	FLUID - LIQUID	
RATING	300 ANSI	MAXIMUM FLOW	164283.94 KG/H
BODY MATERIAL	A 216 WCB	MINIMUM FLOW	60514.99 KG/H
TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
BONNET	STANDARD	UPSTREAM(AT MAX.FLOW)	8.90000 KG/CM2
PACKING	TEFLON	UPSTREAM(AT MIN.FLOW)	9.10000 KG/CM2
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW)	7.90000 KG/CM2
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)	4.50000 KG/CM2
PLUG	CONTOURED	OPERATING TEMPERATURE	93.00000 DEG.C
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	1.05800 KG/DH3
CONNECTIONS	FLANGED 1 RF 125 RNS 1 PER ANSI B46.1	VAPOR PRESSURE OF LIQUID	0.50000 KG/CM2
OP FOR MOTOR SIZE	8.067 KG/CM2	CRITICAL PRESSURE	32.00000 KG/CM2
PROCESS FLUID ACTION	OPEN	DP ON CLOSE VALVE	8.00000 KG/CM2
ON POWER FAILURE	CLOSE		
HANDWHEEL	REQUIRED	*CV MAX.CALCULATED	189.34
SPECIAL SERVICE		*CV MAX.CALCULATED OVERSIZED	236.67
POSITIONER	WITH ~~BY PASS~~ AND GAUGES	*OVERSIZING FACTOR OF CV	1.25000
LIMIT SWITCH	NOT REQUIRED	*CV SELECTED	295.00
SPRING RANGE	15 - 30 PSIG	*CV MIN.CALCULATED	32.51801
INPUT RANGE	3 - 15 PSIG	*CF	0.90000
JACKET		*CFR	0.86000
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~	*R	0.98627
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*RANGEABILITY	9.07190
MANUFACTURER	NUOVO PIGNONE	*FLUID VELOCITY	2.37750 M/SEC
SUPPLIER	NUOVO PIGNONE	(PIPE THK = 8.18 MM)	
MODEL	1000		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES
DO NOT USE RUBBER IN CONTACT WITH THE FLUID

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh.1+7 Rev.0

REV. 2 VERIFIED BY *fian* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 23 OF	DATE 07/12/78	

I TAG-9-1-LC-1V -IDENT.N. 23-PLANT= 9 -SERVICE=CHARGE OIL TO901E -CODES(PIPE=11A/ -JOB 00621-PIPE DIAM 6.000"

I VALVE TYPE	I NOT REVERSIBLE GLOBE	I CALCULATION IN ACCORDANCE WITH
I SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM	I 'MASONIELAN' HANDBOOK FOR CONTROL VALVE SIZING'
I NOMINAL DIAMETER	I 4"	I
I RATING	I 300 ANSI	I FLUID - LIQUID
I BODY MATERIAL	I A 216 WCB	I
I TRIM MATERIAL	I AISI 316	I MAXIMUM FLOW
I BONNET	I STANDARD	I 44570.99 KG/H
I PACKING	I TEFLON	I MINIMUM FLOW
I LUBRIFICATOR MATERIAL	I	I 15173.99 KG/H
I SOFT SEAT	I	I ABSOLUTE PRESSURES
I PLUG	I TRIM CAGE TYPE	I UPSTREAM(AT MAX.FLOW)
I CHARACTERISTIC	I EQUAL PERCENTAGE	I 4.10000 KG/CM2
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I UPSTREAM(AT MIN.FLOW)
I DP FOR MOTOR SIZE	I 7.300 KG/CM2	I 7.50000 KG/CM2
I PROCESS FLUID ACTION	I OPEN	I DOWNSTREAM(AT MAX.FLOW)
I ON POWER FAILURE	I CLOSE	I 2.70000 KG/CM2
I HANDWHEEL	I REQUIRED	I DOWNSTREAM(AT MIN.FLOW)
I SPECIAL SERVICE	I	I 1.80000 KG/CM2
I POSITIONER	I WITH BY-PASS AND GAUGES	I OPERATING TEMPERATURE
I LIMIT SWITCH	I NOT REQUIRED	I 138.00 DEG.C
I SPRING RANGE	I 15 - 30 PSIG	I DENSITY AT OPERATING CONDIT.
I INPUT RANGE	I 3 - 15 PSIG	I 0.81300 KG/DM3
I JACKET	I	I VAPOR PRESSURE OF LIQUID
I ACCESSORIES	I FILTER REGUL. WITH GAUGES (SEE AT 10 PSIG) 2	I 0.10000 KG/CM2
I AMBIENT TEMPERATURE	I MIN 1.7 MAX43.3DEG.C	I CRITICAL PRESSURE
I	I	I 8.30000 KG/CM2
I MANUFACTURER	I NUOVO PIGNONE	I DP ON CLOSE VALVE
I SUPPLIER	I NUOVO PIGNONE	I
I MODEL	I GREF	I *CV MAX.CALCULATED
I QUANTITY	I 1	I 48.94412
I ORDER NUMBER	I 140600 BS 3136	I *CV MAX.CALCULATED OVERSIZED
I	I	I 61.18016
I	I	I *OVERSIZING FACTOR OF CV
I	I	I 1.25000
I	I	I *CV SELECTED
I	I	I 195.00
I	I	I *CV MIN.CALCULATED
I	I	I 8.25800
I	I	I *CF
I	I	I 0.90000
I	I	I *CFR
I	I	I 0.86000
I	I	I *R
I	I	I 0.91570
I	I	I *RANGEABILITY
I	I	I 23.61346
I	I	I *FLUID VELOCITY
I	I	I 3.47464 M/SEC
I	I	I (PIPE THK = 7.11 MM)

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1 of 7 Rev. 0

REV. 2 VERIFIED BY *Pinu* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 31 OF	DATE 04/10/78	

TAG=9-1-TICIVA-ICENT.N. 31-PLANT= 9 -SERVICE=FLRFURAL FROM 001C -CODES(PIPE=13B/ -JOB 00621-PIPE DIAM 4.000"

VALVE TYPE	BUTTERFLY	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'
NOMINAL DIAMETER	4"	
RATING	300 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	
TRIM MATERIAL	DISC AISI 316 - SHAFT & PIN 17-4-PH	MAXIMUM FLOW
BONNET	STANDARD	139967.94 KG/H
PACKING	TEFLON	ABSOLUTE PRESSURES
LUBRICATOR MATERIAL		UPSTREAM(AT MAX.FLOW)
SOFT SEAT		12.90000 KG/CM2
PLUG	BUTTERFLY	DOWNSTREAM(AT MAX.FLOW)
CHARACTERISTIC	FISHTAIL	12.40000 KG/CM2
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	OPERATING TEMPERATURE
DP FOR MOTOR SIZE	11.867 KG/CM2	153.00 DEG.C
PROCESS FLUID ACTION		DENSITY AT OPERATING CONDIT.
ON POWER FAILURE	OPEN	1.01200 KG/CM3
HANDWHEEL	REQUIRED	VAPOR PRESSURE OF LIQUID
SPECIAL SERVICE		0.80000 KG/CM2
POSITIONER	WITH ~~BY-PASS~~ AND GAUGES	CRITICAL PRESSURE
LIMIT SWITCH	NOT REQUIRED	56.09999 KG/CM2
SPRING RANGE	4 - 30 PSIG	DP ON CLOSE VALVE
INPUT RANGE	3 - 15 PSIG	6.00000 KG/CM2
JACKET		
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 35 PSIG)	CV MAX.CALCULATED
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	230.52
MANUFACTURER	FISHER CONTROLS S/A	CV MAX.CALCULATED OVERSIZED
SUPPLIER	FISHER CONTROLS S/A	288.15
MODEL	7611 FISHTAIL CLASS 2	OVERSIZING FACTOR OF CV
QUANTITY	1	1.25000
ORDER NUMBER	140600 BS-308	CV SELECTED 90° OPENING
		396.00
		CF
		0.65000
		CFR
		0.60000
		R
		0.99383
		FLUID VELOCITY
		4.96000 M/SEC
		(PIPE THX = 7.11 MM)

MESSAGES

DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh.1-7 Rev.0

REV. 2 VERIFIED BY *fiser* DATE 15/2/80

SNAM-PROGETTI - PROGRAMME ** COVAL **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 32 OF	DATE 07/12/78	

TAG=9-1-TICIVB-ICENT.N. 32-PLANT= 9 -SERVICE=901-C BY-PASS -CODES(PIPE=13B/ -JOB 0062)-PIPE DIAM 4.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	3"	FLUID - LIQUID	
RATING	300 ANSI	MAXIMUM FLOW	
BODY MATERIAL	A 216 WCB	ABSOLUTE PRESSURES	
TRIM MATERIAL	ATSI 316	UPSTREAM(AT MAX.FLOW)	
BONNET	STANDARD	DOWNSTREAM(AT MAX.FLOW)	
PACKING	TEFLON	OPERATING TEMPERATURE	
LUBRICATOR MATERIAL		DENSITY AT OPERATING CONDIT.	
SOFT SEAT		VAPOR PRESSURE OF LIQUID	
PLUG	TRIM CAGE TYPE	CRITICAL PRESSURE	
CHARACTERISTIC	EQUAL PERCENTAGE	DP ON CLOSE VALVE	
CONNECTIONS	FLANGED 1 RF 125 RMS 1 PER ANSI B46.1	CV MAX.CALCULATED	
DP FOR MOTOR SIZE	12.867 KG/CM2	CV MAX.CALCULATED OVERSIZED	
PROCESS FLUID ACTION	OPEN	OVERSIZING FACTOR OF CV	
ON POWER FAILURE	CLOSE	CV SELECTED	
HANDHEEL	NOT REQUIRED	CF	
SPECIAL SERVICE		CFR	
POSITIONER	WITH BY-PASS AND GAUGES	R	
LIMIT SWITCH	NOT REQUIRED	FLUID VELOCITY	
SPRING RANGE	15 - 30 PSIG	(PIPE THK = 6.02 MM)	
INPLT RANGE	3 - 15 PSIG		
JACKET			
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 50 PSIG) 1		
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C		
MANUFACTURER	NUOVO PIGNONE		
SUPPLIER	NUOVO PIGNONE		
MODEL	QREF		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

DO NOT USE RUBBER IN CONTACT WITH THE FLUID

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-5002B Sh. 1:7 Rev. 0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *Pinu* DATE 29/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 37 OF	DATE 04/10/78	

TAG=9-1-TRC4VA-IDENT.N. 37-PLANT= 9 -SERVICE=RECYCLE FROM 906-C -CODES(PIPE=13B/ -JOB 0062)-PIPE DIAM 10.000"

VALVE TYPE	BUTTERFLY	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASONELLAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	6"		
RATING	300 ANSI	FLUID - LIQUID	
BODY MATERIAL	A 216 WCB		
TRIM MATERIAL	DISC AISI 316 - SHAFT & PIN 17-4-PH	MAXIMUM FLOW 177635.88 KG/H	
BONNET	STANDARD	ABSOLUTE PRESSURES	
PACKING	TEFLON	UPSTREAM (AT MAX. FLOW) 11.00000 KG/CM2	
LUBRICATOR MATERIAL		DOWNSTREAM (AT MAX. FLOW) 10.50000 KG/CM2	
SOFT SEAT		OPERATING TEMPERATURE 93.00000 DEG.C	
PLUG	BUTTERFLY	DENSITY AT OPERATING CONDIT. 1.04500 KG/DN3	
CHARACTERISTIC	FISHTAIL	VAPOR PRESSURE OF LIQUID 0.20000 KG/CM2	
CONNECTIONS	FLANGED (PF 125 RMS) PER ANSI B46.1	CRITICAL PRESSURE 56.09999 KG/CM2	
CP FOR POTR SIZE	9.967 KG/CM2	DP ON CLOSE VALVE 4.80000 KG/CM2	
PROCESS FLUID ACTION			
ON POWER FAILURE	OPEN	*CV MAX. CALCULATED 343.45	
HAND-HEEL	REQUIRED	*CV MAX. CALCULATED OVERSIZED 429.32	
SPECIAL SERVICE		*OVERSIZING FACTOR OF CV 1.25000	
POSITIONER	WITH BY-PASS AND GAUGES	*CV SELECTED 90° OPENING 360.00	
LIMIT SWITCH	NOT REQUIRED	*CF 0.65000	
SPRING RANGE	6 - 30 PSIG	*CFR 0.60000	
INPUT RANGE	3 - 15 PSIG	*R 0.03826	
JACKET		*FLUID VELOCITY 2.67904 M/SEC	
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 35 PSIG)	(PIPE THK = 9.27 MM)	
AMBIEN. TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C		
MANUFACTURER	FISHER CONTROLS S/A		
SUPPLIER	FISHER CONTROLS S/A		
MODEL	T611 FISHTAIL CLASS 2		
QUANTITY	1		
ORDER NUMBER	140600 - 85 - 308		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-500.28 SH. 177 Rev. 0

REV. 2 VERIFIED BY *fischer* DATE 15/2/80

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 38 OF	DATE	07/12/78	

TAG-9-1-TRC4VB-ICENT.N. 38-PLANT= 9 -SERVICE=906-C BY-PASS -CODES(PIPE=13B/ -JOB 00621)-PIPE DIAM 6.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASONELLAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	4"	FLUID - LIQUID	
RATING	300 ANSI	MAXIMUM FLOW	
BODY MATERIAL	A 216 WCB	88817.94 KG/H	
TRIM MATERIAL	AINI 316	ABSOLUTE PRESSURES	
BONNET	STANDARD	UPSTREAM(AT MAX.FLOW)	
PACKING	TEFLON	11.70000 KG/CM2	
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW)	
SOFT SEAT		10.50000 KG/CM2	
PLUG	CONTOURED	OPERATING TEMPERATURE	
CHARACTERISTIC	EQUAL PERCENTAGE	136.00 DEG.C	
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	DENSITY AT OPERATING CONDIT.	
DP FOR MOTOR SIZE	10.667 KG/CM2	1.01200 KG/DM3	
PROCESS FLUID ACTION	OPEN	VAPOR PRESSURE OF LIQUID	
ON POWER FAILURE	CLOSE	0.50000 KG/CM2	
HANDWHEEL	REQUIRED	CRITICAL PRESSURE	
SPECIAL SERVICE		56.09999 KG/CM2	
POSITIONER	WITH BY-PASS AND GAUGES	DP ON CLOSE VALVE	
LIMIT SWITCH	NOT REQUIRED	1.20000 KG/CM2	
SPRING RANGE	15 - 30 PSIG	*CV MAX.CALCULATED	
INPUT RANGE	3 - 15 PSIG	96.36385	
JACKET		*CV MAX.CALCULATED OVERSIZED	
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) 	120.45	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.30DEG.C	*OVERSIZING FACTOR OF CV	
MANUFACTURER	HUOVO PIGNONE	1.25000	
SUPPLIER	HUOVO PIGNONE	*CV SELECTED	
MODEL	1000	135.00	
QUANTITY	1	*CF	
ORDER NUMBER	140600 BS 3136	0.90000	
		*CFR	
		0.86000	
		*R	
		0.97986	
		*FLUID VELOCITY	
		3.11594 M/SEC	
		(PIPE THK = 7.11 MM)	

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh.1-7 Rev.0

REV. 2 | VERIFIED BY *Pisoni* | DATE 24/1/79

SHAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH.	7 OF	DATE 07/12/78

TAG=9-2FRC-12V-IDENT.N. 7-PLANT= 9 -SERVICE=901B CHARGE COIL 1 -CODES(PIPE=13B/ -JOB 0062)-PIPE DIAM 4.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	4"	FLUID - LIQUID	
RATING	300 ANSI	MAXIMUM FLOW	
BODY MATERIAL	A 216 WCB	MINIMUM FLOW	
TRIP MATERIAL	AISI 316 WITH STELLITE	ABSOLUTE PRESSURES	
BONNET	STANDARD	UPSTREAM(AT MAX.FLOW)	
PACKING	TEFLON	UPSTREAM(AT MIN.FLOW)	
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW)	
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)	
PLUG	CONTOURED	OPERATING TEMPERATURE	
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID	
CP FOR MOTOR SIZE	22.300 KG/CM2	CRITICAL PRESSURE	
PROCESS FLUID ACTION	OPEN	DP ON CLOSE VALVE	
ON POWER FAILURE	OPEN	*CV MAX.CALCULATED	
HANDWHEEL	REQUIRED	*CV MAX.CALCULATED OVERSIZED	
SPECIAL SERVICE		*OVERSIZING FACTOR OF CV	
POSITIONER	WITH BY-PASS AND GAUGES	*CV SELECTED	
LIMIT SWITCH	NOT REQUIRED	*CV MIN.CALCULATED	
SPRING RANGE	3 - 15 PSIG	*CF	
INPUT RANGE	3 - 15 PSIG	*CFR	
JACKET		*R	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) Q~~	*RANGEABILITY	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*FLUID VELOCITY	
MANUFACTURER	NUOVO PIGNONE	(PIPE THK = 6.02 MM)	
SUPPLIER	NUOVO PIGNONE		
MODEL	1000		
QUANTITY	1		
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-500.28 Sh. 1.7 Rev. 0

REV. 2 VERIFIED BY *fuon* DATE 24/1/78

SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	PURFURAL EXTRACTION	SH.	8 OF	DATE 07/12/78

TAG=9-2FRC-13V-IDENT.N. 8-PLANT= 9 -SERVICE=901B CHARGE COIL 2 -CODES(PIPE=138/ -JOB 0062)-PIPE DIAM 4.000"						
VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH				
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*				
NOMINAL DIAMETER	4"	FLUID - LIQUID				
RATING	300 ANSI	MAXIMUM FLOW 53912.99 KG/H				
BODY MATERIAL	A 216 WCB	MINIMUM FLOW 21614.99 KG/H				
TRIM MATERIAL	AISI 316 WITH STELLITE	ABSOLUTE PRESSURES				
BONNET	STANDARD	UPSTREAM(AT MAX.FLOW) 20.00000 KG/CM2				
PACKING	TEFLON	UPSTREAM(AT MIN.FLOW) 22.79999 KG/CM2				
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW) 12.50000 KG/CM2				
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW) 6.00000 KG/CM2				
PLUG	CONTOURED	OPERATING TEMPERATURE 171.00 DEG.C				
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT. 0.96500 KG/CM3				
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID 1.23000 KG/CM2				
OP FOR MOTOR SIZE	22.300 KG/CM2	CRITICAL PRESSURE 53.50000 KG/CM2				
PROCESS FLUID ACTION	OPEN	DP ON CLOSE VALVE 22.29999 KG/CM2				
CN POWER FAILURE	OPEN	*CV MAX.CALCULATED 23.47775				
HANDWHEEL	REQUIRED	*CV MAX.CALCULATED OVERSIZED 29.34720				
SPECIAL SERVICE		*OVERSIZING FACTOR OF CV 1.25000				
POSITIONER	WITH BY-PASS AND GAUGES	*CV SELECTED 135.00				
LIMIT SWITCH	NOT REQUIRED	*CV MIN.CALCULATED 6.28919				
SPRING RANGE	3 - 15 PSIG	*CF 0.90000				
INPUT RANGE	3 - 15 PSIG	*CFR 0.86000				
JACKET		*R 1.00000				
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (NOT AT 40 PSIG)~~	*RANGEABILITY 21.46541				
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*FLUID VELOCITY 1.89960 M/SEC				
MANUFACTURER	NUOVO PIGNONE	(PIPE THK = 6.02 MM)				
SUPPLIER	NUOVO PIGNONE					
MODEL	1000					
QUANTITY	1					
ORDER NUMBER	140600 BS 3136					
MESSAGES						
FOR GENERAL CHARACTERISTICS SEE						
SPEC. N. 000-SA-E-50028 Sh.1 di T. Rev. 0						
* DATA CALCULATED OR SELECTED BY PROGRAMME						
REV. 2 VERIFIED BY <i>fiari</i> DATE 29/1/79						

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH.	24 OF	DATE	07/12/78

TAG=9-2-LIC-4V-IDENT.N. 24-PLANT= 9 -SERVICE=905-E CHARGE -CODES(PIPE=110/ -JOB 0062)-PIPE DIAM 6.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	DOUBLE SEAT WITH NORMAL TRIM	MASONELLIAN HANDBOOK FOR CONTROL VALVE SIZING
NOMINAL DIAMETER	4"	
RATING	300 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	MAXIMUM FLOW
TRIM MATERIAL	AISI 316 WITH STELLITE	MINIMUM FLOW
BONNET	FINNED	ABSOLUTE PRESSURES
PACKING	TEFLON (SUITABLE FOR VACUUM)	UPSTREAM(AT MAX.FLOW)
LUBRICATOR MATERIAL		UPSTREAM(AT MIN.FLOW)
SOFT SEAT		DOWNSTREAM(AT MAX.FLOW)
PLUG	V PORT	DOWNSTREAM(AT MIN.FLOW)
CHARACTERISTIC	EQUAL PERCENTAGE	OPERATING TEMPERATURE
CONNECTIONS	FLANGED (RF 125 RNS) PER ANSI B46.1	DENSITY AT OPERATING CONDIT.
DP FOR MOTOR SIZE	3.500 KG/CM2	MOLECULAR WEIGHT
PROCESS FLUID ACTION	OPEN	COMPR. FACTOR AT OPER. COND.
ON POWER FAILURE	OPEN	VAPOR PRESSURE OF LIQUID
HANDWHEEL	REQUIRED	CRITICAL PRESSURE
SPECIAL SERVICE		LIQUID AND ITS VAPORS
POSITIONER	WITH BY-PASS AND GAUGES	PERCENTAGE FLASH
LIMIT SWITCH	NOT REQUIRED	DP ON CLOSE VALVE
SPRING RANGE	3 - 15 PSIG	CV MAX.CALCULATED
INPUT RANGE	3 - 15 PSIG	CV MAX.CALCULATED OVERSIZED
JACKET		OVERSIZING FACTOR OF CV
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 20 PSIG) ①	CV SELECTED
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	CV MIN.CALCULATED
MANUFACTURER	NUOVO PIGNONE	CF
SUPPLIER	NUOVO PIGNONE	CFR
MODEL	1100	R
QUANTITY	1	RANGEABILITY
ORDER NUMBER	140600 BS 3136	FLUID VELOCITY
		(PIPE THK = 7.11 MM)

MESSAGES

DO NOT USE RUBBER IN CONTACT WITH THE FLUID

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 2 VERIFIED BY *Pian* DATE 24/1/79

I SNAME-PROGETTI - PROGRAMME ** C O V A L **	I CUSTOMER	SCOP	I JOB	140600 PLANT	9
I INSTRUMENTS REQUISITION	I LOCATION	BASRAH REFINERY - IRAQ	I REQ. NO.	9-SA- 50928 REV.	1
I CONTROL VALVES AND REGULATORS	I PLANT	FURFURAL EXTRACTION	I SH. 19 OF	DATE 05/12/78	

I TAG-9-2-PIC-6V-IDENT.N. 19-PLANT= 9 -SERVICE=FUEL GAS TO 901-B -CODES(PIPE=11G/ -JOB 00621-PIPE DIAM 4.000"

I VALVE TYPE	I NOT REVERSIBLE GLOBE
I SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM
I NOMINAL DIAMETER	I 1 1/2"
I *RATING	I 600 ANSI
I *BODY MATERIAL	I A 216 WCB
I *TRIM MATERIAL	I AISI 316
I *BUNNET	I STANDARD
I *PACKING	I TEFLON
I LUBRICATOR MATERIAL	I
I SOFT SEAT	I
I PLUG	I TRIM CAGE TYPE
I CHARACTERISTIC	I EQUAL PERCENTAGE
I *CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI 846.1
I *OP FOR MOTOR SIZE	I 9.000 KG/CM2
I PROCESS FLUID ACTION	I OPEN
I ON POWER FAILURE	I CLOSE
I HANDWHEEL	I NOT REQUIRED
I SPECIAL SERVICE	I
I POSITIONER	I WITH ~~PASS AND~~ GAUGES
I *LIMIT SWITCH	I NOT REQUIRED
I *SPRING RANGE	I 6 - 30 PSIG
I INPUT RANGE	I 3 - 15 PSIG
I JACKET	I
I *ACCESSORIES	I ~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~ ④
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.3 DEG.C
I MANUFACTURER	I NUOVO PIGNONE
I SUPPLIER	I NUOVO PIGNONE
I MODEL	I GREF
I QUANTITY	I 1
I ORDER NUMBER	I 140600 BS 3136

I CALCULATION IN ACCORDANCE WITH	
I *MASONETLAN HANDBOOK FOR CONTROL VALVE SIZING*	
I FLUID- HYDROCARBON GAS	
I MAXIMUM FLOW	1640.00 KG/H
I MINIMUM FLOW	484.00 KG/H
I ABSOLUTE PRESSURES	
I UPSTREAM(AT MAX.FLOW)	7.30000 KG/CM2
I UPSTREAM(AT MIN.FLOW)	8.00000 KG/CM2
I DOWNSTREAM(AT MAX.FLOW)	2.50000 KG/CM2
I DOWNSTREAM(AT MIN.FLOW)	1.20000 KG/CM2
I OPERATING TEMPERATURE	40.00000 DEG.C
I *DENSITY AT OPERATING CONDIT.	0.00397 KG/DM3
I MOLECULAR WEIGHT	21.50000
I COMPR. FACTOR AT OPER. COND.	1.00000
I DP ON CLOSE VALVE	9.00000 KG/CM2
I *CV MAX.CALCULATED	17.59688
I *CV MAX.CALCULATED OVERSIZED	21.99611
I *OVERSIZING FACTOR OF CV	1.25000
I *CV SELECTED	27.00000
I *CV MIN.CALCULATED	4.73628
I *CF	0.90000
I *CFR	0.86000
I *R	0.95792
I *RANGEABILITY	5.70067
I *FLUID VELOCITY	220.61 M/SEC
I *AERODYNAMIC NOISE (DBEL/A)	
I * ESTIMATED AT 1 METRE	85.11776
I (PIPE THK = 6.02 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 17 Rev. 2

REV. 2 VERIFIED BY *Finan* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 45 DF	DATE 07/12/78	

TAG=9-2-XX-2V -IDENT.N. 45-PLANT= 9 -SERVICE=FUEL GAS TO 901B -CODES/PIPE=11G/ -JOB 00621-PIPE DIAM 4.000"

VALVE TYPE	REVERSIBLE GLOBE
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM
NOMINAL DIAMETER	4"
RATING	300 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	AISI 316
BONNET	STANDARD
PACKING	TEFLON
LUBRICATOR MATERIAL	TEFLON
SOFT SEAT	TEFLON
PLUG	QUICK OPENING
CHARACTERISTIC	QUICK OPENING
CONNECTIONS	FLANGED 1 RF 125 RMS 1 PER ANSI B46.1
DP FOR MOTOR SIZE	9.000 KG/CM ²
PROCESS FLUID ACTION	CLOSE
ON POWER FAILURE	CLOSE
HANDWHEEL	NOT REQUIRED
SPECIAL SERVICE	
POSITIONER	NOT REQUIRED
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	6 - 30 PSIG
INPUT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C

MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1000
QUANTITY	1
ORDER NUMBER	140600 BS 3136

MESSAGES

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1^a Y. Rev. 0

CALCULATION IN ACCORDANCE WITH
'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'

FLUID- HYDROCARBON GAS

MAXIMUM FLOW	1640.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM (AT MAX. FLOW)	7.30000 KG/CM ²
DOWNSTREAM (AT MAX. FLOW)	7.00000 KG/CM ²
OPERATING TEMPERATURE	40.00000 DEG.C
DENSITY AT OPERATING CONDIT.	0.00579 KG/DM ³
MOLECULAR WEIGHT	21.50000
COMPR. FACTOR AT OPER. COND.	1.00000
DP ON CLOSE VALVE	9.00000 KG/CM ²

CV MAX. CALCULATED	46.84421
CV MAX. CALCULATED OVERSIZED	58.55527
OVERSIZING FACTOR OF CV	1.25000
CV SELECTED	180.00
CF	0.85000
CFR	0.81000
R	1.00000
FLUID VELOCITY	9.83456 M/SEC

AERODYNAMIC NOISE (DBEL/A)
ESTIMATED AT 1 METRE
(PIPE THK = 6.02 MM)

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 1	VERIFIED BY <i>fuau</i>	DATE 12/12/78
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SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 47 OF	DATE	05/12/78

TAG=9-2-XX-4V -IDENT.N. 47-PLANT= 9 -SERVICE=HS TO 906JAT -CODES(PIPE=25L/ -JOB 00621-PIPE DIAM 4.000")

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	DOUBLE SEAT WITH NORMAL TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	4"	FLUID - STEAM	
RATING	600 ANSI	MAXIMUM FLOW	
BODY MATERIAL	A 217 GC5	ABSOLUTE PRESSURES	
TRIM MATERIAL	ATSI 316	UPSTREAM(AT MAX.FLOW)	
BONNET	FINNED	DOWNSTREAM(AT MAX.FLOW)	
PACKING	GRAPHITE ASPESTOS	OPERATING TEMPERATURE	
LUBRICATOR MATERIAL	BODY MATERIAL	*DENSITY AT OPERATING CONDIT.	
SOFT SEAT		MOLECULAR WEIGHT	
PLUG	QUICK OPENING	COMPR. FACTOR AT OPER. COND.	
CHARACTERISTIC	QUICK OPENING	DP ON CLOSE VALVE	
CONNECTIONS	FLANGED 1 RE 125 RMS 1 PER ANSI 846.1	*CV MAX.CALCULATED	
OP FOR MOTOR SIZE	34.967 KG/CM2	*CV MAX.CALCULATED OVERSIZED	
PROCESS FLUID ACTION	OPEN	*OVERSIZING FACTOR OF CV	
ON POWER FAILURE	OPEN	*CV SELECTED	
HANDWHEEL	NOT REQUIRED	*CF	
SPECIAL SERVICE		*CFR	
POSITIONER	NOT REQUIRED	*R	
LIMIT SWITCH	FULL OPEN POSITION (SPDT TYPE) EXPLOSION PROOF	*FLUID VELOCITY	
SPRING RANGE	6 - 30 PSIG	AERODYNAMIC NOISE (DBEL/A)	
INPUT RANGE	3 - 15 PSIG	* ESTIMATED AT 1 METRE	
JACKET		(PIPE THK = 6.02 MM)	
ACCESSORIES			
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C		
MANUFACTURER	NUOVO PIGNONE		
SUPPLIER	NUOVO PIGNONE		
MODEL	1100		
QUANTITY	1		
ORDER NUMBER	140600 BS 8136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 2 VERIFIED BY *fusion* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 12 OF	DATE 07/12/78	

TAG=9-4-FRC32V-1CENT.N. 12-PLANT= 9 -SERVICE=904E VAPORS TO909E -CODES(PIPE=41F/ -JOB 00621-PIPE DIAM 8.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	4"	FLUID- HYDROCARBON GAS	
RATING	300 ANSI	MAXIMUM FLOW	7782.00 KG/H
BODY MATERIAL	AISI 316	MINIMUM FLOW	3728.00 KG/H
TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
BONNET	FINNED	UPSTREAM(AT MAX.FLOW)	2.90000 KG/CM2
PACKING	TEFLON ASBESTOS	UPSTREAM(AT MIN.FLOW)	3.10000 KG/CM2
LUBRICATOR MATERIAL	BODY MATERIAL	DOWNSTREAM(AT MAX.FLOW)	1.90000 KG/CM2
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)	1.30000 KG/CM2
PLUG	TRIM CAGE TYPE	OPERATING TEMPERATURE	206.00 DEG.C
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	0.00568 KG/DN3
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	MOLECULAR WEIGHT	96.07999
OP FOR MOTOR SIZE	3.300 KG/CM2	COMPR. FACTOR AT OPER. COND.	1.00000
PROCESS FLUID ACTION	OPEN	DP ON CLOSE VALVE	3.30000 KG/CM2
ON POWER FAILURE	CLOSE	CV MAX.CALCULATED	134.89
HANDWHEEL	REQUIRED	CV MAX.CALCULATED OVERSIZED	168.61
SPECIAL SERVICE		OVERSIZING FACTOR OF CV	1.25000
POSITIONER	WITH BY PASS AND GAUGES	CV SELECTED	195.00
LIMIT SWITCH	NOT REQUIRED	CV MIN.CALCULATED	53.48538
SPRING RANGE	6 - 30 PSIG	CF	0.90000
INPLT RANGE	3 - 15 PSIG	CFR	0.86000
JACKET		OR	0.97371
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)	RANGEABILITY	3.64585
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	FLUID VELOCITY	54.11299 M/SEC
MANUFACTURER	NUOVO PIGNONE	AERODYNAMIC NOISE (DBEL/A)	
SUPPLIER	NUOVO PIGNONE	ESTIMATED AT 1 METRE	77.80302
MODEL	GRF	(PIPE THK = 3.76 MM)	
QUANTITY	1		
ORDER NUMBER	140600 BS 316		

MESSAGES

DO NOT USE RUBBER IN CONTACT WITH THE FLUID

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh 127 Rev. 0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *Phen* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH.	14 OF	DATE	07/12/78

TAG=9-4-FRC34V-ICENT.N. 14-PLANT= 9 -SERVICE=910E CHARGE -CODES(PIPE=118/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE	REVERSIBLE GLOBE
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM
NOMINAL DIAMETER	1 1/2"
RATING	600 ANSI
BODY MATERIAL	AISI 316
TRIM MATERIAL	AISI 316
BONNET	STANDARD
PACKING	TEFLON
LUBRICATOR MATERIAL	
SOFT SEAT	
PLUG	V PORT
CHARACTERISTIC	EQUAL PERCENTAGE
CONNECTIONS	FLANGED (RF 125 BMS) PER ANSI B46.1
DP FOR MOTOR SIZE	6.700 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	CLOSE
HANDWHEEL	NOT REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH ~~BY-PASS~~ AND GAUGES
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	6 - 30 PSIG
INPUT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1000
QUANTITY	1
ORDER NUMBER	140600 BS 3136

CALCULATION IN ACCORDANCE WITH
"MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"

FLUID - LIQUID

MAXIMUM FLOW	7550.00 KG/H
MINIMUM FLOW	1790.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM(AT MAX.FLOW)	4.95000 KG/CM2
UPSTREAM(AT MIN.FLOW)	5.50000 KG/CM2
DOWNSTREAM(AT MAX.FLOW)	3.00000 KG/CM2
DOWNSTREAM(AT MIN.FLOW)	2.50000 KG/CM2
OPERATING TEMPERATURE	60.00000 DEG.C
DENSITY AT OPERATING CONDIT.	0.99600 KG/DH3
VAPOR PRESSURE OF LIQUID	0.21000 KG/CM2
CRITICAL PRESSURE	56.09999 KG/CM2
DP ON CLOSE VALVE	6.70000 KG/CM2
CV MAX.CALCULATED	6.62568
CV MAX.CALCULATED OVERSIZED	8.28210
OVERSIZING FACTOR OF CV	1.25000
CV SELECTED	23.00000
CV MIN.CALCULATED	1.26646
CF	0.90000
CFR	0.86000
R	0.95792
RANGEABILITY	18.16078
FLUID VELOCITY	1.92380 M/SEC
(PIPE THK = 5.49 MM)	

MESSAGES

DO NOT USE RUBBER IN CONTACT WITH THE FLUID

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 14Y Rev. 0

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *Pisani* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER SCOP	JOB 140600 PLANT 9
INSTRUMENTS REQUISITION	LOCATION BASRAH REFINERY - IRAQ	REQ. NO. 9-SA- 50928 REV. 1
CONTROL VALVES AND REGULATORS	PLANT FURFURAL EXTRACTION	SH. 15 OF DATE 07/12/78

TAG=9-4-FIC35V-IDENT.N. 15-PLANT= 9 -SERVICE=910E STRIP. STEAM -CODES(PIPE=111/ -JOB 00621)-PIPE DIAM 4.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH "MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM		
NOMINAL DIAMETER	3"	FLUID - STEAM	
RATING	300 ANSI	MAXIMUM FLOW	2576.00 KG/H
BODY MATERIAL	A 216 WCB	MINIMUM FLOW	446.00 KG/H
TRIM MATERIAL	17-4 PH	ABSOLUTE PRESSURES	
BONNET	FINNED	UPSTREAM(AT MAX.FLOW)	3.30000 KG/CM ²
PACKING	TEFLON ASBESTOS	UPSTREAM(AT MIN.FLOW)	4.00000 KG/CM ²
LUBRIFICATOR MATERIAL	BODY MATERIAL	DOWNSTREAM(AT MAX.FLOW)	1.40000 KG/CM ²
SOFT SEAT		DOWNSTREAM(AT MIN.FLOW)	1.14000 KG/CM ²
PLUG	TRIM CAGE TYPE	OPERATING TEMPERATURE	232.00 DEG.C
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	0.00100 KG/DM ³
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	MOLECULAR WEIGHT	18.00000
DP FOR POTR SIZE	5.100 KG/CM ²	COMPR. FACTOR AT OPER. COND.	1.00000
PROCESS FLUID ACTION	OPEN	DP ON CLOSE VALVE	5.10000 KG/CM ²
ON POWER FAILURE	CLOSE		
HANDWHEEL	NOT REQUIRED	CV MAX.CALCULATED	81.49423
SPECIAL SERVICE		CV MAX.CALCULATED OVERSIZED	101.87
POSITIONER	WITH BY-PASS AND GAUGES	OVERSIZING FACTOR OF CV	1.25000
LIMIT SWITCH	NOT REQUIRED	CV SELECTED	110.00
SPRING RANGE	6 - 30 PSIG	CV MIN.CALCULATED	11.51987
INPUT RANGE	3 - 15 PSIG	CF	0.90000
JACKET		CFR	0.86000
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 90 PSIG)	OR	0.97935
AMBIENT TEMPERATURE	MIN 1.7 MAX43.30DEG.C	RANGEABILITY	9.55701
MANUFACTURER	NUOVO PIGNONE	FLUID VELOCITY	261.8100 M/SEC
SUPPLIER	NUOVO PIGNONE	AERODYNAMIC NOISE (DBEL/A)	
MODEL	GRF	ESTIMATED AT 1 METRE	89.52905
QUANTITY	1	(PIPE THK = 6.02 MM)	
ORDER NUMBER	140600 BS 3136		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 2 VERIFIED BY *fuou* DATE 24/1/79

SHAW-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER SCOP	JOB 140600 PLANT 9
INSTRUMENTS REQUISITION	LOCATION BASRAH REFINERY - IRAQ	REQ. NO. 9-SA- 50928 REV. 1
CONTROL VALVES AND REGULATORS	PLANT FURFURAL EXTRACTION	SH. 29 OF DATE 07/12/78

I TAG-9-4-LC-14V-IDENT.N. 29-PLANT# 9 -SERVICE-WATER FROM 910-E -CODES(PIPE=118/ -JOB 00621)-PIPE DIAM 3.000"

I VALVE TYPE	I NOT REVERSIBLE GLOBE
I SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM
I NOMINAL DIAMETER	I 2"
I RATING	I 300 ANSI
I BODY MATERIAL	I MONEL
I TRIM MATERIAL	I MONEL
I BONNET	I STANDARD
I PACKING	I TEFLON
I LUBRICATOR MATERIAL	I
I SOFT SEAT	I
I PLUG	I TRIM CAGE TYPE
I CHARACTERISTIC	I EQUAL PERCENTAGE
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1
I DP FOR MOTOR SIZE	I 3.500 KG/CM2
I PROCESS FLUID ACTION	I OPEN
I ON POWER FAILURE	I CLOSE
I HANDWHEEL	I NOT REQUIRED
I SPECIAL SERVICE	I
I POSITIONER	I WITH BY PASS AND GAUGES
I LIMIT SWITCH	I NOT REQUIRED
I SPRING RANGE	I 6 - 30 PSIG
I INPUT RANGE	I 3 - 15 PSIG
I JACKET	I
I ACCESSORIES	I FILTER REGUL. WITH GAUGES (SET AT 40 PSIG) ①
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.3 DEG.C
I MANUFACTURER	I NUOVO PIGNONE
I SUPPLIER	I NUOVO PIGNONE
I MODEL	I GREF
I QUANTITY	I 1
I ORDER NUMBER	I 140600 BS 3136

MESSAGES

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 17 Rev. 2

I CALCULATION IN ACCORDANCE WITH	
I *MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
I FLUID = LIQUID	
I MAXIMUM FLOW	I 7260.00 KG/H
I MINIMUM FLOW	I 1258.00 KG/H
I ABSOLUTE PRESSURES	
I UPSTREAM(AT MAX.FLOW)	I 1.40000 KG/CM2
I UPSTREAM(AT MIN.FLOW)	I 1.44000 KG/CM2
I DOWNSTREAM(AT MAX.FLOW)	I 1.03000 KG/CM2
I DOWNSTREAM(AT MIN.FLOW)	I 1.03000 KG/CM2
I OPERATING TEMPERATURE	I 109.00 DEG.C
I DENSITY AT OPERATING CONDIT.	I 0.95200 KG/DM3
I VAPOR PRESSURE OF LIQUID	I 1.40000 KG/CM2
I CRITICAL PRESSURE	I 225.60 KG/CM2
I DP ON CLOSE VALVE	I 3.50000 KG/CM2
I *CV MAX.CALCULATED	I 32.86029
I *CV MAX.CALCULATED OVERSIZED	I 41.07538
I *OVERSIZING FACTOR OF CV	I 1.25000
I *CV SELECTED	I 60.00
I *CV MIN.CALCULATED	I 4.70361
I *CF	I 0.90000
I *CFR	I 0.86000
I *R	I 0.94589
I *RANGEABILITY	I 12.75615
I *FLUID VELOCITY	I 1.48505 M/SEC
I (PIPE THK = 9.49 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2	VERIFIED BY <i>liaw</i>	DATE 04/1/79
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SNAM-PROGETTI - PROGRAMME ** C D V A L **
 INSTRUMENTS REQUISITION
 CONTROL VALVES AND REGULATORS

CUSTOMER SCOP
 LOCATION BASRAH REFINERY - IRAQ
 PLANT FURFURAL EXTRACTION

JOB 140600 PLANT 9
 REQ. NO. 9-SA- 50928 REV. 1
 SH. 17 OF DATE 07/12/78

TAG=9-4-PRC-4V-IDENT.N. 17-PLANT= 9 -SERVICE=FURFURAL FROM 909C -CODES(PIPE=118/ -JOB 00621)-PIPE DIAM 6.000"

VALVE TYPE REVERSIBLE GLOBE
 SEAT TYPE DOUBLE SEAT WITH REDUCED TRIM 5"
 NOMINAL DIAMETER 6"
 RATING 300 ANSI
 BODY MATERIAL A 216 WCB
 TRIM MATERIAL AISI 316 WITH STELLITE
 BONNET STANDARD
 PACKING TEFLON
 LUBRICATOR MATERIAL
 SOFT SEAT
 PLUG CONTOURED
 CHARACTERISTIC EQUAL PERCENTAGE
 CONNECTIONS FLANGED (RF 125 RMS) PER ANSI B46.1
 OP FOR MOTOR SIZE 3.300 KG/CM2
 PROCESS FLUID ACTION OPEN
 ON POWER FAILURE OPEN
 HANDWHEEL REQUIRED
 SPECIAL SERVICE
 POSITIONER WITH BY-PASS AND GAUGES
 LIMIT SWITCH NOT REQUIRED
 SPRING RANGE 3 - 15 PSIG
 INPUT RANGE 3 - 15 PSIG
 JACKET
 ACCESSORIES FILTER REGUL. WITH GAUGES (SEE AT CO. P&ID) ②
 AMBIENT TEMPERATURE MIN 1.7 MAX 43.3 DEG.C

MANUFACTURER NUOVO PIGNONE
 SUPPLIER NUOVO PIGNONE
 MODEL 1100
 QUANTITY
 ORDER NUMBER 140600 BS 3136

MESSAGES

CALCULATION IN ACCORDANCE WITH
 "MASONELLAN HANDBOOK FOR CONTROL VALVE SIZING"
 FLUID - LIQUID
 MAXIMUM FLOW 70040.94 KG/H
 MINIMUM FLOW 28071.00 KG/H
 ABSOLUTE PRESSURES
 UPSTREAM (AT MAX.FLOW) 2.70000 KG/CM2
 UPSTREAM (AT MIN.FLOW) 3.10000 KG/CM2
 DOWNSTREAM (AT MAX.FLOW) 1.80000 KG/CM2
 DOWNSTREAM (AT MIN.FLOW) 1.30000 KG/CM2
 OPERATING TEMPERATURE 183.00 DEG.C
 DENSITY AT OPERATING CONDIT. 0.97900 KG/DM3
 MOLECULAR WEIGHT 96.07999
 COMPR. FACTOR AT OPER. COND. 1.00000
 VAPOR PRESSURE OF LIQUID 1.80000 KG/CM2
 CRITICAL PRESSURE 56.09999 KG/CM2
 LIQUID AND ITS VAPORS
 PERCENTAGE FLASH 6.00000
 OP ON CLOSE VALVE 3.30000 KG/CM2
 *CV MAX.CALCULATED 185.15
 *CV MAX.CALCULATED OVERSIZED 231.44
 *OVERSIZING FACTOR OF CV 1.25000
 *CV SELECTED 280.00
 *CV MIN.CALCULATED 59.23752
 *CF 0.80000
 *CFR 0.80000
 *H 1.00000
 *RANGEABILITY 4.72673
 *FLUID VELOCITY 1.06520 M/SEC
 (PIPE THK = 7.11 MM)

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 17 Rev. 2

REV. 2 VERIFIED BY *Pignone* DATE 24/1/79

SNAM-PROGETTI - PROGRAMMA ** C C V A L	CUSTOMER	SCCP	JOB	140600 PLANT	9
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	9-SA- 50928 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	FURFURAL EXTRACTION	SH. 42 OF	CATE 26/03/79	1

TAG=9-711C23VA-IDENT.N. 42-PLANT= 9 -SERVICE=T.W. FROM 921-C -CCDES(PIPE=11C/ -JOB 0062)-PIPE DIAM 12.000"

1 VALVE TYPE	1 BUTTERFLY	1	CALCULATION IN ACCORDANCE WITH	
1 SEAT TYPE	1 SINGLE SEAT WITH NORMAL TRIM	1	1 MASONEILAN HANDBOOK FOR CONTRL VALVE SIZING	
1 NOMINAL DIAMETER	1 10"	1		
1 RATING	1 150 ANSI	1	FLUID - LIQUID	
1 BODY MATERIAL	1 A 216 WCB	1	MAXIMUM FLOW 550000.00 KG/H	
1 TRIM MATERIAL	1 DISC AISI 316 - SHAFT 2 PIN 17-4-PH	1	ABSOLUTE PRESSURES	
1 BONNET	1 STANDARD	1	UPSTREAM (AT MAX.FLOW) 3.40000 KG/CM ²	
1 PACKING	1 TEFLON	1	DOWNSTREAM (AT MAX.FLOW) 3.10000 KG/CM ²	
1 LUBRICATOR MATERIAL		1	OPERATING TEMPERATURE 60.00000 DEG.C	
1 SOFT SEAT		1	DENSITY AT OPERATING CONDIT. 0.98300 KG/DM ³	
1 PLUG	1 BUTTERFLY	1	VAPOR PRESSURE OF LIQUID 0.20000 KG/CM ²	
1 CHARACTERISTIC	1 FISHTAIL	1	CRITICAL PRESSURE 225.60 KG/CM ²	
1 CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI B46.1	1	DP ON CLOSE VALVE 7.30000 KG/CM ²	
1 PIP FOR MOTOR SIZE	1 7.300 KG/CM ²	1		
1 PROCESS FLUID ACTION	1 OPEN	1	*CV MAX.CALCULATED 1251.26	
1 ON POWER FAILURE	1 OPEN	1	*CV MAX.CALCULATED OVERSIZED 1564.07	
1 HANOWHEEL	1 REQUIRED	1	*OVERSIZING FACTOR OF CV 1.25000	
1 SPECIAL SERVICE		1	*CV SELECTED 90° OPENING 4010.00	
1 POSITIONER	1 WITH BY-PASS AND GAUGES (PARALLEL RANGE)	1	*CF 0.65000	
1 LIMIT SWITCH	1 NOT REQUIRED	1	*CFR 0.60000	
1 SPRING RANGE	1 3 - 15 PSIG	1	*R 0.96552	
1 INPT RANGE	1 3 - 15 PSIG	1	*FLUID VELOCITY 2.97196 M/SEC	
1 JACKET		1	(PIPE THK = 6.35 MM)	
1 ACCESSORIES	1 FILTER REGLL. WITH GAUGES (SET AT 20 PSIG) / LIMIT STOP	1		
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C	1		

1 MANUFACTURER	1 FISHER CONTROLS SPA
1 SUPPLIER	1 FISHER CONTROLS SPA
1 MODEL	1 656-7600 FISHTAIL CLASS 2
1 QUANTITY	1
1 ORDER NUMBER	1 140600-83-308

1 MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 3 VERIFIED BY *Phan* DATE 15/2/80

SNAM-PROGETTI - PROGRAMME ** C O V A L **

INSTRUMENTS REQUISITION

CONTROL VALVES AND REGULATORS

CUSTOMER SSCP

LOCATION BASRAH REFINERY - IRAQ

PLANT MEK DOWAXING

JCB 14C600 PLANT 10

REQ. NO. 10-SA- 51028 REV. 1

SH. 1230F DATE 26/03/79

TAC=10-IFRC-2V-IDENT.N. 123 PLANT= 10 -SERVICE=CHARGE TO 1001-CA -CODES(PIPE=138/-JCB 0062)-PIPE DIAM 4.000"

1 VALVE TYPE	1 REVERSIBLE GLOBE
1 SEAT TYPE	1 DOUBLE SEAT WITH REDUCED TRIM
1 NOMINAL DIAMETER	1 3"
1 RATING	1 300 ANSI
1 BODY MATERIAL	1 A 216 WCB
1 TRIM MATERIAL	1 AISI 316 WITH STELLITE
1 BONNET	1 STANDARD
1 PACKING	1 TEFLON
1 LUBRICATOR MATERIAL	1
1 SCFT SEAT	1
1 FLUID	1 CONTINGUED
1 CHARACTERISTIC	1 EQUAL PERCENTAGE
1 CONNECTIONS	1 FLANGED 1 RF 125 RMS 3 PER ANSI B46.1
1 OP. FOR MOTOR SIZE	1 47.800 KG/CM2
1 PROCESS FLUID ACTION	1 OPEN
1 FK POWER FAILURE	1 CLOSE
1 HANDWHEEL	1 NOT REQUIRED
1 SPECIAL SERVICE	1
1 POSITIONER	1 WITH BY-PASS AND GAUGES
1 LIMIT SWITCH	1 NOT REQUIRED
1 SPRING RANGE	1 3 - 15 PSIG
1 INPUT RANGE	1 3 - 15 PSIG
1 JACKET	1
1 ACCESSORIES	1 ~~FILTER REG. WITH GAUGES~~
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C
1 MANUFACTURER	1 NUOVO PIGNONE
1 SUPPLIER	1 NUOVO PIGNONE
1 MODEL	1 1100
1 QUANTITY	1
1 ORDER NUMBER	1 140600-BS-3193

MESSAGES

CALCULATION IN ACCORDANCE WITH
"MASCHELAN HANDBOOK FOR CONTROL VALVE SIZING"

FLUID - LIQUID

1 MAXIMUM FLOW	44759.99 KG/H
1 MINIMUM FLOW	11433.99 KG/H
1 ABSOLUTE PRESSURES	
1 UPSTREAM (AT MAX. FLOW)	39.29999 KG/CM2
1 UPSTREAM (AT MIN. FLOW)	44.39999 KG/CM2
1 DOWNSTREAM (AT MAX. FLOW)	26.00000 KG/CM2
1 DOWNSTREAM (AT MIN. FLOW)	6.90000 KG/CM2
1 OPERATING TEMPERATURE	71.00000 DEG.C
1 DENSITY AT OPERATING CONDIT.	0.80000 KG/DH3
1 VAPOR PRESSURE OF LIQUID	0.50000 KG/CM2
1 CRITICAL PRESSURE	36.00000 KG/CM2
1 DP ON CLOSE VALVE	47.79999 KG/CM2

1 *CV MAX. CALCULATED	16.11096
1 *CV MAX. CALCULATED OVERSIZED	20.13972
1 *OVERSIZING FACTOR OF CV	1.25000
1 *CV SELECTED	30.00000
1 *CV MIN. CALCULATED	2.81982
1 *CF	0.80000
1 *LFR	0.80000
1 *R	0.99783
1 *RANGEABILITY	10.63897
1 *FLUID VELOCITY	3.34777 M/SEC
(PIPE THK = 6.02 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1/7 Rev. 0

REV. 1 VERIFIED BY *Indu* DATE 3/4/79

1	SNAM-PROGETTI - PROGRAMME ** C O V A L **	1	CUSTOMER	SCOP	1	JOB	14C6C0	PLANT	10
1	INSTRUMENTS REQUISITION	1	LOCATION	BASRAH REFINERY - IRAQ	1	REQ. NO.	10-SA- 51028	REV.	1
1	CONTROL VALVES AND REGULATORS	1	PLANT	MEK DEWAXING	1	SH.	3 OF	DATE	26/03/79

1 TAG=10-IFRC-3V-1CEN1.N. 3-PLANT# 10 -SERVICE=CHARGE TO 1001-CC -CODES(PIPE=138/ -JOB 00621-PIPE DIAM 4.000"

1	VALVE TYPE	1	REVERSIBLE GLOBE	1	CALCULATION IN ACCORDANCE WITH				1
1	SEAT TYPE	1	DOUBLE SEAT WITH REDUCED TRIM	1	'MASCONEILAN HANDBOOK FOR CONTROL VALVE SIZING'				1
1	NOMINAL DIAMETER	1	3"	1	FLUID - LIQUID				1
1	RATING	1	300 ANSI	1	MAXIMUM FLOW				44759.99 KG/H
1	SECCY MATERIAL	1	A 216 WCB	1	MINIMUM FLOW				11433.99 KG/H
1	TRIM MATERIAL	1	AISI 316 WITH STELLITE	1	ABSOLUTE PRESSURES				1
1	CONNKT	1	STANDARD	1	UPSTREAM AT MAX. FLOW				39.29599 KG/CM2
1	PACKING	1	TEFLON	1	UPSTREAM AT MIN. FLOW				44.39599 KG/CM2
1	LUBRIFICATOR MATERIAL	1		1	DOWNSTREAM AT MAX. FLOW				26.00000 KG/CM2
1	SOFT SEAT	1		1	DOWNSTREAM AT MIN. FLOW				6.90000 KG/CM2
1	PLUG	1	CONTURED	1	OPERATING TEMPERATURE				71.00000 DEG.C
1	CHARACTERISTIC	1	EQUAL PERCENTAGE	1	DENSITY AT OPERATING CONDIT.				0.80000 KG/DM3
1	CONNECTIONS	1	FLANGED (RF 125 RMS) PER ANSI B46.1	1	VAPOR PRESSURE OF LIQUID				0.50000 KG/CM2
1	DP FOR MOTOR SIZE	1	47.800 KG/CM2	1	CRITICAL PRESSURE				36.00000 KG/CM2
1	PROCESS FLUID ACTION	1	OPEN	1	DP ON CLOSE VALVE				47.79599 KG/CM2
1	ON POWER FAILURE	1	CLOSE	1	*CV MAX.CALCULATED				16.11096
1	HANDWHEEL	1	NOT REQUIRED	1	*CV MAX.CALCULATED OVERSIZED				20.13672
1	SPECIAL SERVICE	1		1	*OVERSIZING FACTOR OF CV				1.25000
1	POSITIONER	1	WITH BY-PASS AND GAUGES	1	*CV SELECTED				30.00000
1	LIMIT SWITCH	1	NOT REQUIRED	1	*CV MIN.CALCULATED				2.81982
1	SPRING RANGE	1	3 - 15 PSIG	1	*CF				0.80000
1	INPUT RANGE	1	3 - 15 PSIG	1	*CFR				0.80000
1	JACKET	1		1	*R				0.99783
1	ACCESSORIES	1	~~FILTER REGUL. WITH GAUGES~~	1	*RANGEABILITY				10.63897
1	AMBIENT TEMPERATURE	1	MIN 1.7 MAX 43.3 DEG.C	1	*FLUID VELOCITY				3.34777 M/SEC
1		1		1	(PIPE THK = 6.02 MM)				1
1	MANUFACTURER	1	NUOVO PIGNONE	1					1
1	SUPPLIER	1	NUOVO PIGNONE	1					1
1	MODEL	1	1100	1					1
1	QUANTITY	1	1	1					1
1	ORDER NUMBER	1	140600 - BS - 3193	1					1

1 MESSAGES

1 * DATA CALCULATED OR SELECTED BY PROGRAMME

1 FOR GENERAL CHARACTERISTICS SEE

1 SPEC. N. 000-SA-E-50028 Sh. 1 of 2 Rev. 0

1 REV. 1 VERIFIED BY *Pinu* DATE 3/4/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCCP	JOB	14C6CC PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEWAXING	SH.	4 OF	DATE 26/03/79

TAG=10-1FRC-4V-ICENT.N. 4-PLANT= 10 -SERVICE=WAXY SCL.TC1007-C -CODES(PIPE=15R/ -JOB 0062)-PIPE DIAM 4.000"

VALVE TYPE	REVERSIBLE GLOBE
SEAT TYPE	DOUBLE SEAT WITH REDUCED TRIM
NOMINAL DIAMETER	2"
RATING	600 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	AISI 316 WITH STELLITE
BEARER	STANDARD
PACKING	TEFLON
LUBRICATOR MATERIAL	
SOFT SEAT	
PLUG	CONTURED
CHARACTERISTIC	EQUAL PERCENTAGE
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1
OP FOR MOTOR SIZE	55.067 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	CLOSE
HANDWHEEL	NOT REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH ~~BY-PASS~~ AND GAUGES
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	6 - 30 PSIG
INPLT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	~~FILTER REG. WITH GAUGES~~
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1100
QUANTITY	1
ORDER NUMBER	140600-BS-3193

MESSAGES

CALCULATION IN ACCORDANCE WITH	
MASCONEILAN HANDBOOK FOR CONTROL VALVE SIZING	
FLUID - LIQUID	
MAXIMUM FLOW	26923.99 KG/H
MINIMUM FLOW	4012.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM(AT MAX.FLOW)	48.00000 KG/CM2
UPSTREAM(AT MIN.FLOW)	56.09999 KG/CM2
DOWNSTREAM(AT MAX.FLOW)	44.70000 KG/CM2
DOWNSTREAM(AT MIN.FLOW)	45.20000 KG/CM2
OPERATING TEMPERATURE	60.00000 DEG.C
DENSITY AT OPERATING CONDIT.	0.79500 KG/DM3
VAPOR PRESSURE OF LIQUID	0.35000 KG/CM2
CRITICAL PRESSURE	41.00000 KG/CM2
OP ON CLOSE VALVE	20.00000 KG/CM2
*CV MAX.CALCULATED	19.75391
*CV MAX.CALCULATED OVERSIZED	24.69238
*OVERSIZING FACTOR OF CV	1.25000
*CV SELECTED	30.00000
*CV MIN.CALCULATED	1.61964
*CF	0.80000
*CFR	0.80000
*H	0.98583
*RANGEABILITY	18.52263
*FLUID VELOCITY	4.57000 M/SEC
(PIPE THK = 6.02 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 SUB-Y. Rev. 0

REV. 1 VERIFIED BY *lian* DATE 9/4/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600	PLANT	10
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028	REV.	1
CONTROL VALVES AND REGULATORS		PLANT	MEK DOWAXING	SH.	7 OF	DATE	26/03/79

62/109

TAG=101FRC-TV - IDENT.N. 7-PLANT= 10 -SERVICE=WFO MIX TO 1001-CD -CODES(PIPE=138/ -JOB 0062)-PIPE DIAM 4.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	GLOBE SEAT WITH REDUCED TRIM	*MASCHEILAN HANCOCK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	3"	FLUID - LIQUID	
WAYING	300 ANSI	MAXIMUM FLOW	
BODY MATERIAL	A 216 WCB	45589.99 KG/H	
TRIM MATERIAL	AISI 316 WITH STELLITE	MINIMUM FLOW	
PACKING	EXTENSION	19515.99 KG/H	
PACKING	TEFLON	ABSOLUTE PRESSURES	
LUBRICATOR MATERIAL		UPSTREAM(AT MAX.FLOW)	
SOFT SEAT		13.00000 KG/CM2	
FLUG	CONTOURED	UPSTREAM(AT MIN.FLOW)	
CHARACTERISTIC	EQUAL PERCENTAGE	17.79999 KG/CM2	
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	DOWNSTREAM(AT MAX.FLOW)	
EP FOR PCTER SIZE	21.9CO KG/CM2	11.50000 KG/CM2	
PROCESS FLUID ACTION	OPEN	DOWNSTREAM(AT MIN.FLOW)	
ON POWER FAILURE	CLOSE	3.44000 KG/CM2	
HANDWHEEL	NOT REQUIRED	OPERATING TEMPERATURE	
SPECIAL SERVICE		-24.00000 DEG.C	
POSITIONER	WITH BY-PASS AND GAUGES	DENSITY AT OPERATING CONDT.	
LIMIT SWITCH	NOT REQUIRED	0.89100 KG/DM3	
SPRING RANGE	3 - 15 PSIG	VAPOR PRESSURE OF LIQUID	
INPLT RANGE	3 - 15 PSIG	0.01000 KG/CM2	
JACKET		CRITICAL PRESSURE	
ACCESSORIES	~~FLTER REGU. WITH GAUGES~~	36.00000 KG/CM2	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.30DEG.C	EP ON CLOSE VALVE	
MANUFACTURER	NUOVO PIGNONE	21.89999 KG/CM2	
SUPPLIER	NUOVO PIGNONE	*CV MAX.CALCULATED	
MODEL	1100	46.30069	
QUANTITY	1	*CV MAX.CALCULATED OVERSIZED	
ORDER NUMBER	140600-BS-3793	57.87587	
MESSAGES		*EVERSIZING FACTOR OF CV	
		1.25000	
		*CV SELECTED	
		80.00000	
		*CV MIN.CALCULATED	
		7.17799	
		*CF	
		0.80000	
		*CFR	
		0.80000	
		*R	
		0.99783	
		*RANGEABILITY	
		11.14518	
		*FLUID VELOCITY	
		3.06159 M/SEC	
		(PIPE THK = 6.02 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sb. 1-7 Rev. 0

REV. / VERIFIED BY *Puosi* DATE 9/4/79

SNAP-PROGETTI - PROGRAMMA ** C O V A L **	CUSTOMER	SCOP	JOB	14C6CO PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	1C-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEWAXING	SH. 60 OF	DATE 26/03/79	

TAG=1C-2LC-2V - IDENT.N. 60-PLANT= 10 -SERVICE=PROPANE TO 1002-CB -CCODES(PIPE=23G/ -JOB 0062)-PIPE DIAM 2.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASCHELAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	1 1/2"	FLUID - LIQUID	
RATING	600 ANSI		
BODY MATERIAL	A 216 WCB	MAXIMUM FLOW	4464.00 KG/H
TRIM MATERIAL	13-8-PH	MINIMUM FLOW	720.00 KG/H
BOUNNET	EXTENSION	ABSELE PRESSURES	
PACKING	TEFLON	UPSTREAM (AT MAX.FLOW)	6.10C00 KG/CM2
LUBRICATOR MATERIAL		UPSTREAM (AT MIN.FLOW)	6.50C00 KG/CM2
SOFT SEAT	MAX LEAKAGE 0.005% OF CV MAX	DOWNSTREAM (AT MAX.FLOW)	2.36000 KG/CM2
PLUG	CONTURED	DOWNSTREAM (AT MIN.FLOW)	2.36000 KG/CM2
CHARACTERISTIC	EQUAL PERCENTAGE	OPERATING TEMPERATURE	10.00C00 DEG.C /-13
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	DENSITY AT OPERATING CONDIT.	0.51800 KG/DM3
DP FOR MOTOR SIZE	15.600 KG/CM2	MOLECULAR WEIGHT	43.78C00
PROCESS FLUID ACTION	OPEN	COMPR. FACTOR AT OPER. COND.	0.95C00
ON POWER FAILURE	CLOSE	VAPOR PRESSURE OF LIQUID	6.10C00 KG/CM2
HANDHEEL	NOT REQUIRED	CRITICAL PRESSURE	42.00C00 KG/CM2
SPECIAL SERVICE		LIQUID AND ITS VAPORS	
POSITIONER	WITH ~~BY-PASS~~ AND GAUGES	PERCENTAGE FLASH	19.00C00
LIMIT SWITCH	NOT REQUIRED	DP ON CLOSE VALVE	19.59999 KG/CM2
SPRING RANGE	15 - 30 PSIG	*CV MAX.CALCULATED	14.07231
INPLT RANGE	3 - 15 PSIG	*CV MAX.CALCULATED OVERSIZED	17.59039
JACKET		*OVERSIZING FACTOR OF CV	1.25C00
ACCESSORIES	~~FILTER REGCL. WITH GAUGES~~	*CV SELECTED	23.00C00
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	*CV MIN.CALCULATED	1.59600
MANUFACTURER	NUOVO PIGNONE	*CF	0.90C00
SUPPLIER	NUOVO PIGNONE	*CFR	0.86C00
MODEL	1000	*R	0.99046
QUANTITY	1	*RANGEABILITY	11.52306
ORDER NUMBER	140600-85-3193	*FLUID VELOCITY	1.85896 M/SEC

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMMA

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1:7 Rev. 0

REV. / VERIFIED BY *fuor* DATE 9/4/73

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA-	51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEWAXING	SH.	61 OF	DATE 26/03/79	1

TAG=10-2LC-3V -ICENT.N. 61-PLANT= 10 -SERVICE=PROPANE TO 1003-CA -CCDES(PIPE=13G/-JOB 0062)-PIPE DIAM 2.000"

VALVE TYPE	REVERSIBLE CLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	'MASCONEILAN HANDBOOK FOR CONTROL VALVE SIZING'	
NOMINAL DIAMETER	1 1/2"		
RATING	600 ANSI	FLUID - LIQUID	
PCCY MATERIAL	AISI 316		
THIN MATERIAL	12-4-PH		
BONNET	EXTENSION	MAXIMUM FLOW	4200.00 KG/H
PACKING	TEFLON	MINIMUM FLOW	930.00 KG/H
LUBRICATOR MATERIAL		ABSOLUTE PRESSURES	
SOFT SEAT	MAX LEAKAGE 0.005% OF CV MAX	UPSTREAM (AT MAX. FLOW)	5.60000 KG/CM ²
PLUG	CONTOURED	UPSTREAM (AT MIN. FLOW)	6.45000 KG/CM ²
CHARACTERISTIC	EQUAL PERCENTAGE	DOWNSTREAM (AT MAX. FLOW)	1.42000 KG/CM ²
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	DOWNSTREAM (AT MIN. FLOW)	1.42000 KG/CM ²
CV FOR MOTOR SIZE	20.600 KG/CM ²	OPERATING TEMPERATURE	-10.00000 DEG.C /-32
PROCESS FLUID ACTION	OPEN	DENSITY AT OPERATING CONDIT.	0.54600 KG/DH ³
ON POWER FAILURE	CLOSE	MOLECULAR WEIGHT	43.62000
HANDWHEEL	NOT REQUIRED	COMPR. FACTOR AT OPER. COND.	0.97000
SPECIAL SERVICE		VAPOR PRESSURE OF LIQUID	5.60000 KG/CM ²
POSITIONER	WITH ~~BY PASS~~ AND GAUGES	CRITICAL PRESSURE	42.00000 KG/CM ²
LIMIT SWITCH	NOT REQUIRED	LIQUID AND ITS VAPORS	
SPRING RANGE	15 - 30 PSIG	PERCENTAGE FLASH	13.00000
INPLT RANGE	3 - 15 PSIG	DP ON CLOSE VALVE	20.59999 KG/CM ²
JACKET		CV MAX. CALCULATED	11.93282
ACCESSORIES	~~FILTER REGUL. WITH GAUGES~~	CV MAX. CALCULATED OVERSIZED	14.91603
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	OVERSIZING FACTOR OF CV	1.25000
MANUFACTURER	NUOVO PIGNONE	CV SELECTED	23.00000
SUPPLIER	NUOVO PIGNONE	CV MIN. CALCULATED	2.00158
MODEL	1000	CF	0.90000
QUANTITY	1	CFR	0.86000
ORDER NUMBER	140600-BS-3193	H	0.99046
		RANGEABILITY	11.49094
		FLUID VELOCITY	1.65933 M/SEC
		(PIPE THK = 3.91 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 1 VERIFIED BY *lian* DATE 9/4/79

SNAP-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600	PLANT	10
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028	REV.	1
CONTROL VALVES AND REGULATORS		PLANT	MEK DEWAXING	SH.	62 OF	DATE	26/03/79

TAG=10-2LC-4V - IDENT.N. 62-PLANT#		10	SERVICE=PROPANE TO 1003-CB - CODES(PIPE=130/ -JOB C062)-PIPE DIAM	2.000"
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VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	"MASCHEILLAN HANDBOOK FOR CONTROL VALVE SIZING"	
NOMINAL DIAMETER	1 1/2"	FLUID - LIQUID	
RATING	600 ANSI	MAXIMUM FLOW	4200.00 KG/H
BODY MATERIAL	AISI 316	MINIMUM FLOW	930.00 KG/H
TRIM MATERIAL	17-4-PH	ABSOLUTE PRESSURES	
BOUNNET	EXTENSION	UPSTREAM (AT MAX.FLOW)	5.60000 KG/CM2
PACKING	TEFLON	UPSTREAM (AT MIN.FLOW)	6.45000 KG/CM2
LUBRICATOR MATERIAL		DOWNSTREAM (AT MAX.FLOW)	1.42000 KG/CM2
SOFT SEAT	MAX LEAKAGE 0,005 % OF CV MAX	DOWNSTREAM (AT MIN.FLOW)	1.42000 KG/CM2
PLUG	CONTURED	OPERATING TEMPERATURE	-10.00000 DEG.C /-32
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	0.54600 KG/DH3
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	MOLECULAR WEIGHT	44.02000
CODE FOR MOTOR SIZE	20.600 KG/CM2	COMPR. FACTOR AT OPER. COND.	0.97000
PROCESS FLUID ACTION	OPEN	VAPOR PRESSURE OF LIQUID	5.60000 KG/CM2
ON POWER FAILURE	CLOSE	CRITICAL PRESSURE	42.00000 KG/CM2
HANDWHEEL	NOT REQUIRED	LIQUID AND ITS VAPORS	
SPECIAL SERVICE		PERCENTAGE FLASH	13.00000
POSITIONER	WITH BY-PASS AND GAUGES	OP ON CLOSE VALVE	20.59999 KG/CM2
LIMIT SWITCH	NOT REQUIRED		
SPRING RANGE	15 - 30 PSIG	*CV MAX.CALCULATED	11.93282
INPUT RANGE	3 - 15 PSIG	*CV MAX.CALCULATED OVERSIZED	14.91603
JACKET		*OVERSIZING FACTOR OF CV	1.25000
ACCESSORIES	~~FILTER REGUL. WITH GAUGES~~	*CV SELECTED	23.00000
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	*CV MIN.CALCULATED	2.00158
MANUFACTURER	NUOVO PIGNONE	*CF	0.90000
SUPPLIER	NUOVO PIGNONE	*CFR	0.86000
MODEL	1000	*R	0.99046
QUANTITY	1	*RANGEABILITY	11.49094
ORDER NUMBER	140600-BS-3193	*FLUID VELOCITY	1.65933 M/SEC
MESSAGES		(PIPE THK = 3.91 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE	REV. /	VERIFIED BY	DATE
SPEC. N. 000-SA-E 50028 Sh. 177 Rev. 0		<i>Puori</i>	3/4/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JCB	140600 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEXAXING	FG.	66 OF	DATE 26/05/79

TAG-105LRC17VA-IDENT.N. 66-PLANT* 10 -SERVICE-CHARGE MIX 1001-FTA -CODES(PIPE=110/ -JOB 0062)-PIPE DIAM 6.000"

VALVE TYPE	BUTTERFLY	CALCULATION IN ACCORDANCE WITH	
*SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
*NOMINAL DIAMETER	4"		
*RATING	300 ANSI	FLUID - LIQUID	
*BODY MATERIAL	A 216 WCB		
*TRIM MATERIAL	DISC AISI 316 - SHAFT & PIN 17-4-PH	MAXIMUM FLOW	50332.00 KG/H
*BONNET	STANDARD	MINIMUM FLOW	16124.99 KG/H
*PACKING	TEFLON	ABSOLUTE PRESSURES	
LUBRICATOR MATERIAL		UPSTREAM(AT MAX.FLOW)	1.15000 KG/CM2
SOFT SEAT		UPSTREAM(AT MIN.FLOW)	1.17000 KG/CM2
*PLUG	BUTTERFLY	DOWNSTREAM(AT MAX.FLOW)	1.05000 KG/CM2
*CHARACTERISTIC	FISHTAIL	DOWNSTREAM(AT MIN.FLOW)	1.05000 KG/CM2
*CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	OPERATING TEMPERATURE	-26.00000 DEG.C
*OP FOR MOTOR SIZE	3.500 KG/CM2	DENSITY AT OPERATING CONDIT.	0.88800 KG/DN3
*PROCESS FLUID ACTION *	OPEN	VAPOR PRESSURE OF LIQUID	0.01000 KG/CM2
ON POWER FAILURE	CLOSE	CRITICAL PRESSURE	36.00000 KG/CM2
*HANDWHEEL	REQUIRED	OP ON CLOSE VALVE	3.50000 KG/CM2
*SPECIAL SERVICE			
*POSITIONER	WITH BY-PASS AND GAUGES (PARALLEL RANGE)	*CV MAX.CALCULATED	224.63
*LIMIT SWITCH	NOT REQUIRED	*CV MAX.CALCULATED OVERSIZED	280.79
*SPRING RANGE	3-15 PSIG	*OVERSIZING FACTOR OF CV	1.25000
*INPUT RANGE	3-15 PSIG	*CV SELECTED 90° OPENING	392.00
*JACKET		*CV MIN.CALCULATED	65.69635
*ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)	*CF	0.65000
*AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*CFR	0.60000
		*R	0.88098
MANUFACTURER	FISHER CONTROLS S/A	*RANGEABILITY	5.96684
SUPPLIER	FISHER CONTROLS S/A	*FLUID VELOCITY	2.01233 M/SEC
MODEL	656-7600 FISHTAIL CLASS 2	(PIPE THK = 7.11 MM)	
QUANTITY	1		
ORDER NUMBER	140600-BS-308		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 2 | VERIFIED BY *Pisan* | DATE 15/2/80

229

E=118/ -JOB 00621-PIPE DIAM 6.000"

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1      CALCULATION IN ACCORDANCE WITH
1      *MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*
1
1      FLUID - GAS / LIQUID
1
1      MAXIMUM FLOW      1670.00/49723.00 KG/H
1      MINIMUM FLOW      1250.00/15225.99 KG/H
1      ABSOLUTE PRESSURES
1          UPSTREAM(AT MAX.FLOW)      0.35000 KG/CM2
1          UPSTREAM(AT MIN.FLOW)      0.35000 KG/CM2
1          DOWNSTREAM(AT MAX.FLOW)    0.32000 KG/CM2
1          DOWNSTREAM(AT MIN.FLOW)    0.31000 KG/CM2
1      OPERATING TEMPERATURE      -24.00000 DEG.C
1      DENSITY AT OPERATING CONDIT. 0.88800 KG/DM3
1      VAPOR PRESSURE OF LIQUID    0.01000 KG/CM2
1      CRITICAL PRESSURE          36.00000 KG/CM2
1      DP ON CLOSE VALVE          2.00000 KG/CM2
1      MOLECULAR WEIGHT          31.0488
1      COMP. FACTOR AT OPER COND.  1.00000
1      *CV MAX.CALCULATED          54324/356.90
1      *CV MAX.CALCULATED OVERSIZED 679.05/446.13
1      *OVERSIZING FACTOR OF CV    1.25000
1      *CV SELECTED 90° OPENING    -- 7410.00
1      *CV MIN.CALCULATED          362.62/94.64688
1      *CF                          0.65000
1      *CFR                         0.60000
1      *R                          1.00000
1      *RANGEABILITY               3.08353
1      *FLUID VELOCITY              66.95984 M/SEC
1      (PIPE THK = 7.11 MM)

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1 *RANGEABILITY                      3.08353
1 *FLUID VELOCITY                    66.95984 M/SEC
1 (PIPE THK = 7.11 MM)

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I * DATA CALCULATED OR SELECTED BY PROGRAMME
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I
I REV. 2 I VERIFIED BY *Puan* I DATE 15/6/80
I

1 SNAM-PROGETTI - PROGRAMME ** C O V A L **	1 CUSTOMER	SCOP	1 JCB	140600 PLANT	10
1 INSTRUMENTS REQUISITION	1 LOCATION	BASRAM REFINERY - IRAQ	1 REQ. NO.	10-SA- 51028 REV.	1
1 CONTROL VALVES AND REGULATORS	1 PLANT	HEK DEWAXING	1 PG. 69 OF	CATE 26/03/83	1

1 TAG=10SLRC19VA-IDENT.N. 69-PLANT= 10 -SERVICE=CHARGE MIX 1001FTB -CODES(PIPE=11B/ -JOB 00621-PIPE DIAM 6.000"

1 VALVE TYPE	1 BUTTERFLY
1 SEAT TYPE	1 SINGLE SEAT WITH NORMAL TRIM
1 NOMINAL DIAMETER	1 4"
1 RATING	1 300 ANSI
1 BODY MATERIAL	1 A 216 WCB
1 TRIM MATERIAL	1 DISC AISI 316 - SHAFT 2 PIN IT-4-PH
1 BONNET	1 STANDARD
1 PACKING	1 TEFLON
1 LUBRICATOR MATERIAL	1
1 SOFT SEAT	1
1 PLUG	1 BUTTERFLY
1 CHARACTERISTIC	1 FISHTAIL
1 CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI B46.1
1 DP FOR MOTOR SIZE	1 3.500 KG/CM2
1 PROCESS FLUID ACTION	1 OPEN
1 ON POWER FAILURE	1 CLOSE
1 HANDWHEEL	1 REQUIRED
1 SPECIAL SERVICE	1
1 POSITIONER	1 WITH BY-PASS AND GAUGES (PARALLEL RANGE
1 LIMIT SWITCH	1 NOT REQUIRED
1 SPRING RANGE	1 3-15 PSIG
1 INPUT RANGE	1 3-15 PSIG
1 JACKET	1
1 ACCESSORIES	1 FILTER REGUL. WITH GAUGES
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C
1 MANUFACTURER	1 FISHER CONTROLS S/A
1 SUPPLIER	1 FISHER CONTROLS S/A
1 MODEL	1 656-7600 FISHTAIL CLASS 2
1 QUANTITY	1
1 ORDER NUMBER	1 140600-05-308

1 MESSAGES

1 CALCULATION IN ACCORDANCE WITH	
1 'MASONETLAN HANDBOOK FOR CONTROL VALVE SIZING'	
1 FLUID - LIQUID	
1 MAXIMUM FLOW	50332.00 KG/H
1 MINIMUM FLOW	16124.99 KG/H
1 ABSOLUTE PRESSURES	
1 UPSTREAM (AT MAX.FLOW)	1.15000 KG/CM2
1 UPSTREAM (AT MIN.FLOW)	1.17000 KG/CM2
1 DOWNSTREAM (AT MAX.FLOW)	1.05000 KG/CM2
1 DOWNSTREAM (AT MIN.FLOW)	1.05000 KG/CM2
1 OPERATING TEMPERATURE	-26.00000 DEG.C
1 DENSITY AT OPERATING CONDIT.	0.88800 KG/CM3
1 VAPOR PRESSURE OF LIQUID	0.01000 KG/CM2
1 CRITICAL PRESSURE	36.00000 KG/CM2
1 DP ON CLOSE VALVE	3.50000 KG/CM2
1 *CV MAX.CALCULATED	224.63
1 *CV MAX.CALCULATED OVERSIZED	280.79
1 *OVERSIZING FACTOR OF CV	1.25000
1 *CV SELECTED 30° OPENING	392.00
1 *CV MIN.CALCULATED	65.69635
1 *CF	0.65000
1 *CFR	0.60000
1 *R	0.88088
1 *RANGEABILITY	5.96684
1 *FLUID VELOCITY	2.01733 M/SEC
(PIPE THK = 7.11 MM)	

1 * DATA CALCULATED OR SELECTED BY PROGRAMME

1 FOR GENERAL CHARACTERISTICS SEE

1 SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

1 REV. 2 1 VERIFIED BY Juan 1 CATE 15/2/80

I JOB 140600 PLANT 10

1
1 REQ. NO. 10-SA- 51028 REV. 1

1 FG. 72 OF - DATE 26/03/79

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I      CALCULATION IN ACCORDANCE WITH
I      *MASON EILAN HANDBOOK FOR CONTROL VALVE SIZING*
I
I      FLUID - LIQUID
I
I      MAXIMUM FLOW                50332.00 KG/H
I      MINIMUM FLOW               18124.99 KG/H
I      ABSOLUTE PRESSURES
I          UPSTREAM(AT MAX.FLOW)    1.15000 KG/CM2
I          UPSTREAM(AT MIN.FLOW)     1.17000 KG/CM2
I          DOWNSTREAM(AT MAX.FLOW)   1.05000 KG/CM2
I          DOWNSTREAM(AT MIN.FLOW)   1.05000 KG/CM2
I      OPERATING TEMPERATURE       -26.00000 DEG.C
I      DENSITY AT OPERATING CONDIT. 0.88800 KG/DH3
I      VAPOR PRESSURE OF LIQUID     0.01000 KG/CM2
I      CRITICAL PRESSURE            36.00000 KG/CM2
I      DP ON CLOSE VALVE           3.50000 KG/CM2
I
I      *CV MAX.CALCULATED             224.63
I      *CV MAX.CALCULATED OVERSIZED   280.79
I      *OVERSIZING FACTOR OF CV        1.25000
I      *CV SELECTED 50% OPENING       392.00
I      *CV MIN.CALCULATED              65.69635
I      *CF                             0.65000
I      *CFR                            0.60000
I      *R                              0.88088
I      *RANGEABILITY                   5.84689
I      *FLUID VELOCITY                 2.01233 M/SEC
I      (PIPE THK = 7.11 MM)
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* DATA CALCULATED OR SELECTED BY PROGRAMME

SPEC. N. 000-SA-E-50028 Sh. 1:7 Rev. 0

REV. 2 VERIFIED BY *lian* DATE 15/2/00

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEMAXING	FG. 73 OF	DATE 26/03/79	

TAG=105LRC21V8-IDENT.N.273-PLANT= 10 -SERVICE=WFO FROM 1001-FT-C -CODES(PIPE=11R/ -JOB 00621-PIPE DIAM 6.000**

1 VALVE TYPE	1 BUTTERFLY
1 SEAT TYPE	1 SINGLE SEAT WITH NORMAL TRIM
1 NOMINAL DIAMETER	1 6"
1 RATING	1 300 ANSI
1 BODY MATERIAL	1 A 216 WCB
1 TRIM MATERIAL	1 DISC AISI 316 - SHAFT & PIN 17-4 PH
1 BONNET	1 STANDARD
1 PACKING	1 FOR VACUUM
1 LUBRICATOR MATERIAL	
1 SOFT SEAT	
1 PLUG	1 BUTTERFLY
1 CHARACTERISTIC	1 FISHTAIL
1 CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI B46.1
1 DP FOR MOTOR SIZE	1 2.000 KG/CM2
1 PROCESS FLUID ACTION	1 OPEN
1 ON POWER FAILURE	1 OPEN
1 HANDWHEEL	1 REQUIRED
1 SPECIAL SERVICE	
1 POSITIONER	1 WITH BY-PASS AND GAUGES (PARALLEL RANGE)
1 LIMIT SWITCH	1 NOT REQUIRED
1 SPRING RANGE	1 3-15 PSIG
1 INPUT RANGE	1 3-15 PSIG
1 JACKET	
1 ACCESSORIES	1 FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C
1 MANUFACTURER	1 FISHER CONTROLS SPA
1 SUPPLIER	1 FISHER CONTROLS SPA
1 MODEL	1 886-7600 FISHTAIL CLASS 1
1 QUANTITY	1
1 ORDER NUMBER	1 140600-B5-308

1 MESSAGES

1 CALCULATION IN ACCORDANCE WITH	
1 'MASONIELAN' HANDBOOK FOR CONTROL VALVE SIZING*	
1 FLUID - GAS - LIQUID	
1 MAXIMUM FLOW	1 1670.00-49723.00 KG/H
1 MINIMUM FLOW	1 1250.00-15225.99 KG/H
1 ABSOLUTE PRESSURES	
1 UPSTREAM(AT MAX.FLOW)	1 0.35000 KG/CM2
1 UPSTREAM(AT MIN.FLOW)	1 0.35000 KG/CM2
1 DOWNSTREAM(AT MAX.FLOW)	1 0.32000 KG/CM2
1 DOWNSTREAM(AT MIN.FLOW)	1 0.31000 KG/CM2
1 OPERATING TEMPERATURE	1 -24.00000 DEG.C
1 DENSITY AT OPERATING CONDIT.	1 0.88800 KG/DM3
1 VAPOR PRESSURE OF LIQUID	1 0.01000 KG/CM2
1 CRITICAL PRESSURE	1 36.00000 KG/CM2
1 DP ON CLOSE VALVE	1 2.00000 KG/CM2
1 MOLECULAR WEIGHT	1 31.04899
1 COMPR. FACTOR AT OPER. COND.	1 1.00000
1 *CV MAX.CALCULATED	1 543.24-356.90
1 *CV MAX.CALCULATED OVERSIZED	1 679.05-446.13
1 *OVERSIZING FACTOR OF CV	1 1.25000
1 *CV SELECTED 90° OPENING	1 1410.00
1 *CV MIN.CALCULATED	1 362.62-94.64688
1 *CF	1 0.65000
1 *CFR	1 0.60000
1 *R	1 1.00000
1 *RANGEABILITY	1 3.08353
1 *FLUID VELOCITY	1 66.95984 M/SEC
1 (PIPE THK = 7.11 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. e

1 REV. 2 1 VERIFIED BY *lian* 1 DATE 15/2/80

SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT	10
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REC. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	MEK DEWAXING	FG. 76 OF	DATE 26/03/25	1

TAG=105LRC23VB-IDENT.N.276-PLANT=		10	-SERVICE=WFO FROM 1001-FT-D -CODES(PIPE=110/ -JOB 0062)-PIPE DIAM 6.000"
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VALVE TYPE	BUTTERFLY	CALCULATION IN ACCORDANCE WITH	
*SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
*NOMINAL DIAMETER	6"		
*RATING	300 ANSI	FLUID - GAS - LIQUID	
*BODY MATERIAL	A 216 WCB	MAXIMUM FLOW 1670.00 - 49723.00 KG/H	
*TRIM MATERIAL	DISC AISI 316 - SHAFT & PIN 17-4-PH	MINIMUM FLOW 1250.00 - 15225.99 KG/H	
*GONNET	STANDARD	ABSOLUTE PRESSURES	
*PACKING	FOR VACUUM	UPSTREAM (AT MAX.FLOW) 0.35000 KG/CM2	
LUBRICATOR MATERIAL		UPSTREAM (AT MIN.FLOW) 0.35000 KG/CM2	
SOFT SEAT		DOWNSTREAM (AT MAX.FLOW) 0.32000 KG/CM2	
*PLUG	BUTTERFLY	DOWNSTREAM (AT MIN.FLOW) 0.31000 KG/CM2	
*CHARACTERISTIC	QUICK OPENING	OPERATING TEMPERATURE -24.00000 DEG.C	
*CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	DENSITY AT OPERATING CONDIT. 0.88000 KG/DM3	
*DP FOR MOTOR SIZE	2.000 KG/CM2	VAPOR PRESSURE OF LIQUID 0.01000 KG/CM2	
*PROCESS FLUID ACTION	OPEN	CRITICAL PRESSURE 36.00000 KG/CM2	
ON POWER FAILURE	OPEN	DP ON CLOSE VALVE 2.00000 KG/CM2	
*HANDWHEEL	REQUIRED		
SPECIAL SERVICE			
*POSITIONER	WITH BY-PASS AND GAUGES (PARALLEL RANGE)	*CV MAX.CALCULATED 543.24-356.90	
*LIMIT SWITCH	NOT REQUIRED	*CV MAX.CALCULATED OVERSIZED 679.05-446.13	
SPRING RANGE	3 - 15 PSIG	*OVERSIZING FACTOR OF CV 1.25000	
INPUT RANGE	3 - 15 PSIG	*CV SELECTED 90° OPENING 1410.00	
JACKET		*CV MIN.CALCULATED 362.62-94.64688	
*ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)	*CF 0.65000	
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	*CFR 0.60000	
MANUFACTURER	FISHER CONTROLS S/A	*R 1.00000	
SUPPLIER	FISHER CONTROLS S/A	*RANGEABILITY 3.08353	
MODEL	656-7600 FISHTAIL CLASS 2	*FLUID VELOCITY 64.95984 M/SEC	
QUANTITY	1	(PIPE THK = 7.11 MM)	
ORDER NUMBER	140600-BS-308		

MESSAGES	

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2	VERIFIED BY <i>lion</i>	DATE 15/2/80
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FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 1/1 Rev. 0

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEWAXING	SH.	14 OF	DATE 26/03/79

TAG=10-6FRC36V-ICENT.A. 14-PLANT= 10 -SERVICE=MEK STRIPPER CHARG -CODES(PIPE=11B/ -JOB 0062)-PIPE DIAM 1.500"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASCHELAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	1"	FLUID - LIQUID	
*RATING	600 ANSI	MAXIMUM FLOW	
*BODY MATERIAL	A 216 WCB	MINIMUM FLOW	
*TRIM MATERIAL	AISI 316	ABSOLUTE PRESSURES	
*CONNCT	STANDARD	UPSTREAM (AT MAX.FLOW)	
*PACKING	TEFLON	UPSTREAM (AT MIN.FLOW)	
LUBRICATOR MATERIAL		DOWNSTREAM (AT MAX.FLOW)	
SOFT SEAT		DOWNSTREAM (AT MIN.FLOW)	
FLUG	V PORT	OPERATING TEMPERATURE	
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	
*CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	VAPOR PRESSURE OF LIQUID	
*LP FOR MOTOR SIZE	4.100 KG/CM2	CRITICAL PRESSURE	
PROCESS FLUID ACTION	OPEN	LP ON CLOSE VALVE	
ON POWER FAILURE	CLOSE	*CV MAX.CALCULATED	
HANDWHEEL	NOT REQUIRED	*CV MAX.CALCULATED OVERSIZED	
SPECIAL SERVICE		*OVERSIZING FACTOR OF CV	
POSITIONER	WITH BY-PASS AND GAUGES	*CV SELECTED	
*LIMIT SWITCH	NOT REQUIRED	*CV MIN.CALCULATED	
*SPRING RANGE	3 - 15 PSIG	*CF	
INPUT RANGE	3 - 15 PSIG	*CFR	
JACKET		*R	
*ACCESSORIES	~~FILTER RIGID. WITH GAUGES~~	*RANCEABILITY	
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.30 DEG.C	*FLUID VELOCITY	
MANUFACTURER	NUOVO PIGNONE	(PIPE THK = 5.08 MM)	
SUPPLIER	NUOVO PIGNONE		
PCBL	1200		
QUANTITY	1		
COLOR NUMBER	140600- 85- 3193		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 1 VERIFIED BY *Pischi* DATE 3/4/79

1 SNAM-PROGETTI - PROGRAMME ** C O V A L **	1 CUSTOMER	SCCP	1 JOB	14C6C0 PLANT	10
1 INSTRUMENTS REQUISITION	1 LOCATION	BASRAH REFINERY - IRAQ	1 REQ. NO.	10-SA- 51028 REV.	1
1 CONTROL VALVES AND REGULATORS	1 PLANT	MEK DEXAXING	1 SH.	15 OF	DATE 26/03/79

1 TAG=10-6PIC37V-ICENT.N. 15-PLANT= 10 -SERVICE=STRIP.STEAMTO1010E -CODES(PIPE=13L/ -JOB C062)-PIPE DIAM 3.000"

1 VALVE TYPE	1 REVERSIBLE GLOBE
1 SEAT TYPE	1 SINGLE SEAT WITH REDUCED TRIM
1 NOMINAL DIAMETER	1 2 "
1 RATING	1 300 ANSI
1 BODY MATERIAL	1 A 216 WCB
1 TRIM MATERIAL	1 17-4- PH
1 BONNET	1 FINNED
1 PACKING	1 GRAPH. ASBESTOS
1 LUBRICATOR MATERIAL	1 BODY MATERIAL
1 SOFT SEAT	1
1 FLUC	1 TRIM VECO TYPE CAGE AND ONE CYLINDER
1 CHARACTERISTIC	1 LINEAR
1 CONNECTIONS	1 FLANGED (RF 125 RMS) PER ANSI B46.1
1 UP FOR MOTOR SIZE	1 18.500 KG/CM2
1 PROCESS FLUID ACTION	1 OPEN
1 ON FWER FAILURE	1 CLOSE
1 HANDWHEEL	1 NOT REQUIRED
1 SPECIAL SERVICE	1
1 POSITIONER	1 WITH BY-PASS AND GAUGES
1 LIMIT SWITCH	1 NOT REQUIRED
1 SPRING RANGE	1 15 - 30 PSIG
1 INFLT RANGE	1 3 - 15 PSIG
1 JACKET	1
1 ACCESSORIES	1 ~~FILTER REGUL. WITH GAUGES~~
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C
1 MANUFACTURER	1 NUOVO PIGNONE
1 SUPPLIER	1 NUOVO PIGNONE
1 MODEL	1 1000
1 QUANTITY	1 1
1 ORDER NUMBER	1 140600 - Bs- 3193

1 MESSAGES

1 CALCULATION IN ACCORDANCE WITH	
1 *MASCHEILAN HANDBOOK FOR CONTROL VALVE SIZING*	
1 FLUID - STEAM	
1 MAXIMUM FLOW	1099.00 KG/H
1 MINIMUM FLOW	347.00 KG/H
1 ABSOLUTE PRESSURES	
1 UPSTREAM (AT MAX.FLOW)	16.5000 KG/CM2
1 UPSTREAM (AT MIN.FLOW)	16.89999 KG/CM2
1 DOWNSTREAM (AT MAX.FLOW)	1.30000 KG/CM2
1 DOWNSTREAM (AT MIN.FLOW)	1.27000 KG/CM2
1 OPERATING TEMPERATURE	335.00 DEG.C
1 DENSITY AT OPERATING CONDIT.	0.60317 KG/CM3
1 MOLECULAR WEIGHT	18.0000
1 COMP. FACTOR AT OPER. COND.	1.0000
1 UP ON CLOSE VALVE	18.50000 KG/CM2
1 *CV MAX.CALCULATED	7.51917
1 *CV MAX.CALCULATED OVERSIZED	9.39896
1 *OVERSIZING FACTOR OF CV	1.25000
1 *CV SELECTED	20.00000
1 *CV MIN.CALCULATED	2.31792
1 *CF	0.90000
1 *CFR	0.90000
1 *R	0.99459
1 *RANGEABILITY	8.62842
1 *FLUID VELOCITY	350.40 M/SEC
1 AERODYNAMIC NOISE (DBEL/A)	
1 * ESTIMATED AT 1 METRE	30.00
1 (PIPE THK = 5.49 MM)	

1 * DATA CALCULATED OR SELECTED BY PROGRAMME

1 FOR GENERAL CHARACTERISTICS SEE

1 SPEC. N. 000-SA-E-50028 Sh. 1-1 Rev. 0

1 REV. 1 VERIFIED BY *Puen* 1 DATE 9/4/79

REV. 2 | VERIFIED BY *man* | DATE 15/2/80

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JCB	140600	PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA-51028	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEMAXING	FG.	79 OF	DATE	26/03/79

TAG=106LRC25VB-IDENT.N. 79-PLANT= 10 -SERVICE=FIL.FROM 1002-FT-A -CODES(PIPE=118/ -JOB 0062)-PIPE DIAM 6.000"

VALVE TYPE	BUTTERFLY
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM
NOMINAL DIAMETER	8"
RATING	300 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	DISC AISI 316 - SHAFT & PIN 17-4-PH
BONNET	STANDARD
PACKING	FOR VACUUM
LUBRICATOR MATERIAL	
SOFT SEAT	
PLUG	BUTTERFLY
CHARACTERISTIC	FISHTAIL
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1
OP FOR MOTOR SIZE	2.000 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	OPEN
HANDWHEEL	REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH BY-PASS AND GAUGES (PARALLEL RANGE
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	3-15 PSIG
INPUT RANGE	3-15 PSIG
JACKET	
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER	FISHER CONTROLS SFA
SUPPLIER	FISHER CONTROLS SFA
MODEL	656-T600 FISHTAIL CLASS 2
QUANTITY	1
ORDER NUMBER	140600-B5-308

MESSAGES

CALCULATION IN ACCORDANCE WITH	
"MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"	
FLUID - GAS - LIQUID	
MAXIMUM FLOW	1034.00-50664.00 KG/H
MINIMUM FLOW	431.00-21128.99 KG/H
ABSOLUTE PRESSURES	
UPSTREAM AT MAX.FLOW	0.35000 KG/CM2
UPSTREAM AT MIN.FLOW	0.35000 KG/CM2
DOWNSTREAM AT MAX.FLOW	0.32000 KG/CM2
DOWNSTREAM AT MIN.FLOW	0.31000 KG/CM2
OPERATING TEMPERATURE	-21.00000 DEG.C
DENSITY AT OPERATING CONDIT.	0.87500 KG/CM3
VAPOR PRESSURE OF LIQUID	0.01000 KG/CM2
CRITICAL PRESSURE	41.00000 KG/CM2
OP ON CLOSE VALVE	2.00000 KG/CM2
MOLECULAR WEIGHT	31.29989
CONPR. FACTOR AT OPER. COND.	1.00000
*CV MAX.CALCULATED	337.82-366.35
*CV MAX.CALCULATED OVERSIZED	421.27-457.93
*OVERSIZING FACTOR OF CV	1.25000
*CV SELECTED 90° OPENING	1410.00
*CV MIN.CALCULATED	125.28-132.31
*CF	0.65000
*CFR	0.60000
*R	1.00000
*RANGEABILITY	5.47381
*FLUID VELOCITY	83.21992 M/SEC
(PIPE THK = 7.11 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 1/7 Rev. 0

REV. 2 VERIFIED BY *fin* DATE 15/2/80

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1          CALCULATION IN ACCORDANCE WITH
1  *MASCONEILAN HANDBOOK FOR CONTROL VALVE SIZING*
1
1  FLUID - LIQUID
1
1  MAXIMUM FLOW          49248.99 KG/H
1  MINIMUM FLOW         16124.99 KG/H
1  ABSOLUTE PRESSURES
1      UPSTREAM(AT MAX.FLOW)    1.15000 KG/CM2
1      UPSTREAM(AT MIN.FLOW)    1.40000 KG/CM2
1      DOWNSTREAM(AT MAX.FLOW)  1.05000 KG/CM2
1      DOWNSTREAM(AT MIN.FLOW)  1.05000 KG/CM2
1  OPERATING TEMPERATURE    -23.00000 DEG.C
1  DENSITY AT OPERATING CONDIT.  0.88100 KG/CM3
1  VAPOR PRESSURE OF LIQUID    0.01000 KG/CM2
1  CRITICAL PRESSURE         41.00000 KG/CM2
1  DP ON CLOSE VALVE         3.50000 KG/CM2
1
1  *CV MAX.CALCULATED          220.67
1  *CV MAX.CALCULATED OVERSIZED 275.84
1  *OVERSIZING FACTOR OF CV    1.25000
1  *CV SELECTED 90° OPENING    392.00
1  *CV MIN.CALCULATED          38.62030
1  *CF                          0.65000
1  *CFR                         0.60000
1  *R                           0.68088
1  *RANGEABILITY               10.15010
1  *FLUID VELOCITY              1.98468 M/SEC
1  (PIPE I/D = 7.11 MM)

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* DATA CALCULATED OR SELECTED BY PROGRAMME

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1 REV. 2 1 VERIFIED BY *Pison* 1 DATE *15/4/80*

SPEC. N. 000-SA-E-50028 Sh. 1 of 7 Rev. 0

SNAM-PROGETTI - PROGRAMME ** C D V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 91028	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEXAXING	FG.	82 OF	DATE	26/05/79

TAG=106LRC27VB-IDENT.N. 82-PLANT= 10 -SERVICE=FIL.FROM 1002-FT-B -CODES(PIPE=11B/ -JOB 00621)-PIPE DIAM 6.000"

VALVE TYPE	BUTTERFLY	CALCULATION IN ACCORDANCE WITH
*SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*
*NOMINAL DIAMETER	6"	
*RATING	300 ANSI	FLUID - GAS - LIQUID
*BODY MATERIAL	A 216 WCB	
*TRIM MATERIAL	DISC AISI 316 - SHAFT & PIN 17-4-PH	MAXIMUM FLOW
*BONNET	STANDARD	431.00- 21128.99 KG/H
*PACKING	FOR VACUUM	MINIMUM FLOW
LUBRICATOR MATERIAL		ABSOLUTE PRESSURES
SOFT SEAT		UPSTREAM(AT MAX.FLOW)
*PLUG	BUTTERFLY	0.35000 KG/CM2
*CHARACTERISTIC	FISHTAIL	UPSTREAM(AT MIN.FLOW)
*CONNECTIONS	FLANGED (RF 125 RNS) PER ANSI 846.1	0.32000 KG/CM2
*OP FOR MOTOR SIZE	2.000 KG/CM2	DOWNSTREAM(AT MAX.FLOW)
*PROCESS FLUID ACTION	OPEN	0.31000 KG/CM2
ON POWER FAILURE	OPEN	DOWNSTREAM(AT MIN.FLOW)
*HANDWHEEL	REQUIRED	OPERATING TEMPERATURE
SPECIAL SERVICE		-21.00000 DEG.C
POSITIONER	WITH BY-PASS AND GAUGES (PARALLEL RANGE)	DENSITY AT OPERATING CONDIT.
LIMIT SWITCH	NOT REQUIRED	0.87500 KG/DM3
SPRING RANGE	3 - 15 PSIG	VAPOR PRESSURE CF LIQUID
INPUT RANGE	3 - 15 PSIG	0.01000 KG/CM2
JACKET		CRITICAL PRESSURE
*ACCESSORIES	FILTER REGUL. WITH GAUGES (SET AT 80 PSIG)	41.00000 KG/CM2
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	DP ON CLOSE VALVE
MANUFACTURER	FISHER CONTROLS SRA	2.00000 KG/CM2
SUPPLIER	FISHER CONTROLS SRA	MOLECULAR WEIGHT
MODEL	656-T600 FISHTAIL CLASS 2	31.29999
QUANTITY	1	CONPR. FACTOR AT OPER. COND.
ORDER NUMBER	140600 - B3- 308	1.00000
		*CV MAX.CALCULATED
		337.02-366.35
		*CV MAX.CALCULATED OVERSIZED
		421.27-457.93
		*OVERSIZING FACTOR OF CV
		1.25000
		*CV SELECTED 30° OPENING
		1410.00
		*CV MIN.CALCULATED
		125.28- 132.31
		*CF
		0.65000
		*CFR
		0.60000
		*R
		1.00000
		*RANGEABILITY
		5.47381
		*FLUID VELOCITY
		63.21992 M/SEC
		(PIPE THK = 7.11 MM)

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 2

REV. 2 VERIFIED BY *fian* DATE 15/2/80

SNAP-PROGETTI - PROGRAMMA ** C O V A L **

INSTRUMENTS REQUISITION

CONTROL VALVES AND REGULATORS

CUSTOMER SSCP

LOCATION BASRAH REFINERY - IRAQ

PLANT MEK DEWAXING

JOB 14C6CO PLANT

REQ. NO. 10-SA- 51028 REV. 1

SH. 22 OF DATE 26/03/79

TAG=10-9FIC47V-1CENT.N. 22-PLANT= 10 -SERVICE=M.G.FROM 1021-C -CODES(PIPE=13L/ -JOB 00621)-PIPE DIAM 3.000"

VALVE TYPE REVERSIBLE GLOBE
SEAT TYPE DOUBLE SEAT WITH NORMAL TRIM
NOMINAL DIAMETER 1 1/2"
RATING 600 ANSI
BODY MATERIAL A 216 WCB
TRIM MATERIAL AISI 316 WITH STELLITE
BONNET STANDARD
PACKING TEFLON ASBESTOS
LUBRICATOR MATERIAL BODY MATERIAL
SEAT SEAT
PLUG V PORT
CHARACTERISTIC EQUAL PERCENTAGE
CONNECTIONS FLANGED (RF 125 RMS) PER ANSI B46.1
CP FOR MOTOR SIZE 18.5CO KG/CM2
PROCESS FLUID ACTION OPEN
LN PCKER FAILURE CLOSE
HAND-HEEL NOT REQUIRED
SPECIAL SERVICE
POSITIONER WITH BY-PASS AND GAUGES
LIMIT SWITCH NOT REQUIRED
SPRING RANGE 3 - 15 PSIG
INPLT RANGE 3 - 15 PSIG
JACKET
ACCESSORIES FILTER REGUL. WITH GAUGES
AMBIENT TEMPERATURE MIN 1.7 MAX43.3DEG.C

MANUFACTURER NUOVO PIGNONE
SUPPLIER NUOVO PIGNONE
MODEL 1100
QUANTITY 1
ORDEN ALPRER 140600-85-3133

MESSAGES

CALCULATION IN ACCORDANCE WITH
"MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING"

FLUID - LIQUID

MAXIMUM FLOW 9963.00 KG/H
MINIMUM FLOW 4087.00 KG/H
ABSOLUTE PRESSURES
UPSTREAM (AT MAX.FLOW) 15.60000 KG/CM2
UPSTREAM (AT MIN.FLOW) 16.39999 KG/CM2
DOWNSTREAM (AT MAX.FLOW) 15.00000 KG/CM2
DOWNSTREAM (AT MIN.FLOW) 13.50000 KG/CM2
OPERATING TEMPERATURE 199.00 DEG.C
DENSITY AT OPERATING CONDIT. 0.86600 KG/DM3
MOLECULAR WEIGHT 16.00000
VAPOR PRESSURE OF LIQUID 15.60000 KG/CM2
CRITICAL PRESSURE 225.00 KG/CM2
LIQUID AND ITS VAPORS
PERCENTAGE FLASH 1.00000
OP CN CLOSE VALVE 18.50000 KG/CM2

*CV MAX.CALCULATED 11.86816
*CV MAX.CALCULATED OVERSIZED 14.83520
*OVERSIZING FACTOR OF CV 1.25000
*CV SELECTED 30.00000
*CV MIN.CALCULATED 3.73430
*CF 0.98000
*CFR 0.94000
*R 0.92726
*RANGEABILITY 8.03364
*FLUID VELOCITY 2.91975 M/SEC
(PIPE THK = 5.49 MM)

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-500 28 Sh. 1:1 Rev. 0

REV. 1 VERIFIED BY *lian* DATE 9/4/79

SNAP-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	14C600 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEMAXING	SH. 24 OF	DATE 26/03/79	

TAG=ICICFR053V-IDENT.N. 24-PLANT* 1C -SERVICE*SLACK PR.FLASHCH-AM -CODES(PIPE=138/-JOB 0062)-PIPE DIAM 4.000"

VALVE TYPE	REVERSIBLE GLOBE
SEAT TYPE	DOUBLE SEAT WITH REDUCED TRIM
NOMINAL DIAMETER	2"
RATING	300 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	AISI 316
CONNECT	STANDARD
PACKING	TEFLON
LUBRICATOR MATERIAL	
SOFT SEAT	
PLUG	V PORT
CHARACTERISTIC	EQUAL PERCENTAGE
CONNECTIONS	FLANGED (RF 125 RPS) PER ANSI B46.1
CP FOR MOTOR SIZE	10.900 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	CLOSE
HANDWHEEL	NOT REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH BY-PASS AND GAUGES
LIMIT SWITCH	ACT REQUIRED
SPRING RANGE	3 - 15 PSIG
INPUT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	~~FILTER REG. WITH GAUGES~~
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C
MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1100
QUANTITY	1
ORDER NUMBER	140600-85-3133

MESSAGES

CALCULATION IN ACCORDANCE WITH	
MASCHEILAN HANDBOOK FOR CONTROL VALVE SIZING	
FLUID - LIQUID	
MAXIMUM FLOW	20654.99 KG/H
MINIMUM FLOW	7375.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM(AT MAX.FLOW)	7.00000 KG/CM2
LPSTREAM(AT MIN.FLOW)	8.10000 KG/CM2
DOWNSTREAM(AT MAX.FLOW)	4.85000 KG/CM2
DOWNSTREAM(AT MIN.FLOW)	3.60000 KG/CM2
OPERATING TEMPERATURE	104.00 DEG.C
DENSITY AT OPERATING CONDIT.	0.76300 KG/DM3
VAPOR PRESSURE OF LIQUID	1.30000 KG/CM2
CRITICAL PRESSURE	23.00000 KG/CM2
CP ON CLOSE VALVE	10.90000 KG/CM2
*CV MAX.CALCULATED	19.16451
*CV MAX.CALCULATED OVERSIZED	23.95564
*OVERSIZING FACTOR OF CV	1.25000
*CV SELECTED	30.00000
*CV MIN.CALCULATED	4.72986
*CF	0.95000
*CFR	0.94000
*R	0.98583
*RANGEABILITY	6.34268
*FLUID VELOCITY	4.10849 M/SEC
(PIPE INK = 6.02 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 1+7 Rev. 0

REV. 1 VERIFIED BY *Pignone* DATE 9/4/79

SNAP-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	14C600 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEWAXING	SH. 25 OF	DATE 26/03/79	

TAG=10ICFIC54V-ICENT.N. 25-PLANT= 10 -SERVICE=M.C.FROM 1026-C -CODES(PIPE=13L/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE	NOT REVERSIBLE GLOBE
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM
NOMINAL DIAMETER	1"
RATING	600 ANSI
BODY MATERIAL	A 216 WC
TRIM MATERIAL	AISI 316 WITH STELLITE
BOUNNET	STANDARD
PACKING	TEFLON ASBESTOS
LUBRICANT MATERIAL	BODY MATERIAL
SOFT SEAT	
PLUG	V PORT
CHARACTERISTIC	EQUAL PERCENTAGE
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1
OP FOR MOTOR SIZE	19.500 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	CLOSE
MANUFEEL	NOT REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH BY-PASS AND GAUGES
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	0 - 30 PSIG
INPLT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	~~FILTER REGULL. WITH GAUGES~~
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1200
QUANTITY	1
ORDER NUMBER	140600 - BS - 3193

MESSAGES

CALCULATION IN ACCORDANCE WITH	
MASCHEILAN HANDBOOK FOR CONTROL VALVE SIZING	
FLUID - LIQUID	
MAXIMUM FLOW	4347.00 KG/H
MINIMUM FLOW	1428.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM (AT MAX. FLOW)	15.60000 KG/CM2
UPSTREAM (AT MIN. FLOW)	16.39999 KG/CM2
DOWNSTREAM (AT MAX. FLOW)	15.00000 KG/CM2
DOWNSTREAM (AT MIN. FLOW)	13.50000 KG/CM2
OPERATING TEMPERATURE	199.00 DEG.C
DENSITY AT OPERATING CONDIT.	0.86600 KG/DM3
MOLECULAR WEIGHT	18.00000
VAPOR PRESSURE OF LIQUID	15.60000 KG/CM2
CRITICAL PRESSURE	225.00 KG/CM2
LIQUID AND ITS VAPORS	
PERCENTAGE FLASH	1.00000
CP ON CLOSE VALVE	19.50000 KG/CM2
*CV MAX. CALCULATED	5.65995
*CV MAX. CALCULATED OVERSIZED	7.07494
*OVERSIZING FACTOR OF CV	1.25000
*CV SELECTED	12.00000
*CV MIN. CALCULATED	1.42614
*CF	0.90000
*CFR	0.86000
*H	0.94759
*RANGEABILITY	8.41432
*FLUID VELOCITY	3.52986 M/SEC
(PIPE THK = 5.49 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 1 VERIFIED BY *lion* DATE 3/4/79

SNAM-PROGETTI - PROGRAMMA ** C O V A L **	CUSTOMER	SCCP	JOB	14C6C0 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEMAXING	SH. 93 OF	CATE 26/03/79	

TAG=10ICLIC48V-IDENT.N. 93-PLANT# 10 -SERVICE=SLACKWAXTO 1007-E -CODES(PIPE=118/ -JOB 0062)-PIPE DIAM 2.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	MASONEILAN HANDBOOK FOR CONTROL VALVE SIZING	
NOMINAL DIAMETER	2"	FLUID - LIQUID	
RATING	3CC ANSI	MAXIMUM FLOW	7072.00 KG/H
BODY MATERIAL	A 216 WCB	MINIMUM FLOW	1446.00 KG/H
TRIM MATERIAL	AISI 316 WITH STellite	ABSOLUTE PRESSURES	
BONNET	STANDARD	UPSTREAM AT MAX.FLOW	3.10000 KG/CM2
PACKING	TEFLON	UPSTREAM AT MIN.FLOW	3.27000 KG/CM2
LUBRICATOR MATERIAL		DOWNSTREAM AT MAX.FLOW	2.00000 KG/CM2
SCRT SEAT		DOWNSTREAM AT MIN.FLOW	1.60000 KG/CM2
PLUG	V PORT	OPERATING TEMPERATURE	185.00 DEG.C
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	0.70100 KG/DH3
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	MOLECULAR WEIGHT	85.00000
OP FOR MOTOR SIZE	3.5CO KG/CM2	CMFR. FACTOR AT OPER. COND.	1.00000
PROCESS FLUID ACTION	OPEN	VAPOR PRESSURE OF LIQUID	3.02000 KG/CM2
ON POWER FAILURE	CLOSE	CRITICAL PRESSURE	10.00000 KG/CM2
HANDWHEEL	NOT REQUIRED	LIQUID AND ITS VAPORS	
SPECIAL SERVICE		PERCENTAGE FLASH	7.00000
POSITIONER	WITH BY-PASS AND GAUGES	OP ON CLOSE VALVE	3.50000 KG/CM2
LIMIT SWITCH	NOT REQUIRED	CV MAX.CALCULATED	21.17938
SPRING RANGE	6 - 30 PSIG	CV MAX.CALCULATED OVERSIZED	26.47423
INPUT RANGE	3 - 15 PSIG	OVERSIZING FACTOR OF CV	1.25000
JACKET		CV SELECTED	40.00000
ACCESSORIES	FILTER REGUL. WITH GAUGES	CV MIN.CALCULATED	3.77583
AMBIENT TEMPERATURE	FIN 1.7 MAX43.3DEG.C	CF	0.90000
MANUFACTURER	NUOVO PIGNONE	CFR	0.86000
SUPPLIER	NUOVO PIGNONE	R	1.00000
MODEL	1000	RANGEABILITY	10.59369
QUANTITY	1	FLUID VELOCITY	1.29477 M/SEC
ORDER NUMBER	140600-85-3193	(PIPE THK = 3.91 MM)	

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-500.28 Sh. 1-7 Rev. 0

REV. 1 VERIFIED BY *Pian* DATE 9/4/79

SNAP-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEMAXING	SH. 94 OF	DATE 26/03/79	

TAG=101CLIC49V-ICENT.N. 94-PLANT= 10 -SERVICE=SLACKWAXIO FUELCL -CODES(PIPE=11B/-JOB 0062)-PIPE DIAM 2.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM	*MASCNEILAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	1 1/2"		
RATING	600 ANSI	FLUID - LIQUID	
SECCY MATERIAL	A 216 WCB		
TRIM MATERIAL	AISI 316	MAXIMUM FLOW 7049.00 KG/H	
CONNCT	STANDARD	MINIMUM FLOW 1304.00 KG/H	
PACKING	TEFLON	ABSOLUTE PRESSURES	
LUBRICATOR MATERIAL		UPSTREAM(AT MAX.FLOW) 5.30000 KG/CM2	
SOFT SEAT		UPSTREAM(AT MIN.FLOW) 8.51000 KG/CM2	
PLUG	CONTOURED	DOWNSTREAM(AT MAX.FLOW) 4.50000 KG/CM2	
CHARACTERISTIC	EQUAL PERCENTAGE	DOWNSTREAM(AT MIN.FLOW) 2.00000 KG/CM2	
CONNECTIONS	FLANGED (RF 125 RWS) PER ANSI B46.1	OPERATING TEMPERATURE 93.00000 DEG.C	
CFR FOR MOTOR SIZE	1C.700 KG/CM2	DENSITY AT OPERATING CONDIT. 0.78000 KG/CM3	
PROCESS FLUID ACTION	OPEN	VAPOR PRESSURE OF LIQUID 0.10000 KG/CM2	
ON POWER FAILURE	CLOSE	CRITICAL PRESSURE 10.00000 KG/CM2	
HANDWHEEL	NOT REQUIRED	OP CN CLOSE VALVE 10.70000 KG/CM2	
SPECIAL SERVICE			
POSITIONER	WITH BY-PASS AND GAUGES	*CV MAX.CALCULATED 10.46948	
LIMIT SWITCH	NOT REQUIRED	*CV MAX.CALCULATED OVERSIZED 13.08685	
SPRING RANGE	6 - 30 PSIG	*OVERSIZING FACTOR OF CV 1.25000	
INPUT RANGE	3 - 15 PSIG	*CV SELECTED 16.00000	
JACKET		*CV MIN.CALCULATED 0.67894	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES~~	*CF 0.90000	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.30LG.C	*CFR 0.90000	
MANUFACTURER	NUOVO PIGNONE	*R 0.99855	
SUPPLIER	NUOVO PIGNONE	*RANGEABILITY 23.56614	
MODEL	1000	*FLUID VELOCITY 1.94943 M/SEC	
QUANTITY	1	(PIPE THK = 3.91 MM)	
ORDER NUMBER	140600 - BS - 3193		

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 157 Rev. 0

REV. 1 VERIFIED BY *fuor* DATE 9/4/79

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Y TAG=1012FICA00V-IDENT.N. 26-PLANT= 10 -SERVICE=BY-PASS 1051-J -CODES(PIPE=11IN/ -JOB 00%2)-PIPE DIAM 8.000"
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NOT REVERSIBLE GLOBE		CALCULATION IN ACCORDANCE WITH	
1 VALVE TYPE	1 SINGLE SEAT WITH REDUCED TRIM 6"	1 'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
1 SEAT TYPE	1 8"		
1 NOMINAL DIAMETER	1 150 ANSI	1 FLUID - GAS	
1 RATING	1 A 216 WCB		
1 BODY MATERIAL	1 AISI 316	1 MAXIMUM FLOW	5650.00 KG/H
1 TRIM MATERIAL	1 EXTENSION	1 MINIMUM FLOW	1000.00 KG/H
1 BONNET	1 FOR VACUUM	1 ABSOLUTE PRESSURES	
1 PACKING		1 UPSTREAM(AT MAX.FLOW)	1.30000 KG/CM2
1 LUBRICATION MATERIAL		1 UPSTREAM(AT MIN.FLOW)	1.30000 KG/CM2
1 SOFT SEAT	1 CONTOURED	1 DOWNSTREAM(AT MAX.FLOW)	0.20000 KG/CM2
1 PLUG	1 EQUAL PERCENTAGE	1 DOWNSTREAM(AT MIN.FLOW)	0.20000 KG/CM2
1 CHARACTERISTIC	1 FLANGED (R F 125 RMS) PER ANSI B46.1	1 OPERATING TEMPERATURE	-20.00000 DEG.C
1 CONNECTIONS	1 1.500 KG/CM2	1 DENSITY AT OUTLET CONDITIONS	0.50106 KG/DM3
1 DP FOR MOTOR SIZE	1 OPEN	1 MOLECULAR WEIGHT	30.20000
1 PROCESS FLUID ACTION	1 OPEN	1 COMP. FACTOR AT OPER. COND.	1.00000
1 ON POWER FAILURE	1 REQUIRED	1 DP ON CLOSE VALVE	1.50000 KG/CM2
1 HANDWHEEL			
1 SPECIAL SERVICE		1 *CV MAX.CALCULATED	246.65
1 POSITIONER	1 WITH BY-PASS AND GAUGES	1 *CV MAX.CALCULATED OVERSIZED	308.31
1 LIMIT SWITCH	1 NOT REQUIRED	1 *OVERSIZING FACTOR OF CV	1.25000
1 SPRING RANGE	1 3 - 15 PSIG	1 *CV SELECTED	455.00
1 INPUT RANGE	1 3 - 15 PSIG	1 *CV MIN.CALCULATED	43.65472
1 JACKET		1 *CF	0.40000
1 ACCESSORIES	1 ~~FILTER REGUL. WITH GAUGES~~	1 *CFR	0.86000
1 AMBIENT TEMPERATURE	1 MIN 1.7 MAX 43.3 DEG.C	1 *R	1.00000
		1 *RANGEABILITY	10.42268
1 MANUFACTURER	1 PARCOL	1 *FLUID VELOCITY	174.97 M/SEC
1 SUPPLIER	1 PARCOL	1 AERODYNAMIC NOISE (DBEL/4)	
1 MODEL	1 1-9311	1 * ESTIMATED AT 1 METRE	80 ± 3
1 QUANTITY	1 1	1 (PIPE I.D. = 8.18 MM)	
1 ORDER NUMBER	1 140600-85-291		

MESSAGE 3

* DATA CALCULATED OR SELECTED BY PROGRAMME

REV. 2 VERIFIED BY *finan* DATE 2-1-80

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	14C600 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	
CONTROL VALVES AND REGULATORS	PLANT	MEK DEWAXING	FG. 53 OF	DATE 26/03/78	

I TAG=1012PIC29A-IDENT.N. 53-PLANT= 10 -SERVICE=INERTGAS TO 1004-F -CODES(PIPE=11B/ -JOB 0062)-PIPE DIAM 8.000"

I VALVE TYPE	I BUTTERFLY
I*SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM
I*NOMINAL DIAMETER	I 4"
I*RATING	I 300 ANSI
I*BODY MATERIAL	I A 216 WCB
I*TRIM MATERIAL	I DISC AISI 316 - SHRT 2 PIN 17-4-PH
I*BONNET	I STANDARD
I*PACKING	I FOR VACUUM
I LUBRICATOR MATERIAL	I
I SOFT SEAT	I
I*PLUG	I BUTTERFLY
I*CHARACTERISTIC	I FISHTAIL
I*CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI 846.1
I*DP FOR MOTOR SIZE	I 1.500 KG/CM2
I*PROCESS FLUID ACTION	I OPEN
I ON POWER FAILURE	I CLOSE
I*HANDWHEEL	I REQUIRED
I SPECIAL SERVICE	I
I*POSITIONER	I WITH ~~BY-PASS~~ AND GAUGES(SPLIT-RANGE)
I*LIMIT SWITCH	I NOT REQUIRED
I SPRING RANGE	I 3 ÷ 15 PSIG
I INPLT /OUTPUT SIG. POS.	I 3 ÷ 9 /15 ÷ 3 PSIG
I JACKET	I
I*ACCESSORIES	I FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)
I AMBIENT TEMPERATURE	I MIN 1.7 MAX43.3DEG.C
I MANUFACTURER	I FISHER CONTROLS S/R
I SUPPLIER	I FISHER CONTROLS S/R
I MODEL	I 656-7600 FISHTAIL CLASS 3
I QUANTITY	I 1
I ORDER NUMBER	I 140600-85-308

MESSAGES

I CALCULATION IN ACCORDANCE WITH	
I *MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
I FLUID - GAS	
I MAXIMUM FLOW	2071.00 KG/H
I MINIMUM FLOW	500.00 KG/H
I ABSOLUTE PRESSURES	
I UPSTREAM(AT MAX.FLOW)	1.01000 KG/CM2
I UPSTREAM(AT MIN.FLOW)	1.01000 KG/CM2
I DOWNSTREAM(AT MAX.FLOW)	0.30000 KG/CM2
I DOWNSTREAM(AT MIN.FLOW)	0.25000 KG/CM2
I OPERATING TEMPERATURE	38.00000 DEG.C
I *DENSITY AT OPERATING CONDIT.	0.00075 KG/DM3
I MOLECULAR WEIGHT	30.20000
I COMPR. FACTOR AT OPER. COND.	1.00000
I DP ON CLOSE VALVE	1.50000 KG/CM2
I *CV MAX.CALCULATED	193.51
I *CV MAX.CALCULATED OVERSIZED	241.89
I *OVERSIZING FACTOR OF CV	1.25000
I *CV SELECTED 90° OPENING	392.00
I *CV MIN.CALCULATED	46.71797
I *CF	0.65000
I *CFR	0.60000
I *R	0.76921
I *RANGEABILITY	8.39136
I *FLUID VELOCITY	227.71 M/SEC
I AERODYNAMIC NOISE (DBEL/A)	
I ESTIMATED AT 1 METRE	83.87798
I (PIPE THK = 8.18 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh.1-7 Rev. 0

REV. 2 VERIFIED BY *liam* DATE 15/2/80

UNAN-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	14C600 PLANT	10
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	MEK DEWAXING	FG. 55 OF	DATE 24/03/80	1

I TAG=10120PIC31-IDENT.N. 55-PLANT= 10 -SERVICE=BY-PASS 1038-C -CODES(PIPE=11B/ -JOB 0062)-PIPE DIAM 12.000"

I VALVE TYPE	I BUTTERFLY	I	CALCULATION IN ACCORDANCE WITH		I
I *SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM	I	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*		I
I *NOMINAL DIAMETER	I 10 "	I	FLUID - GAS		I
I *RATING	I 150 ANSI	I	MAXIMUM FLOW		I 8285.00 KG/H
I *BODY MATERIAL	I A 216 WCB	I	ABSOLUTE PRESSURES		I
I *TRIM MATERIAL	I DISC AISI 316 - SHAFT & PIN 17-4-PH	I	UPSTREAM (AT MAX. FLOW)		I 1.40000 KG/CM2
I *DONNET	I STANDARD	I	DOWNSTREAM (AT MAX. FLOW)		I 1.35000 KG/CM2
I *PACKING	I TEFLON	I	OPERATING TEMPERATURE		I 60.00000 DEG.C
I LUBRIFICATOR MATERIAL	I	I	*DENSITY AT OPERATING CONDIT.		I 0.00154 KG/DM3
I SOFT SEAT	I	I	MOLECULAR WEIGHT		I 31.57999
I *PLUG	I BUTTERFLY	I	CONPR. FACIOR AT OPER. COND.		I 1.00000
I *CHARACTERISTIC	I FISHTAIL	I	DP ON CLOSE VALVE		I 1.00000 KG/CM2
I *CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I	*CV MAX. CALCULATED		I 1177.11
I *DP FOR MOTOR SIZE	I 1.000 KG/CM2	I	*CV MAX. CALCULATED OVERSIZED		I 1471.39
I *PROCESS FLUID ACTION	I OPEN	I	*OVERSIZING FACTOR OF CV		I 1.25000
I ON POWER FAILURE	I CLOSE	I	*CV SELECTED 90° OPENING		I 4012.00
I *HANDWHEEL	I REQUIRED	I	*CF		I 0.65000
I SPECIAL SERVICE	I	I	*CFR		I 0.60000
I *POSITIONER	I WITH BY-PASS AND GAUGES	I	*R		I 0.96552
I *LIMIT SWITCH	I NOT REQUIRED	I	*FLUID VELOCITY		I 28.63570 M/SEC
I SPRING RANGE	I 3-15 PSIG	I	AERODYNAMIC NOISE (DBEL/A)		I
I INPUT RANGE	I 3-15 PSIG	I	ESTIMATED AT 1 METRE		I 81.10820
I JACKET	I	I	(PIPE THK = 6.35 MM)		I
I *ACCESSORIES	I FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)	I			I
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.3 DEG.C	I			I
I MANUFACTURER	I FISHER CONTROLS S&P	I			I
I SUPPLIER	I FISHER CONTROLS S&P	I			I
I MODEL	I 655-1600 FISHTAIL CLASS 2	I			I
I QUANTITY	I 1	I			I
I ORDER NUMBER	I 140600-85-308	I			I

I MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 111 Rev. 2

REV. 2 VERIFIED BY *luian* DATE 15/2/80

SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT	10
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	MEK DEWAXING	SH. 27 OF	DATE 25/10/79	

TAG=1013PIC61V-IDENT.N. 27-PLANT# 10 -SERVICE=ANTISURVIST1050-J -CODES(PIPE=13G/ -JOB 0062)-PIPE DIAM 10.000"		CALCULATION IN ACCORDANCE WITH 'MASONELLAN HANDBOOK FOR CONTROL VALVE SIZING'	
VALVE TYPE	NOT REVERSIBLE GLOBE	FLUID	HYDROCARBON GAS
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 8"	MAXIMUM FLOW	21426.00 KG/H
NOMINAL DIAMETER	10"	MINIMUM FLOW	2390.00 KG/H
WATING	500 ANSI	ABSOLUTE PRESSURES	
BODY MATERIAL	ASTM A 352 LCB	UPSTREAM (AT MAX. FLOW)	2.10000 KG/CM ²
TRIM MATERIAL	AISI 316 WITH STABILIZED	UPSTREAM (AT MIN. FLOW)	2.10000 KG/CM ²
BOUNNET	EXTENSION	DOWNSTREAM (AT MAX. FLOW)	1.30000 KG/CM ²
PACKING	TEFLON	DOWNSTREAM (AT MIN. FLOW)	1.30000 KG/CM ²
LUBRICATOR MATERIAL		OPERATING TEMPERATURE	-17.00000 DEG.C
SOFT SEAT	MAX LEAKAGE 0.001% OF CV MAX	DENSITY AT OUTLET CONDITIONS	0.00160 KG/DM ³
PLUG	CONTOURED	MOLECULAR WEIGHT	44.43999
CHARACTERISTIC	EQUAL PERCENTAGE	COMP. FACTOR AT OPER. COND.	0.95000
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	OR ON CLOSE VALVE	5.00000 KG/CM ²
DR. FOR MOTOR SIZE	5.000 KG/CM ²		
PROCESS FLUID ACTION	OPEN		
ON POWER FAILURE	OPEN		
HANDWHEEL	REQUIRED		
SPECIAL SERVICE		CV MAX. CALCULATED	513.90
POSITIONER	WITH BY-PASS AND GAUGES	CV MAX. CALCULATED OVERSIZED	642.37
LIMIT SWITCH	NOT REQUIRED	OVERSIZING FACTOR OF CV	1.25000
SPRING RANGE	3 - 15 PSIG	CV SELECTED	684.00
INPUT RANGE	3 - 15 PSIG	CV MIN. CALCULATED	55.16508
JACKET		CF	0.90000
ACCESSORIES	FLANGE REGUL. WITH GAUGES	CFW	0.84000
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.30 DEG.C	CR	1.00000
MANUFACTURER	PARCOL	RANGEABILITY	12.38914
SUPPLIER	PARCOL	FLUID VELOCITY	41.81213 M/SEC
MODEL	1-6311	AERODYNAMIC NOISE (DBEL/A)	
QUANTITY	1	ESTIMATED AT 1 METRE	
ORDER NUMBER	140600-85-231	(PIPE THK = 9.27 MM)	87±5

MESSAGES	
* DATA CALCULATED OR SELECTED BY PROGRAMME	
REV. 1	VERIFIED BY <i>flaw</i> DATE 7-1-80

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1      CALCULATION IN ACCORDANCE WITH
1      'MASONIELAN' HANDBOOK FOR CONTROL VALVE SIZING'
1
1      FLUID= HYDROCARBON GAS
1
1      MAXIMUM FLOW      24558.00 KG/H
1      MINIMUM FLOW      6322.00 KG/H
1      ABSOLUTE PRESSURES
1      UPSTREAM(AT MAX.FLOW)  17.39999 KG/CM2
1      UPSTREAM(AT MIN.FLOW)  17.39999 KG/CM2
1      DOWNSTREAM(AT MAX.FLOW) 6.65000 KG/CM2
1      DOWNSTREAM(AT MIN.FLOW) 6.65000 KG/CM2
1      OPERATING TEMPERATURE  90.00000 DEG.C
1      *DENSITY AT OUTLET CONDITIONS  0.02056 KG/DM3
1      MOLECULAR WEIGHT      44.20999
1      COMPR. FACTOR AT OPER. COND.  0.84000
1      DP ON CLOSE VALVE     16.50000 KG/CM2
1
1      *CV MAX.CALCULATED      72.95233
1      *CV MAX.CALCULATED OVERSIZED  91.19043
1      *OVERSIZING FACTOR OF CV  1.25000
1      *CV SELECTED            135.00
1      *CV MIN.CALCULATED      18.78021
1      *CF                      0.90000
1      *CFR                     0.86000
1      *R                       1.00000
1      *RANGEABILITY           7.18841
1      *FLUID VELOCITY          73.63136 M/SEC
1      AERODYNAMIC NOISE (DBEL/A)
1      * ESTIMATED AT 1 METRE    96±5
1      (PIPE THK = 6.02 MM)

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I * DATA CALCULATED OR SELECTED BY PROGRAMME
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REV. 1 VERIFIED BY *fin* DATE 7-1-80

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SNAM-PROGETTI - PROGRAMME ** C O V A L **		CUSTOMER	SCOP	JOB	14C600 PLANT	10
INSTRUMENTS REQUISITION		LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	10-SA- 51028 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	MEK DEXAXING	SH. 30 OF	DATE 26/03/79	

TAG=1013FIC24V-IDENT.N. 30-PLANT#		10	-SERVICE=PROPANE FROM1029-F	-CODES(PIPE=23C/	-JOB C062)-PIPE DIAM	6.000"
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VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH	
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASCHEILAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	6"	FLUID - LIQUID	
RATING	300 ANSI	MAXIMUM FLOW	
SECCY MATERIAL	A 216 WCB	MINIMUM FLOW	
TRIM MATERIAL	AISI 316 COVERED COLMOLOY	ABSOLUTE PRESSURES	
ENDNET	STANDARD	UPSTREAM(AT MAX.FLOW)	
PACKING	TEFLON	DOWNSTREAM(AT MIN.FLOW)	
LUBRICATOR MATERIAL		DOWNSTREAM(AT MAX.FLOW)	
SOFT SEAT	MAX LEAKAGE 0.005% OF CV MAX	DOWNSTREAM(AT MIN.FLOW)	
PLUG	CONToured	OPERATING TEMPERATURE	
CHARACTERISTIC	EQUAL PERCENTAGE	DENSITY AT OPERATING CONDIT.	
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1	MOLECULAR WEIGHT	
LP FOR MOTOR SIZE	21.000 KG/CM2	COMPR. FACTOR AT OPER. COND.	
PROCESS FLUID ACTION	OPEN	VAPOR PRESSURE OF LIQUID	
ON POWER FAILURE	OPEN	CRITICAL PRESSURE	
HANDWHEEL	NOT REQUIRED	LIQUID AND ITS VAPORS	
SPECIAL SERVICE		PERCENTAGE FLASH	
POSITIONER	WITH ~~PISS~~ AND GAUGES	ON CLOSE VALVE	
LIMIT SWITCH	NOT REQUIRED	*CV MAX.CALCULATED	
SPRING RANGE	15 - 30 PSIG	*CV MAX.CALCULATED OVERSIZED	
INLET RANGE	3 - 15 PSIG	*OVERSIZING FACTOR OF CV	
JACKET		*LV SELECTED	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES~~	*CV MIN.CALCULATED	
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	*CF	
MANUFACTURER	NUOVO PIGNONE	*CFR	
SUPPLIER	NUOVO PIGNONE	*R	
MODEL	1000	*RANGEABILITY	
QUANTITY	1	*FLUID VELOCITY	
ORDER NUMBER	140600-BS-3193	(PIPE IIR = 7.11 MM)	

MESSAGES		* DATA CALCULATED OR SELECTED BY PROGRAMME	
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FOR GENERAL CHARACTERISTICS SEE		REV. 1	VERIFIED BY <i>Pier</i>	DATE 9/4/79
SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0				

SNAM-PROGETTI - PROGRAMME ** C O V A

CUSTOMER SCOP

JOB 140600 PLANT 10

INSTRUMENTS REQUISITION

LOCATION BASRAH REFINERY - IRAQ

REQ. NO. 10-SA- 51028 REV.

CONTROL VALVES AND REGULATORS

PLANT MEK DEWAXING

FG. 57 OF DATE 26/03/79

TAG=1013P1C37V-ICENT.N. 57-PLANT= 10 -SERVICE=C.W.FROM 1039-C -CODES(PIPE=11C/ -JOB 0062)-PIPE DIAM 12.000"

I VALVE TYPE	I V BALL	I CALCULATION IN ACCORDANCE WITH
I*SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM	I 'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'
I*NOMINAL DIAMETER	I 12 "	I
I*RATING	I 150 ANSI	I FLUID - LIQUID
I*BODY MATERIAL	I A 216 WCB	I
I*TRIM MATERIAL	I V-NOTCH BALL AISI 317 CHROME PLATED - SHARP IX-4-PH	I MAXIMUM FLOW 637149.94 KG/H
I*Bonnet	I STANDARD	I ABSOLUTE PRESSURES
I*PACKING	I TEFLON	I UPSTREAM(AT MAX.FLOW) 3.85000 KG/CM2
I LUBRICATOR MATERIAL	I	I DOWNSTREAM(AT MAX.FLOW) 3.75000 KG/CM2
I SOFT SEAT	I	I OPERATING TEMPERATURE 46.00000 DEG.C
I*PLUG	I V BALL	I DENSITY AT OPERATING CONDIT. 0.99000 KG/DM3
I*CHARACTERISTIC	I EQUAL PERCENTAGE	I VAPOR PRESSURE OF LIQUID 0.10000 KG/CM2
I*CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I CRITICAL PRESSURE 225.00 KG/CM2
I*OP FOR MOTOR SIZE	I 6.300 KG/CM2	I DP ON CLOSE VALVE 6.30000 KG/CM2
I*PROCESS FLUID ACTION	I OPEN	I
I ON POWER FAILURE	I OPEN	I *CV MAX.CALCULATED 2312.31
I*HANDWHEEL	I REQUIRED	I *CV MAX.CALCULATED OVERSIZED 2965.47
I SPECIAL SERVICE	I	I *OVERSIZING FACTOR OF CV 1.25000
I*POSITIONER	I WITH BY-PASS AND GAUGES	I *CV SELECTED 4370.00
I*LIMIT SWITCH	I NOT REQUIRED	I *CF 0.60000
I*SPRING RANGE	I 5 - 20 PSIG	I *CFR 0.55000
I INPUT RANGE	I 3 - 15 PSIG	I *R 1.00000
I JACKET	I	I *FLUID VELOCITY 2.35052 M/SEC
I*ACCESSORIES	I FILTER REGUL. WITH GAUGES (SET AT 35 PSIG)	I (PIPE THK = 6.35 MM)
I AMBIENT TEMPERATURE	I MIN 1.7 MAX43.3DEG.C	I
I MANUFACTURER	I GEC ELLIOTT AUTOMATION	I
I SUPPLIER	I GEC ELLIOTT AUTOMATION	I
I MODEL	I 657-B-U	I
I QUANTITY	I 1	I
I ORDER NUMBER	I 140600-BS-3184	I

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 1 VERIFIED BY *liam* DATE 9/4/79

1 TAG=1014PNC55V-IDENT.N.124-PLANT# 10 *SERVICE= STEAM TO 1001LD -CODES(PIPE=25L/ -JOB 0062)-PIPE DIAM 10.000"

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1      CALCULATION IN ACCORDANCE WITH
1      *MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*
1
1      FLUID - STEAM
1
1      MAXIMUM FLOW                      50000.00 KG/H
1      MINIMUM FLOW                      5000.00 KG/H
1      ABSOLUTE PRESSURES
1      UPSTREAM(AT MAX.FLOW)            30.00000 KG/CM2
1      UPSTREAM(AT MIN.FLOW)            36.00000 KG/CM2
1      DOWNSTREAM(AT MAX.FLOW)          18.50000 KG/CM2
1      DOWNSTREAM(AT MIN.FLOW)          16.50000 KG/CM2
1      OPERATING TEMPERATURE             410.00 DEG.C
1      *DENSITY AT OPERATING CONDIT.     0.00778 KG/DM3
1      *MOLECULAR WEIGHT                 18.00000
1      CORRN. FACTOR AT OPER. COND.      1.00000
1      DP ON CLOSE VALVE                 40.00000 KG/CM2
1
1      *CV MAX.CALCULATED                 220.94
1      *CV MAX.CALCULATED OVERSIZED      276.17
1      *OVERSIZING FACTOR OF CV          1.25000
1      *CV SELECTED                       270.00
1      *CV MIN.CALCULATED                16.72342
1      *CF                                0.98000
1      *CFH                               0.94000
1      *R                                 0.94285
1      *RANGEABILITY                      16.14502
1      *FLUID VELOCITY                   132.96 M/SEC
1      AERODYNAMIC NOISE (DBEL/A)
1      * ESTIMATED AT 1 METRE             80+3-
1      (PIPE THK = 9.27 MM)

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* DATA CALCULATED OR SELECTED BY PROGRAMME

SPEC. N. 000-54-E-0028 5 1-7 Rev. 0

REV. 11 VERIFIED BY *Lin* : I DATE 8-1-80

1	SNAM-PROGETTI - PROGRAMME ** C O V A L **	1	CUSTOMER	SCOP	1	JOB	140600 PLANT	10
1	INSTRUMENTS REQUISITION	1	LOCATION	BASRAH REFINERY - IRAQ	1	REQ. NO.	10-SA- 51028 REV.	1*
1	CONTROL VALVES AND REGULATORS	1	PLANT	HEX DEWAXING	1	SH. 127 OF	DATE 31/07/79	1

1 TAG=10147RC289-10ENT,N.127-PLANT= 10 -SERVICE=WATER-TO-1001-LD -CODES(PIPE=130V -JCH 0062)-PIPE DIAM 2.000"

1	VALVE TYPE	1	NOT REVERSIBLE GLOBE	1	CALCULATION IN ACCORDANCE WITH			
1	SEAT TYPE	1	SINGLE SEAT WITH REDUCED TRIM	3/8"	1	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*		
1	NOMINAL DIAMETER	1	1"		1	FLUID - LIQUID		
1	RATING	1	600 ANSI		1	MAXIMUM FLOW		
1	BODY MATERIAL	1	A 216 WCB		1	723.00 KG/H		
1	TRIM MATERIAL	1	ARMCO 17-4 PH		1	MINIMUM FLOW		
1	BONNET	1	STANDARD		1	576.00 KG/H		
1	PACKING	1	TEFLON		1	ABSOLUTE PRESSURES		
1	LUBRICATOR MATERIAL	1			1	UPSTREAM (AT MAX.FLOW)		
1	SOFT SEAT	1			1	23.00000 KG/CM2		
1	PLUG	1	CONTOURED		1	UPSTREAM (AT MIN.FLOW)		
1	CHARACTERISTIC	1	EQUAL PERCENTAGE		1	27.00000 KG/CM2		
1	CONNECTIONS	1	FLANGED (RF 125 RMS) PER ANSI B4A.1		1	DOWNSTREAM (AT MAX.FLOW)		
1	WOP FOR NUTCH SIZE	1	304000 KG/CM2		1	21.70000 KG/CM2		
1	PROCESS FLUID ACTION	1	OPEN		1	DOWNSTREAM (AT MIN.FLOW)		
1	ON POWER FAILURE	1	CLOSE		1	14.00000 KG/CM2		
1	HANDWHEEL	1	NOT REQUIRED		1	OPERATING TEMPERATURE		
1	SPECIAL SERVICE	1			1	147.00 DEG.C		
1	POSITIONER	1	WITH ~~2-1/2"~~ GAUGES (SPLIT-RANGE)		1	DENSITY AT OPERATING CONDIT.		
1	LIMIT SWITCH	1	NOT REQUIRED		1	0.42000 KG/DM3		
1	SPRING RANGE	1	15-20 PSIG		1	VAPOR PRESSURE OF LIQUID		
1	INPUT/DUTY SIGNAL POS.	1	3-9/3-15 PSIG		1	4.47600 KG/CM2		
1	JACKET	1			1	CRITICAL PRESSURE		
1	ACCESSORIES	1	~~FLUID REGUL. WITH GAUGES~~		1	225.50 KG/CM2		
1	AMBIENT TEMPERATURE	1	MIN 1.7 MAX 47.0 DEG.C		1	UP OR CLOSE VALVE		
1	MANUFACTURER	1	PARCOL		1	31.00000 KG/CM2		
1	SUPPLIER	1	PARCOL		1	*CV MAX.CALCULATED		
1	MODEL	1	1-6311		1	0.77545		
1	QUANTITY	1	1		1	*CV MAX.CALCULATED OVERSIZED		
1	ORDER NUMBER	1	140600-85-231		1	0.96943		
					1	*OVERSIZING FACTOR OF CV		
					1	1.25000		
					1	*CV SELECTED		
					1	2.70000		
					1	*CV MIN.CALCULATED		
					1	0.24920		
					1	*CF		
					1	0.90000		
					1	*CFR		
					1	0.86000		
					1	*R		
					1	0.99418		
					1	*RANGEABILITY		
					1	10.83467		
					1	*FLUID VELOCITY		
					1	0.42453 M/SEC		
					1	(PIPE THK = 3.91 MM)		

1 MESSAGES

1 FOR GENERAL CHARACTERISTICS SEE

1 SPEC. N. 000-SA-E-500 28 Sh. 1/2 Rev. 0

1 * DATA CALCULATED OR SELECTED BY PROGRAMME

1 REV. 1 VERIFIED BY *han* DATE 7-1-80

I SNA*-PROGETTI - PROGRAMME ** C O V A L **	I CUSTOMER	SCOP	I JOB	140600 PLANT	11
I INSTRUMENTS REQUISITION	I LOCATION	BASRAH REFINERY - IRAQ	I REQ. NO.	11-SA- 51128 REV. 1	
I CONTROL VALVES AND REGULATORS	I PLANT	LUBE OIL HIDROFINISH	I SH. 2 OF	DATE 05/12/78	

I TAG-11-FRC-IV -IDENT.N. 2-PIANT= 11 -SERVICE=CHARGE OIL -CODES(PIPE=761/ -JOB 00621)-PIPE DIAM 3.000"

I VALVE TYPE	I REVERSIBLE GLOBE	I	I CALCULATION IN ACCORDANCE WITH		I
I SEAT TYPE	I DOUBLE SEAT WITH REDUCED TRIM	I	I *MASONNEILAN HANDBOOK FOR CONTROL VALVE SIZING*		I
I NOMINAL DIAMETER	I 1 1/2"	I	I FLUID - LIQUID		I
I RATING	I 1500 ANSI	I	I MAXIMUM FLOW		18641.99 KG/H
I BODY MATERIAL	I A 216 WCB	I	I MINIMUM FLOW		6342.00 KG/H
I TRIM MATERIAL	I FULL STELLITE	I	I ABSOLUTE PRESSURES		
I BONNET	I STANDARD	I	I UPSTREAM AT MAX.FLOW		75.39999 KG/CM2
I PACKING	I FOR VACUUM	I	I UPSTREAM AT MIN.FLOW		83.70000 KG/CM2
I LUBRICATOR MATERIAL	I	I	I DOWNSTREAM AT MAX.FLOW		1.00000 KG/CM2
I SOFT SEAT	I	I	I DOWNSTREAM AT MIN.FLOW		1.00000 KG/CM2
I PLUG	I CONTOURED	I	I OPERATING TEMPERATURE		66.00000 DEG.C
I CHARACTERISTIC	I EQUAL PERCENTAGE	I	I DENSITY AT OPERATING CONDIT.		0.87400 KG/DM3
I CONNECTIONS	I FLANGED (RJ) PER ANSI 816.5	I	I VISCOSITY		130.00 CST
I OP FOR MOTOR SIZE	I 113.000 KG/CM2	I	I VAPOR PRESSURE OF LIQUID		0.00100 KG/CM2
I PROCESS FLUID ACTION	I OPEN	I	I CRITICAL PRESSURE		8.80000 KG/CM2
I ON POWER FAILURE	I OPEN	I	I DP ON CLOSE VALVE		113.00 KG/CM2
I HANDWHEEL	I NOT REQUIRED	I	I *CV MAX.CALCULATED		3.36294
I SPECIAL SERVICE	I	I	I *CV MAX.CALCULATED OVERSIZED		4.20367
I POSITIONER	I WITH ~~BY PASS AND~~ GAUGES	I	I *OVERSIZING FACTOR OF CV		1.25000
I LIMIT SWITCH	I NOT REQUIRED	I	I *CV SELECTED		9.00000
I SPRING RANGE	I 6 - 30 PSIG	I	I *CV MIN.CALCULATED		1.08587
I INPUT RANGE	I 3 - 15 PSIG	I	I *CF		0.80000
I JACKET	I	I	I *CFR		0.80000
I ACCESSORIES	I ~~FILTER REGUL. WITH GAUGES (SEE AT 40 PSIG) @~~	I	I *R		0.98872
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.3 DEG.C	I	I *RANGEABILITY		8.28828
I MANUFACTURER	I NUOVO PIGNONE	I	I *FLUID VELOCITY		5.41320 M/SEC
I SUPPLIER	I NUOVO PIGNONE	I	I (PIPE THX = 7.62 MM)		
I MODEL	I 1100	I			
I QUANTITY	I 1	I			
I ORDER NUMBER	I 140600-BS 3136	I			

I MESSAGES

I * DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 117 Rev. 0

I REV. 2 I VERIFIED BY *finan* I DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	11
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	11-SA- 51128	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	LUBE OIL HIDROFINISH	SH.	8 OF	DATE	07/12/78

TAG=11-LC-2V -IDENT.N. 8-PLANT= 11 -SERVICE=STRIPPER CHARGE -CODES(PIPE=751/ -JOB 0062)-PIPE DIAM 3.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	DOUBLE SEAT WITH REDUCED TRIM	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'
NOMINAL DIAPETER	1 1/2"	
RATING	600 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	MAXIMUM FLOW
TRIM MATERIAL	FULL STellite	14600.00 KG/H
BONNET	FINNED	MINIMUM FLOW
PACKING	TEFLON ASBESTOS	7580.00 KG/H
LUBRIFICATOR MATERIAL	BODY MATERIAL	ABSOLUTE PRESSURES
SOFT SEAT		UPSTREAM(AT MAX.FLOW)
PLUG	CONTOURED	71.50000 KG/CM2
CHARACTERISTIC	LINEAR	UPSTREAM(AT MIN.FLOW)
CONNECTIONS	FLANGED (RJ) PER ANSI B16.5	71.59999 KG/CM2
OP FOR MOTOR SIZE	71.500 KG/CM2	DOWNSTREAM(AT MAX.FLOW)
PROCESS FLUID ACTION	OPEN	2.00000 KG/CM2
ON POWER FAILURE	CLOSE	DOWNSTREAM(AT MIN.FLOW)
HANDWHEEL	NOT REQUIRED	1.80000 KG/CM2
SPECIAL SERVICE		OPERATING TEMPERATURE
POSITIONER	WITH ~~BY-PASS~~ AND GAUGES	235.00 DEG.C
LIMIT SWITCH	NOT REQUIRED	DENSITY AT OPERATING CONOIT.
SPRING RANGE	6 - 30 PSIG	0.75400 KG/DM3
INPUT RANGE	3 - 15 PSIG	MOLECULAR WEIGHT
JACKET		31.50000
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 40 PSIG)~~	COMPR. FACTOR AT OPER. COND.
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	1.00000
MANUFACTURER	NUOVO PIGNONE	VAPOR PRESSURE OF LIQUID
SUPPLIER	NUOVO PIGNONE	2.00000 KG/CM2
MODEL	1100	CRITICAL PRESSURE
QUANTITY	1	11.00000 KG/CM2
ORDER NUMBER	140600 BS 3136	LIQUID AND ITS VAPORS
		PERCENTAGE FLASH
		3.00000
		UP ON CLOSE VALVE
		71.50000 KG/CM2
		CV MAX.CALCULATED
		3.37689
		CV MAX.CALCULATED OVERSIZED
		4.22111
		OVERSIZING FACTOR OF CV
		1.25000
		CV SELECTED
		9.00000
		CV MIN.CALCULATED
		1.75177
		CF
		0.80000
		CFR
		0.80000
		R
		0.98872
		RANGEABILITY
		5.13766
		FLUID VELOCITY
		6.26228 M/SEC
		(PIPE THK = 7.62 MM)

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-500.28 Sh.1-7 Rev.0

REV. 2 VERIFIED BY *finan* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	11
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	11-SA- 51128	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	LUBE OIL HIDROFINISH	SH.	9 OF	DATE	07/12/78

I TAG=11-LC-3V -IDENT.N. 9-PLANT= 11 -SERVICE=DRIER CHARGE -CODES(PIPE=11A/ -JOB 0062)-PIPE DIAM 4.000"

I VALVE TYPE	I NOT REVERSIBLE GLOBE	I	CALCULATION IN ACCORDANCE WITH	
I SEAT TYPE	I SINGLE SEAT WITH NORMAL TRIM	I	'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'	
I NOMINAL DIAMETER	I 3"	I	FLUID - LIQUID	
I RATING	I 300 ANSI	I	MAXIMUM FLOW 14212.99 KG/H	
I BODY MATERIAL	I A 216 WCB	I	MINIMUM FLOW 7420.00 KG/H	
I TRIM MATERIAL	I AISI 316	I	ABSOLUTE PRESSURES	
I BONNET	I FINNED	I	UPSTREAM(AT MAX.FLOW) 0.24000 KG/CM2	
I PACKING	I TEFLON (SUITABLE FOR VACUUM)	I	UPSTREAM(AT MIN.FLOW) 0.30000 KG/CM2	
I LUBRICATOR MATERIAL	I	I	DOWNSTREAM(AT MAX.FLOW) 0.16000 KG/CM2	
I SOFT SEAT	I	I	DOWNSTREAM(AT MIN.FLOW) 0.15000 KG/CM2	
I PLUG	I TRIM CAGE TYPE	I	OPERATING TEMPERATURE 235.00 DEG.C	
I CHARACTERISTIC	I EQUAL PERCENTAGE	I	DENSITY AT OPERATING CONDIT. 0.76800 KG/DM3	
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I	VAPOR PRESSURE OF LIQUID 0.00100 KG/CM2	
I DP FOR NOTER SIZE	I 1.000 KG/CM2	I	CRITICAL PRESSURE 8.80000 KG/CM2	
I PROCESS FLUID ACTION	I OPEN	I	DP ON CLOSE VALVE 1.00000 KG/CM2	
I ON POWER FAILURE	I CLOSE	I	*CV MAX.CALCULATED 67.17647	
I HANDWHEEL	I NOT REQUIRED	I	*CV MAX.CALCULATED OVERSIZED 83.97060	
I SPECIAL SERVICE	I	I	*OVERSIZING FACTOR OF CV 1.25000	
I POSITIONER	I WITH BY-PASS AND GAUGES	I	*CV SELECTED 110.00	
I LIMIT SWITCH	I NOT REQUIRED	I	*CV MIN.CALCULATED 25.61153	
I SPRING RANGE	I 3 - 15 PSIG	I	*CF 0.90000	
I INPLT RANGE	I 3 - 15 PSIG	I	*CFR 0.86000	
I JACKET	I	I	*R 0.97935	
I ACCESSORIES	I ~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG) Q~~	I	*RANGEABILITY 4.23494	
I AMBIENT TEMPERATURE	I MIN 1.7 MAX43.3DEG.C	I	*FLUID VELOCITY 1.10734 M/SEC	
I MANUFACTURER	I NUOVO PIGNONE	I	(PIPE THK = 6.02 MM)	
I SUPPLIER	I NUOVO PIGNONE	I		
I MODEL	I GREF	I		
I QUANTITY	I 1	I		
I ORDER NUMBER	I 140600 BS 3136	I		

MESSAGES

FOR GENERAL CHARACTERISTICS SEE SPEC. N. 000-SA-E-50028 Sh.12X Rev.0

REV. 2 VERIFIED BY *Pian* DATE 29/1/79

* DATA CALCULATED OR SELECTED BY PROGRAMME

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	11
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	11-SA- 51128 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	LUBE OIL HIDROFINISH	SH. 10 OF	DATE 07/12/78	1

I TAG=11-LC=4V -IDENT.N. 10-PLANT= 11 -SERVICE=OIL TO STORAGE -CODES(PIPE=13A/ -JOB 0062)-PIPE DIAM 4.000"

I VALVE TYPE	I REVERSIBLE GLOBE	I CALCULATION IN ACCORDANCE WITH
I SEAT TYPE	I DOUBLE SEAT WITH NORMAL TRIM	I 'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'
I NOMINAL DIAMETER	I 2 "	I
I RATING	I 300 ANSI	I FLUID - LIQUID
I BODY MATERIAL	I A 216 WCB	I
I TRIM MATERIAL	I AISI 316	I MAXIMUM FLOW
I BONNET	I STANCARD	I MINIMUM FLOW
I PACKING	I TEFLON	I ABSOLUTE PRESSURES
I LUBRICATOR MATERIAL	I	I UPSTREAM(AT MAX.FLOW)
I SOFT SEAT	I	I UPSTREAM(AT MIN.FLOW)
I PLUG	I V PORT	I DOWNSTREAM(AT MAX.FLOW)
I CHARACTERISTIC	I EQUAL PERCENTAGE	I DOWNSTREAM(AT MIN.FLOW)
I CONNECTIONS	I FLANGED (RF 125 RMS) PER ANSI B46.1	I OPERATING TEMPERATURE
I DP FOR MOTOR SIZE	I 16.000 KG/CM2	I DENSITY AT OPERATING CONDIT.
I PROCESS FLUID ACTION	I OPEN	I CRITICAL PRESSURE
I ON POWER FAILURE	I CLOSE	I DP ON CLOSE VALVE
I HANDWHEEL	I NOT REQUIRED	I
I SPECIAL SERVICE	I	I *CV MAX.CALCULATED
I POSITICKER	I WITH BY-PASS AND GAUGES	I *CV MAX.CALCULATED OVERSIZED
I LIMIT SWITCH	I NOT REQUIRED	I *OVERSIZING FACTOR OF CV
I SPRING RANGE	I 3 - 15 PSIG	I *CV SELECTED
I INPUT RANGE	I 3 - 15 PSIG	I *CV MIN.CALCULATED
I JACKET	I	I *CF
I ACCESSORIES	I ~~FILTER REGUL. WITH GAUGES (SET AT 30 PSIG) @~~	I *CFR
I AMBIENT TEMPERATURE	I MIN 1.7 MAX43.3DEG.C	I *R
I MANUFACTURER	I NUOVO PIGNONE	I *RANGEABILITY
I SUPPLIER	I NUOVO PIGNONE	I *FLUID VELOCITY
I MODEL	I 1100	I (PIPE THK = 6.02 MM)
I QUANTITY	I 1	I
I ORDER NUMBER	I 140600 BS 3136	I

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 417 Rev. 0

REV. 2 VERIFIED BY *fiori* DATE 29/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	11
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	11-SA- 91128 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	LUBE OIL HYDROFINISH	SH. 18 OF	DATE 07/12/78	

TAG-11-LIC-7V -ICENT.N. 14-PLANT= 11 -SERVICE=LIQUID FROM 1104-F -CODES(PIPE=751/ -JOB 00621)-PIPE DIAM 1.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 1/8"	MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING
NOMINAL DIAMETER	1"	
RATING	600 ANSI	FLUID - LIQUID
BODY MATERIAL	A 216 WCB	
TRIM MATERIAL	FULL STellite	MAXIMUM FLOW
BONNET	STANDARD	40.00000 KG/H
PACKING	TEFLON	MINIMUM FLOW
LUBRICATOR MATERIAL		9.00000 KG/H
SOFT SEAT	MAX LEAKAGE 0.005% CV - MET. TO MET.	ABSOLUTE PRESSURES
PLUG	NEEDLE	UPSTREAM(AT MAX.FLOW)
CHARACTERISTIC	LINEAR	71.00000 KG/CM2
CONNECTIONS	FLANGED (RJ) PER ANSI B16.5	UPSTREAM(AT MIN.FLOW)
DP FOR MOTOR SIZE	71.000 KG/CM2	71.09999 KG/CM2
PROCESS FLUID ACTION	OPEN	DOWNSTREAM(AT MAX.FLOW)
ON POWER FAILURE	CLOSE	2.00000 KG/CM2
HANDWHEEL	NOT REQUIRED	DOWNSTREAM(AT MIN.FLOW)
SPECIAL SERVICE		1.80000 KG/CM2
POSITIONER	WITH BY-PASS AND GAUGES	OPERATING TEMPERATURE
LIMIT SWITCH	NOT REQUIRED	40.00000 DEG.C
SPRING RANGE	3 - 15 PSIG	DENSITY AT OPERATING CONDIT.
INPUT RANGE	3 - 15 PSIG	0.64700 KG/DM3
JACKET		MOLECULAR WEIGHT
ACCESSORIES		53.00000
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	COMPR. FACTOR AT OPER. COND.
		1.00000
		VAPOR PRESSURE OF LIQUID
		2.00000 KG/CM2
		CRITICAL PRESSURE
		24.59999 KG/CM2
		LIQUID AND ITS VAPORS
		PERCENTAGE FLASH
		65.00000
		DP ON CLOSE VALVE
		71.00000 KG/CM2
		*CV MAX.CALCULATED
		0.02015
		*CV MAX.CALCULATED OVERSIZED
		0.02519
		*OVERSIZING FACTOR OF CV
		1.25000
		*CV SELECTED
		0.25000
		*CV MIN.CALCULATED
		0.00453
		*CF
		0.90000
		*CFR
		0.90000
		*H
		1.00000
		*RANGEABILITY
		55.20123
		*FLUID VELOCITY
		0.03701 M/SEC
		(PIPE THK = 4.53 MM)

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-500.28 Sh.18 Rev.0

REV. 2 VERIFIED BY *Pian* DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	11
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	11-SA- 51128	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	LUBE OIL HIDROFINISH	SH.	11 OF	DATE	07/12/78

TAG=11-LOC-SV -IDENT.N. 11-PLANT= 11 -SERVICE=WATER FROM 1105-F -CODES(PIPE=11A/ -JOB 00621-PIPE DIAM 2.000"

VALVE TYPE	REVERSIBLE GLOBE
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM
NOMINAL DIAMETER	1 1/2"
RATING	600 ANSI
BODY MATERIAL	A 216 WCB
TRIM MATERIAL	AISI 316
BONNET	STANDARD
PACKING	TEFLON
LUBRIFICATOR MATERIAL	
SCF SEAT	
PLUG	CONTOURED
CHARACTERISTIC	EQUAL PERCENTAGE
CONNECTIONS	FLANGED (RF 125 RMS) PER ANSI B46.1
DP FOR MOTOR SIZE	0.300 KG/CM2
PROCESS FLUID ACTION	OPEN
ON POWER FAILURE	CLOSE
HANDWHEEL	NOT REQUIRED
SPECIAL SERVICE	
POSITIONER	WITH BY-PASS AND GAUGES
LIMIT SWITCH	NOT REQUIRED
SPRING RANGE	3 - 15 PSIG
INPUT RANGE	3 - 15 PSIG
JACKET	
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C
MANUFACTURER	NUOVO PIGNONE
SUPPLIER	NUOVO PIGNONE
MODEL	1000
QUANTITY	1
ORDER NUMBER	140600 BS 3136

MESSAGES

CALCULATION IN ACCORDANCE WITH
'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'

FLUID - LIQUID

MAXIMUM FLOW	3235.00 KG/H
MINIMUM FLOW	1500.00 KG/H
ABSOLUTE PRESSURES	
UPSTREAM(AT MAX.FLOW)	1.09000 KG/CM2
UPSTREAM(AT MIN.FLOW)	1.20000 KG/CM2
DOWNSTREAM(AT MAX.FLOW)	1.00000 KG/CM2
DOWNSTREAM(AT MIN.FLOW)	1.00000 KG/CM2
OPERATING TEMPERATURE	43.00000 DEG.C
DENSITY AT OPERATING CONDIT.	0.99100 KG/DM3
VAPOR PRESSURE OF LIQUID	0.09000 KG/CM2
CRITICAL PRESSURE	225.60 KG/CM2
DP ON CLOSE VALVE	0.30000 KG/CM2

CV MAX.CALCULATED	12.81261
CV MAX.CALCULATED OVERSIZED	16.01576
OVERSIZING FACTOR OF CV	1.25000
CV SELECTED	23.00000
CV MIN.CALCULATED	3.98528
CF	0.90000
CFR	0.86000
FR	0.99046
RANGEABILITY	5.77124
FLUID VELOCITY	0.70417 M/SEC
(PIPE THK = 3.91 MM)	

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-Y Rev. 0

REV. 2 VERIFIED BY *fusion* DATE 24/1/79

REV. 2 VERIFIED BY *John* DATE 29/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	11
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	11-SA- 51128 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	LUBE OIL WIDROFINISH	SH. 6 OF	DATE 07/12/78	1

I TAG=11-PRC-5V -ICENT.N. 6-PLANT= 11 -SERVICE=GAS FROM 1104-F -CODES(PIPE=751/ -JOB 0062)-PIPE DIAM 2.000"

I VALVE TYPE	I NOT REVERSIBLE GLOBE	I CALCULATION IN ACCORDANCE WITH
I SEAT TYPE	I SINGLE SEAT WITH REDUCED TRIM 3/16"	I 'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'
I NOMINAL DIAMETER	I 1"	I
I RATING	I 600 ANSI	I FLUID- HYDROCARBON GAS
I BODY MATERIAL	I A 216 WCB	I
I TRIM MATERIAL	I FULL STELLITE	I MAXIMUM FLOW 283.00 KG/H.
I BONNET	I STANDARD	I MINIMUM FLOW 128.00 KG/H
I PACKING	I TEFLON	I ABSOLUTE PRESSURES
I LUBRICATOR MATERIAL	I	I UPSTREAM (AT MAX.FLOW) 70.00000 KG/CM2
I SOFT SEAT	I MAX LEAKAGE 0,005% CV - MET. TO MET.	I UPSTREAM (AT MIN.FLOW) 72.00000 KG/CM2
I PLUG	I CONTOURED	I DOWNSTREAM (AT MAX.FLOW) 11.00000 KG/CM2
I CHARACTERISTIC	I LINEAR	I DOWNSTREAM (AT MIN.FLOW) 8.10000 KG/CM2
I CONNECTIONS	I FLANGED (RJ) PER ANSI B16.5	I OPERATING TEMPERATURE 40.00000 DEG.C
I OP FOR MOTOR SIZE	I 70.967 KG/CM2	I DENSITY AT OPERATING CONDIT. 0.02106 KG/DH3
I PROCESS FLUID ACTION	I OPEN	I MOLECULAR WEIGHT 13.80000
I ON POWER FAILURE	I OPEN	I COMPR. FACTOR AT OPER. COND. 1.00000
I HANDWHEEL	I NOT REQUIRED	I DP ON CLOSE VALVE 70.00000 KG/CM2
I SPECIAL SERVICE	I	I
I POSITIONER	I WITH BY-PASS AND GAUGES	I *CV MAX.CALCULATED 0.37749
I LIMIT SWITCH	I NOT REQUIRED	I *CV MAX.CALCULATED OVERSIZED 0.47186
I SPRING RANGE	I 3 - 15 PSIG	I *OVERSIZING FACTOR OF CV 1.25000
I INPUT RANGE	I 3 - 15 PSIG	I *CV SELECTED 0.65000
I JACKET	I	I *CV MIN.CALCULATED 0.16600
I ACCESSORIES	I ~~FILTER REGUL. WITH GAUGES (SET AT 20 PSIG)~~	I *CF 0.90000
I AMBIENT TEMPERATURE	I MIN 1.7 MAX 43.3 DEG.C	I *CFR 0.90000
I MANUFACTURER	I NUOVO PIGNONE	I *R 0.99978
I SUPPLIER	I NUOVO PIGNONE	I *RANGEABILITY 3.91578
I MODEL	I 1200	I *FLUID VELOCITY 35.11699 M/SEC
I QUANTITY	I 1	I AERODYNAMIC NOISE (DBEL/A)
I ORDER NUMBER	I 140600 BS 3136	I * ESTIMATED AT 1 METRE
		I (PIPE THK = 5.54 MM)

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-50028 Sh. 1-7 Rev. 0

REV. 2 I VERIFIED BY *Pian* I DATE 24/1/79

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600 PLANT	11
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	11-SA- 51128 REV.	1
CONTROL VALVES AND REGULATORS	PLANT	LUBE OIL HIDROFINISH	SH.	7 OF	DATE 07/12/78

TAG=11-PIC-9V -IDENT.N. 7-PLANT= 11 -SERVICE=BY-PASS MAKEUP GAS -CODES(PIPE=751/ -JOB 0062)-PIPE DIAM 1.000"

VALVE TYPE	NOT REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH
SEAT TYPE	SINGLE SEAT WITH REDUCED TRIM 3/16"	'MASONIELAN' HANDBOOK FOR CONTROL VALVE SIZING'
NOMINAL DIAMETER	1"	
RATING	600 ANSI	FLUID - GAS
BODY MATERIAL	A 216 MCB	
TRIM MATERIAL	FULL STELLITE	MAXIMUM FLOW
BONNET	STANDARD	190.00 KG/H
PACKING	TEFLON	ABSOLUTE PRESSURES
LUBRICATOR MATERIAL		UPSTREAM(AT MAX.FLOW)
SOFT SEAT		81.00000 KG/CM2
PLUG	CONTOURED	DOWNSTREAM(AT MAX.FLOW)
CHARACTERISTIC	LINEAR	38.50000 KG/CM2
CONNECTIONS	FLANGED (RJ) PER ANSI B16.5	OPERATING TEMPERATURE
OP FOR MOTOR SIZE	79.967 KG/CM2	80.00000 DEG.C
PROCESS FLUID ACTION	OPEN	DENSITY AT OPERATING CONDIT.
ON POWER FAILURE	OPEN	0.02236 KG/DM3
HANDWHEEL	NOT REQUIRED	MOLECULAR WEIGHT
SPECIAL SERVICE		11.20000
POSITIONER	WITH BY-PASS AND GAUGES	COMPR. FACTOR AT OPER. COND.
LIMIT SWITCH	NOT REQUIRED	1.00000
SPRING RANGE	3 - 15 PSIG	OP ON CLOSE VALVE
INPUT RANGE	3 - 15 PSIG	51.50000 KG/CM2
JACKET		
ACCESSORIES	~~FILTER REGUL. WITH GAUGES (SEE AT 20 PSIG) 2~~	CV MAX.CALCULATED
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3DEG.C	0.26419
MANUFACTURER	NUOVO PIGNONE	CV MAX.CALCULATED OVERSIZED
SUPPLIER	NUOVO PIGNONE	0.33024
MODEL	1200	OVERSIZING FACTOR OF CV
QUANTITY	1	1.25000
ORDER NUMBER	140600 BS 3136	CV SELECTED
		0.65000
		CF
		0.90000
		CFR
		0.90000
		R
		1.00000
		FLUID VELOCITY
		7.89515 M/SEC
		AERODYNAMIC NOISE (DBEL/A)
		ESTIMATED AT 1 METRE
		77.84276
		(PIPE THK = 4.55 MM)

MESSAGES

DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE
SPEC. N. 000-SA-E-50028 Sh. 1 of 2 Rev. 0

REV. 2 VERIFIED BY *fuaw* DATE 24/1/79

SNAM-PROGETTI - PROGRAMMA ** C O V A L **		CUSTOMER	SCOP	JOB	140600 PLANT	11
INSTRUMENTS REQUISITION		LOCATION	BASHAH REFINERY - IRAQ	REQ. NO.	11-SA- 51128 REV.	1
CONTROL VALVES AND REGULATORS		PLANT	LUBE OIL HYDROFINISH	SH.	17 OF	DATE 26/03/79

TAG=11-TRC-1VA-ICENT.A. 17-PLANT=		11	-SERVICE=REACT.EFFL. 1102-C	-CODES(PIPE=751/	-JOB 00621-PIPE DIAM	6.000"
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VALVE TYPE	BUTTERFLY	CALCULATION IN ACCORDANCE WITH	
*SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	*MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING*	
NOMINAL DIAMETER	3"	FLUID - HYDR. GAS - LIQUID	
RATING	600 ANSI	MAXIMUM FLOW	
BODY MATERIAL	A 216 WCB	ABSOLUTE PRESSURES	
TRIM MATERIAL	DISC AISI 316 - SHAFT & PIN 17-4-PH	UPSTREAM(AT MAX.FLOW)	
ENDNET	STANDARD	DOWNSTREAM(AT MAX.FLOW)	
PACKING	TEFLON ASBESTOS	OPERATING TEMPERATURE	
LUBRIFICATION MATERIAL	BODY MATERIAL	DENSITY AT OPERATING CONDIT.	
SOFT SEAT		VAPOR PRESSURE OF LIQUID	
PLUG	BUTTERFLY	CRITICAL PRESSURE	
CHARACTERISTIC	FISHTAIL	DP ON CLOSE VALVE	
CONNECTIONS	FLANGED (RJ) PER ANSI B16.5	*CV MAX.CALCULATED	
DP FOR MOTOR SIZE	4.00 KG/CM2	*CV MAX.CALCULATED OVERSIZED	
PROCESS FLUID ACTION	OPEN	OVERSIZING FACTOR OF CV	
ON POWER FAILURE	OPEN	*CV SELECTED 90° OPENING	
HANDWHEEL	REQUIRED	*CF	
SPECIAL SERVICE		*CFR	
POSITIONER	WITH BY-PASS AND GAUGES (PARALLEL RANGE)	*R	
LIMIT SWITCH	NOT REQUIRED	*FLUID VELOCITY	
SPRING RANGE	3 - 15 PSIG	(PIPE THK =10.97 MM)	
INFLT RANGE	3 - 15 PSIG		
JACKET			
ACCESSORIES	FILTER REGUL. WITH GAUGES (SET A 20 PSIG)		
AMBIENT TEMPERATURE	MIN 1.7 MAX43.3 DEG.C		

MANUFACTURER	FISHER CONTROLS SPA
SUPPLIER	FISHER CONTROLS SPA
MODEL	456-T600 FISHTAIL CLASS 2
QUANTITY	1
ORDER NUMBER	140600-BS-308

MESSAGES	
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* DATA CALCULATED OR SELECTED BY PROGRAMME	
REV. 3	VERIFIED BY <i>fuen</i> DATE 15/2/80

SNAM-PROGETTI - PROGRAMME ** C O V A L **	CUSTOMER	SCOP	JOB	140600	PLANT	11
INSTRUMENTS REQUISITION	LOCATION	BASRAH REFINERY - IRAQ	REQ. NO.	11-SA- 51128	REV.	1
CONTROL VALVES AND REGULATORS	PLANT	LUBE OIL HIDROFINISH	SH.	21	OF	DATE 07/12/78

TAG=11-XX-1V -ICENT.N. 21-PLANT= 11 -SERVICE=FUEL GAS TO 1101-B -CODES(PIPE=13A/ -JOB 00621)-PIPE DIAM 2.000"

VALVE TYPE	REVERSIBLE GLOBE	CALCULATION IN ACCORDANCE WITH 'MASONIELAN HANDBOOK FOR CONTROL VALVE SIZING'
SEAT TYPE	SINGLE SEAT WITH NORMAL TRIM	
NOMINAL DIAMETER	2"	FLUID- HYDROCARBON GAS
RATING	300 ANSI	ABSOLUTE PRESSURES
BODY MATERIAL	A 216 WCB	UPSTREAM (AT MAX. FLOW)
TRIM MATERIAL	AISI 316	DOWNSTREAM (AT MAX. FLOW)
BONNET	STANDARD	OPERATING TEMPERATURE
PACKING	TEFLON	COMPR. FACTOR AT OPER. COND.
LUBRICATOR MATERIAL	TEFLON	DP ON CLOSE VALVE
SOFT SEAT	TEFLON	
PLUG	QUICK OPENING	
CHARACTERISTIC	QUICK OPENING	
CONNECTIONS	FLANGED (RF 125 NMS) PER ANSI B46.1	
DP FOR MOTOR SIZE	9.000 KG/CM2	
PROCESS FLUID ACTION	CLOSE	
ON POWER FAILURE	CLOSE	
HANDWHEEL	NOT REQUIRED	
SPECIAL SERVICE		
POSITIONER	NOT REQUIRED	
LIMIT SWITCH	NOT REQUIRED	
SPRING RANGE	6 - 30 PSIG	
INPUT RANGE	3 - 15 PSIG	
JACKET		
ACCESSORIES		
AMBIENT TEMPERATURE	MIN 1.7 MAX 43.3 DEG.C	
MANUFACTURER	NUOVO PIGNONE	
SUPPLIER	NUOVO PIGNONE	
MODEL	1000	
QUANTITY	1	
ORDER NUMBER	140600 BS 3136	

MESSAGES

* DATA CALCULATED OR SELECTED BY PROGRAMME

FOR GENERAL CHARACTERISTICS SEE

SPEC. N. 000-SA-E-500 28 Sh. 1-7 Rev. 0

REV. 1 VERIFIED BY *Pian* DATE 12/12/78

4- Drawings

N/A

Bid documents [Insert "include" or "does not include"] drawings.

[Insert the following list of drawings if these documents will be included]

List of Drawings		
No. of Plan	Name of Plane	Purpose

5- Test and Engineering Inspection

The following tests and engineering inspections will be conducted:

List of Inspections and Tests		
Line Item No	Brief Description of Item	Inspection and/or Test
1	All materials	The supplier should be take S.R.C. approves before manufacturing valves and spare parts - Provide SRC with Third party inspection certificate from one of the an international inspection companies fixed below :: 1-BUREAU VERITAS 2-TUV RHEINLAND 3-LLOYD'S REGISTER 4-INTERTEK GLOBAL 5- DNV

Part Three

Conditions and Forms of the Contract for

The Contracts of Supplying Commodities

Section Seven: General Conditions of the Contract for

The Contracts of Supplying Commodities

Section Seven:General Conditionsof the Contract	180
1- Definitions.....	180
2- Contract Documents.....	181
3- Corruptions and Fraud	181
4- Interpretation.....	181
5- Language.....	182
6- Joint Venture or Group of Companies or Organizations	182
7- Qualification	182
8- Notification Memos.....	183
9- Governing Law.....	183
10- Settlement of Disputes.....	183
11- Audit and Review by the Buyer	183
12- Scope of Supply	184
13- Delivery and Documents.....	184
14- Supplier's Responsibilities.....	184
15- Contract Price.....	184
16- Terms of Payment.....	184
17- Taxes and Fees	184
18- Good Performance Guarantee.....	185
19- Copy rights	185
20- Confidential Information	185
21- Subcontracts.....	186
22- Specifications and Standards	186
23- Packaging and Documents	186
24- Insurance.....	186
25- Transportation	187
26- Test and Engineering Inspection.....	187

27- Delay Penalties	187
28- Manufacturer's Guarantee.....	188
29- Indemnification for Patents.....	188
30- Limits of Liability.....	189
31- Change in Laws and Regulations	189
32- Force Majeure	189
33-Change in Orders and Amendment to Contract	190
34-Extension of Term.....	190
35- Work Withdrawal	190
36- Waiver.....	192
37- Restrictions on Exports	192

Section Seven:General Conditionsof the Contract

1- Definitions

1-1- The following words and expressions shall have the meanings stated next to each:

- a- "Contract" means the agreement entered into by the Parties (Buyer and Supplier), in addition to the Contract Documents, to include all annexes and supplements thereto and any other documents referred to herein.
- b- "Contract Documents" means the documents stated in the Contract Agreement, as amended.
- c- "Contract Price" means the amount to be paid to the supplier as stated in the Contract, liable to increase, decrease and revision according to the Terms of Contract.
- d- "Day" means the day in Gregorian calendar.
- e- "Completion" means completion by the Supplier of the services related to the Contract in accordance with the terms and conditions stated in the Contract.
- f- "Commodities " means the Commodities , raw materials, machines, equipments and/or other materials that should be provided by the Supplier to the Buyer under the Contract.
- g- "Buyer's Country" means the country specified in the Special Conditions of the Contract.
- h- "Buyer" means the (Ministry/Department) purchasing the Commodities and Related Services, as stated in the Special Conditions of the Contract.
- i- "Related Services" means the services associated with the supply of Commodities , such as insurance, installation, training, primary maintenance and other obligations of the Supplier under the Contract.
- j- "Subcontractor" means any natural personality or any public of private organization, or combination thereof, which contracts with the Supplier on the supply of part of the Commodities ordered or execution any part of their Related Services.
- k- "Supplier" means any natural personality or any public of private organization, or combination thereof, which Bid is approved by the Buyer and is named in the Contract.
- l- "Point of Delivery" is the place mentioned in the Special Conditions of the Contract.

2- Contract Documents

- 2-1- All the documents constituting the Contract and all parts thereof, as per their order in the Contract are interconnected and integrated and construe each other. The Contract shall be read as a whole.

3- Corruptions and Fraud

If the Buyer is fully convinced that the Supplier is involved in any fraudulent, corrupt, collusive, coercive or obstructive practice during the competition procedure or Contract execution, the Buyer shall have the right, 14 days after giving a notice thereof to the Supplier, to suspend the Supplier's work and cancel the Contract. The provisions of 35-1 shall be applied.

- 3-1- The Buyer(Ministry/Department) shall require the Bidders, Suppliers, Contractors or Advisors to adhere to the higher standards of business ethics during the period of supply and contract execution. In order to achieve this policy, the Buyer:

a- Defines, for the purpose of these provisions, the below stated terms, as follows:

- 1) "Corrupt Practice" means offering, giving, receiving or soliciting, directly or indirectly, anything of value to influence the actions of a public official⁷ throughout the outsourcing process or contract execution.
- 2) "Fraudulent Practice" means any misrepresentation or omission of any fact in view to influence the outsourcing process or contract execution.
- 3) "Collusive Practice" means any scheme or arrangement between two or more Bidders, with or without knowledge of the Buyer, in view to establish artificial and noncompetitive prices.
- 4) "Coercive Practice" means harming or threatening to harm, directly or indirectly, the persons or their properties to influence their participation in the outsourcing processes or influence the contract execution.
- 5) "Obstructive Practice":

First: To intentionally destroy, falsify, distort or conceal investigation-required substantial documents or give false testimony to investigators to obstruct the investigation procedures in any of the abovementioned practices through threatening, provoking or intimidating any Party and prevent it from giving any investigation-related information.

Second: Also means the practices that obstruct the buyer's practicing its right of auditing and revision, as per 11/Inspection and Auditing by the Bank.

- 3-2- Shall be dismissed from work any employee of the Supplier if it is proved that it is involved in any corrupt, fraudulent, collusive, coercive or obstructive practice during the procedures of contracting on purchasing the Commodities .

4- Interpretation

- 4-1- If required by the context, singular may refer to plural and vice-versa.

4-2-

- a- Unless there's contradiction with any conditions in the Contract, the construction of commercial terms and rights and obligations of the Contract Parties shall as specified in the INCOTERMS.

- b- CFR, FCA, CIP, EXW and other similar abbreviations, when used, shall be subject to the rules referred to in the applicable version of INCOTERMS as referred to in the Special Conditions of the Contract issued by the International Chamber of Commerce, Paris.

4-3- Entire Agreement:

The Contract consists of the entire agreement between the Buyer and the Supplier, all correspondences, negotiations and agreements (whether oral or written) made between the Parties before the date of signing the Contract shall be void.

4-4- Amendment

Any change or amendment to the Contract shall have no legal effect unless it is in writing, dated and refers to the Contract specifically. Also, it shall be signed by a duly authorized representative of each Party.

4-5- No Assignment

- a- According to 4-5-b/General Conditions of the Contract, any delay, lingerer or grace from any Party in the application of any if the Contract terms and conditions or complying with time shall not have effect on any of the other Party's rights stated in the Contract. Also, any waiver by any Party of any breach of the Contract shall not constitute a waiver of any thereafter breach(es) of the Contract.
- b- Any assignment by any Party of rights, powers or right recovery under the Contract shall be in writing, dated and signed by authorized representative of the assigning Party. Also, the right and the extent of assignment shall be specified.

4-6- Contract Conditions Validity

If any provision or condition of the Contract is found to be legally prohibited, invalid or inapplicable, such prohibition, invalidity or inapplicability shall not affect the validity or applicability of any other provision or condition of the Contract.

5- Language

- 5-1- The Contract, and all its related correspondences and documents exchanged between the Buyer and the Supplier, shall be written in the language specified in the Special Conditions of the Contract. The supporting documents and printed matters that are considered part of the Contract can be in another language, provided that these shall be accompanied with a true translation into the specified language; such translation shall be adopted for the purpose of Contract construction.
- 5-2- The Supplier shall be charged with all the expenses of translating any documents it submits into the approved language and shall be responsible for the accurate translation of the documents provided by the importer.

6- Joint Venture or Group of Companies or Organizations

- 6-1- If the Supplier is a joint venture or a group of companies or organizations, all Parties shall be considered jointly and severally liable to the Buyer for the execution of the provisions of the contract and the shall appoint one Party of them to act as authorized head to enter into obligations on behalf of the joint venture of the group of companies of organization. The JV or the group of companies or organization may not be restructured or reorganized without prior written consent by the Buyer.

7- Qualification

7-1- The Supplier and its Subcontractors shall have nationalities of eligible countries. The Supplier or its Subcontractor is considered having nationality of a country if it is a resident therein or is incorporating or holding shares in a company or registered and doing business under the provisions of the laws of such country.

7-2- All Commodities and Related Services to be supplied under the Contract and funded by the Buyer shall be originated from an eligible country. For the purpose of this Clause, the origin means the country in which the Commodities, or the commodities produced from manufacturing, processing or assembling essential components of trade mark that has substantially different characteristics than those of their final product, are agriculture, bred, mined, manufactured or processed.

8- Notification Memos

8-1- Any notice of legal action given by a Party to the other according to the Contract shall be in writing and sent to the address specified in the Special Conditions of the Contract. "In writing" means written with receipt acknowledged.

8-2- The notice shall be deemed valid as of the date of receipt or applicability thereof, whichever is later.

9- Governing Law

9-1- The Contract is governed by and construed according to the applicable law in the Republic of Iraq.

10- Settlement of Disputes

10-1- Amicable Resolution:

The Buyer and the Supplier shall exert every reasonable effort to resolve any dispute to arise between them according or connected to the Contract through direct amicable negotiations.

10-2- Arbitration

Failure by the Parties to resolve the dispute within 28 days after starting the negotiations stated in 10-1, any Party may give the other a notice informing it with its intent to resort to arbitration with respect to the subject of dispute. The arbitration procedure shall not be started before the other Party's receipt of such notice. It is possible to start arbitration procedures under the Contract before or after the supply of commodities. The arbitration procedures shall be followed according to the rules stipulated in the Special Conditions of the Contract.

10-3- The choice of arbitration does not prevent the following:

- a- The Parties to continue fulfillment of their obligations according to the Contract, unless they agree otherwise.
- b- The Buyer to make any due payments to the Supplier.

11- Audit and Review by the Buyer

In the Contracts resulting from direct invitation or single offer (monopoly) method, if stipulated in the Bids Data Sheet, the Buyer shall have the right to inspect the Supplier's office and check and audit its accounts and records, as well as its Subcontractors, so far as it is connected to the contract execution and/or the persons they appoint. Such accounts and records shall be audited by auditors appointed by the Buyer, if required by the Buyer.

12- Scope of Supply

12-1- The Commodities and Related Services shall be according to those specified in the Table of Requirements.

13- Delivery and Documents

13-1- As per 33-1/General Conditions of the Contract, the delivery of commodities and completing the execution of Related Services shall be according to the delivery and completion schedule stated in the Table of Requirements. The Supplier shall provide shipping details and any documents stated in the Special Conditions of the Contract.

14- Supplier's Responsibilities

14-1- The Supplier shall provide all Commodities and Related Services stated in the Scope of Supply according to 12/General Conditions of the Contract and the Delivery and Completion Schedule and as stated in 13/General Conditions of the Contract.

15- Contract Price

15-1- The amounts earned by the Contract's Supplier from the Buyer for the Commodities and Related Services shall conform to those specified in its Bid, except for any prices duly amended according to the Special Conditions of the Contract.

16- Terms of Payment

16-1- Contract Price, to include the payments made (if applicable), shall be paid as stated in the Special Conditions of the Contract.

16-2- The Payments due to the Buyer shall be made in writing, accompanied with the receipts that describe the Commodities and Related Services executed and with the documents required as per 13/Special Conditions of the Contract, upon completion of all obligations stipulated in the Contract.

16-3- The due payments shall be made to the Supplier immediately. In no case the payment shall be delayed for more than 60 days after delivery of receipts and acceptance by the Buyer thereof.

16-4- The Supplier's due payments specified in the Contract shall be made in the currencies stated in the Contract.

16-5- Failure by the Buyer to make any due payment on time or within the period specified in the Special Conditions of the Contract, it shall pay interest on the delayed amount at the rate specified in the Special Conditions of the Contract, throughout the delay period and until payments are made in full, whether before or after the court's, or arbitration's, award.

17- Taxes and Fees

17-1- For the Commodities manufactured outside the Buyer's country, The Supplier is liable for all taxes, stamp fee, export license fee and any other fees applicable outside the Buyer's country, according to the prevailing legislations

17-2- For the Commodities manufactured within the Buyer's country, the Supplier shall be liable for all taxes and fees applicable thereto until the delivery of Commodities contracted on to the Buyer, according to the prevailing legislations

- 17-3- The Buyer shall exert every effort to facilitate the Supplier's obtaining any tax exemptions, discounts or exceptions in view to realize maximum reduction in the Commodities ' amount.

18- Good Performance Guarantee

- 18-1- If the good Performance Guarantee is required in the Special Conditions of the Contract, the Supplier shall provide the guarantee specified within 28 days after its being notified with awarding the tender in its favor, unless stated otherwise in the Bids data sheet.
- 18-2- The amounts of good performance guarantee shall be released to the Buyer as indemnification for any loss to occur due to failure by the Supplier to finalize its obligations under the Contract.
- 18-3- The good performance guarantee, if required, shall be in any of the forms stipulated in the Special Conditions of the Contract, or any form approved by the Buyer.
- 18-4- The Buyer shall return to the Supplier the good performance guarantee after 28 days from the Supplier's completing fulfillment of all its obligations under the Contract, to include any obligations of manufacturer's guarantee, unless the Special Conditions of the Contract state otherwise.

19- Copy rights

- 19-1- Copyrights on all drawings, documents and other materials that include data and information submitted by the Buyer remain registered in the Supplier's name. If these were submitted directly to the Buyer from the Supplier or a third Party, to include Commodities suppliers, the copyrights remain registered in the name of such third Party.

20- Confidential Information

- 20-1- Both the Buyer and the Supplier shall strictly keep confidential and not disclose any documents, data or information related, directly or indirectly, to the Contract to any third Party, whether such information are submitted before or during signing, executing or cancelling the Contract, without obtaining the Second Party's written consent. To be excepted from this condition any information, data or documents necessary for the Supplier to have part of the Contract performed through Subcontractors; in which case, the Supplier shall impose confidentiality obligation on the Subcontractor similar to that applies to it as per 20/Special Conditions of the Contract.
- 20-2- The Buyer or the Supplier shall not use any of the documents, information and data they obtain from each other for any purpose other than the Contract entered into between them.
- 20-3- Compliance by the Contract Parties to 20-1 and 20-2/General Conditions of the Contract above shall not apply to the following information:
- a- If the Buyer or the Supplier is required to disclose such information to any other body contributing in funding the project,
 - b- If such information has become public due to a reason beyond the control of either Party,
 - c- If the relevant Party can prove that it possesses such information when it received them and that it had obtained them through other means with no direct or indirect relation to the other Party, or

d- If either Party obtains the same validly from a third Party that has no obligation of confidentiality.

20-4- The provisions of 20/General Conditions of the Contract shall in no way amend the confidentiality obligation given by any Party before signing the Contract with respect to the Supply or any part of the Contract.

20-5- The provisions of 20/General Conditions of the Contract shall survive the termination or completion of the Contract.

21- Subcontracts

21-1- The Supplier shall notice the Buyer in writing with all subcontracts related to the execution of the Contract, if this is not specified in the Bid. This notice, whether in the Bid or in a later time, shall not relieve the Supplier from its obligations, duties or responsibilities under the Contract.

21-2- Subcontracts shall be according to the provisions of the General Conditions of the Contract.

22- Specifications and Standards

22-1- Technical Specifications and Drawings

a- The Commodities and Related Services provided under the Contract shall conform to the technical specifications and standards mentioned in S6 and the Table of Requirements. In the event no standard is stated, then the standard shall equal or exceed the official standards adopted in the Commodities ' countries of origin.

b- The Supplier may disclaim liability for any design, data, drawings, specifications, documents or amendments provided or made by or on behalf of the Buyer, provided that it shall submit a notice of Buyer's disclaimer.

c- Whenever the Contract refers to the standard conditions and performance rules under which the Contract is to be executed, then the reference is to the version or update of such rules and specifications, as specified in the Table of Requirements.

d- Any amendment to such specifications and performance rules during the Contract execution shall not be adopted unless is preceded by the Buyer's prior consent. Such amendment shall be treated according to 33/General Conditions of the Contract.

23- Packaging and Documents

23-1- The Supplier ensures that the Commodities are shipped to their destination as stated in the Contract in a way that guarantees that no damage to occur thereto. Packaging, through the transportation duration, shall be adequate to protect rough handling and exposure to high temperatures, salts, sweats and open- air storage. Also shall be considered the size and weight of packaging boxes, distance of destination and lack of heavy handling equipments throughout the transportations phases, to include the transit.

23-2- Packaging, tagging and documentation in and outside the packages shall be according to the special requirements stipulated in the Contract or any other requirements specified in the Special Conditions of the Contract or any other instructions issued by the Buyer.

24- Insurance

24-1- Unless the Special Conditions of the Contract states otherwise, shall be procured overall insurance on the Commodities imported according to the Contract in a currency that is transferrable to an eligible country. Insurance shall be against loss or damage resulting from manufacture and/or purchase, transportation, storage or delivery.

25- Transportation

Unless the Special Conditions of the Contract states otherwise, the responsibility for arrangement for Commodities transportation shall be according to the INCOTERMS rules.

26- Test and Engineering Inspection

26-1- The Supplier shall, at its own expense, conduct the engineering inspection and tests required for the

Commodities and Related Services, as specified in the Special Conditions of the Contract.

26-2- The engineering inspection and tests may be conducted in the headquarters of the Supplier or the importer's Subcontractor, upon delivery and/or arrival at destination or any other place in Iraq according to the stipulations of the Special Conditions of the Contracts. In the event tests are conducted in the headquarters of the Supplier or the Supplier's Subcontractor, then the Supplier, under 26-2/General Conditions of the Contract, shall offer all facilities and assistance necessary for the testing team, to include the drawings and production data, without incurring additional cost to the buyer.

26-3- The Buyer or its representative may attend the engineering inspection and testing as per 26-2/General Conditions of the Contract, provided that the Buyer shall be charged with all its personal costs and expenses to incur from its attendance, including but not limited to the costs of travel and accommodation.

26-4- The Supplier, before conducting the engineering inspection and tests, shall give the Buyer a prior notice of the date and place in which they are conducted. Also, it shall obtain authorization or consent by any relevant third Party or manufacturer on attendance by the Buyer or its representative in such engineering tests and/or inspection.

26-5- The Buyer, if deems necessary, may require the Supplier to conduct any engineering tests and/or inspection that is not mentioned in the Contract, to verify that the characteristics and performance of such Commodities conform to the technical specifications, rules and standards stated in the Contract, provided that the reasonable costs and expenses to incur by the importer for conducting such engineering tests and/or inspection shall be added to Contract Price. Shall be considered any delay in the delivery dates, completion dates and other obligations affected due to such engineering tests and/or inspection in the course of manufacture and/or the importers' fulfillment of their obligations under the Contract.

26-6- The Supplier shall submit to the Buyer a report on the results of all the engineering tests and inspections conducted.

26-7- The Buyer may reject the Commodities or any part thereof which are proved by the engineering test and/or inspection to be nonconforming to the specifications. The Supplier shall, at its own cost, repair or replace such rejected Commodities or make the necessary modifications thereon to render them conforming to the specifications and shall, after giving the Buyer a prior notice according to 23-4/General Conditions of the Contract, repeat the engineering test and/or inspection.

26-8- The importer's approval on conducting any engineering test and/or inspection, attendance by the Buyer or representative thereof and issuing any report required under 23-6/General Conditions of the Contract shall not relieve it from any other warranties or obligations stated in the Contract.

27- Delay Penalties

27-1- Except for the terms stipulated in 32/General Conditions of the Contract, failure by the Supplier to deliver all or any of the required Commodities on the date(s) of delivery specified in the Contract, the Buyer shall have right, without prejudice to other Contract terms, to deduct from the Contract Price as penalty of delay, an amount equals the rate stated in the Special Conditions of the Contract for the delivery price for late Commodities or unexecuted Services per week of delay or part thereof, until their actual delivery or execution. In the event of reaching the upper limit, the Buyer may terminate the Contract according to 35/General Conditions of the Contract.

28- Manufacturer's Guarantee

28-1- The Supplier guarantees that all Commodities shall be brand new, state-of-the-art and involve all developments in design and materials, unless the Contract states otherwise.

28-2- According to 22-1-b/General Conditions of the Contract, the importer guarantees that the Commodities shall be free of any faults resulting from any omission by the importer or resulting from the design, materials or manufacture, which may appear under the prevailing conditions in the country of destination.

28-3- The guarantee of Commodities or any part thereof shall be valid for 12 months as of the date of delivery and approval thereof at the point delivery specified in the Special Conditions of Contract or for 18 months as of the date of shipping thereof from the port of point of loading in the country of origin, provided that the period to elapse first shall be considered.

28-4- The Buyer shall notify the Supplier on any faults to appear in the Commodities and the nature of such faults, accompanied with all evidences available upon discovering such faults. The Buyer shall give the Supplier ample time to inspect the faults.

28-5- On receiving such notification, the Supplier shall, within the period specified in the Special Conditions of the Contract, repair or replace such Commodities or the damaged part thereof without charging the Buyer with additional cost.

28-6- Failure by the Supplier, within the period specified in the Special Conditions of the Contract, to repair or replace the Commodities, the Buyer, within reasonable time, shall take every corrective action it deems necessary at the Supplier's cost and responsibility without prejudice to any of the Buyer's other rights in the Contract.

29- Indemnification for Patents

29-1- The Supplier, as per 24-2/General Conditions of the Contract, shall indemnify the Buyer without burdening it and the employees and executives serving it with any liability for and/or against all lawsuits, actions, legal proceedings, claims, demands, losses, damages, costs or any expenses, to include the attorney fees, which the Buyer may suffer from as a result of breach or alleged breach of any registered patent, model or design or trade mark or copyright or any other intellectual property rights registered or exist in any other form upon signing the Contract due to the following:

- a- Installation of Commodities by the Supplier or using the same in the site's Country, and
- b- Selling the products of such Commodities in any other Country.

Such indemnification shall not cover any other use of such Commodities or any Part thereof for other than their purpose stated or that could be concluded from the Contract. The indemnification does not cover any breach resulting from using such Commodities or any parts thereof or any of their products resulting from their connection or installation with any equipments or materials not imported by the Supplier according to the Contract.

29-2- If any actions are taken or any claims are made against the Buyer due to a matter stated in

29-1/General Conditions of the Contract, it shall notify the Supplier therewith promptly. The Supplier may, at its own cost, and in the name of the Buyer, make and claim or action or any negotiations to reach settlement to such claim or action.

29-3- Failure by the Supplier to notify with its intent to make any claim or action within twenty eight days as of the date of notification, the Buyer shall have the right to take the same actions.

29-4- The Buyer shall, at the Supplier's request, attempt at providing reasonable assistance in instituting such claims or actions; any additional costs resulting from such assistance shall be reimbursed by the Supplier.

29-5- The Buyer shall indemnify and clear the Supplier and the employees, executives and Subcontractors serving its from and against all the lawsuits, actions, administrative procedures, claims, demands, losses, damages, costs or any expenses, to include the attorney fees, which the Supplier may suffer due to breach or alleged breach of any patent, model or design or trade mark or copyright or any other intellectual property rights registered or exist in any other form upon signing the Contract due to or related to any design, data, drawing, specifications, documents or other materials provided or designed by the Buyer or in its behalf.

30- Limits of Liability

Except of omission or intentional misconduct:

- a- The Buyer shall not be liable in tort or otherwise to the Buyer under the Contract for any indirect losses or the losses resulting from damage to the commodities or using thereof or production or any loss of profit. However, this exemption shall not relieve the Supplier from the payment of any indemnification for the damages agreed to with the Buyer.
- b- Total Supplier's liability in tort or otherwise to the Buyer shall not cause increase of the Contract Price. However, this limitation shall not exceed the Contract Price provided that this limitation of liability shall not include the costs of repair or replacement of damaged equipments or the obligation to indemnify the Buyer for any breach of the Commodities ' specification.

31- Change in Laws and Regulations

31-1- Unless the Contract states otherwise, if there's any change to any laws, regulations, decrees or bylaws or was rendered operative or revoked any of the laws applicable in Iraq within 28 days before the Bid's submission date (where this includes any change to the application or construction of the Contract by the competent authorities) and thus affecting the delivery date and the Contract Price, then this shall, in turn, be amended in the amount they affected there by the Supplier's performance and obligations with respect to the Contract. The amendment of prices shall be increase or decrease, as well as the delivery times, in a way that shall not cause such laws and instructions to have effect on the Supplier in meeting its obligations. Notwithstanding the above, the Supplier shall not be given the increase or decrease, if the same is redressed according to 15/General Conditions of the Contract on Price Revision.

32- Force Majeure

32-1- The Performance Guarantee submitted by the Supplier shall not be confiscated, the Supplier shall not pay the penalty of delay, and the Contract shall not be terminated due to faults if the delay in performance or any other default in performing its obligations according to the Contract results from a Force Majeure.

32-2- "Force Majeure", for the purpose of this Clause, means any case or event beyond the Control of either Party, could not be expected and is not due to omission or default by

either Party. Such cases include but are not limited to war, revolution, fire, flood, epidemic, health quarantine or shipping prohibition.

32-3- The Supplier shall inform the Buyer in writing promptly with the occurrence of Force Majeure and the causes thereof. The Supplier shall, thereafter, attempt at performing its obligations within the limits of the new condition or explore other options to complete work, unless the Buyer requires otherwise there from.

33-Change in Orders and Amendment to Contract

33-1- The Purchase may, any time, require the Supplier in writing according to 8/General Conditions of the Contract, to change the Contract's general scope in one or more of the following:

- a- Drawings, designs and specifications if the commodities to be provided according to the Contract are manufactured specifically to the Buyer.
- b- Method of Packaging and Shipping.
- c- Point of Delivery.
- d- Related services to be provided by the Supplier.

33-2- If any of such changes lead to difference in price, whether increase or decrease, or in the time required to perform the work or the Supplier's execution of any of the Provisions in the Contract, then equal amendment to the Contract Price and the delivery and completion schedules shall be made. The Supplier shall require amendment under this Clause within 28 days after its receipt of the Change Order from the Buyer.

33-3- The Parties shall agree in advance on the price of any service related to the Contract which the Supplier may require by the Supplier but not stated in the Contract, provided that the price thereof shall not exceed the rates required by the Supplier for the same services from other Parties.

33-4- According to above, no amendments or changes to the Contract Conditions shall be accepted unless they are in writing and signed by the Parties.

34-Extension of Term

34-1- If the Supplier or any of its Subcontractors experiences, during the period of Contract execution, circumstances that delay delivery of Commodities or completion of the Related Services in time, as per 13/General Conditions of the Contract, the Supplier shall inform the Buyer therewith in writing within 15 days as of the date of occurrence of the circumstance, stating the cause and period of continuity thereof, provided that the Buyer shall evaluate the condition promptly on receiving the notification and may extend the Contract. In which case, the Parties shall approve the extension through Contract amendment.

34-2- Except for the Force majeure stated in 32/General Conditions of the Contract, any delay in performance or delivery and fulfillment of the obligations, the Supplier shall be subject to penalty of delay as per 26/General Conditions of the Contract, unless it was agreed to extension of the Term of Contract as per 34-2/General Conditions of the Contract.

35- Work Withdrawal

35-1- work withdrawal for violation or default by the Supplier:

The Buyer may, after giving the Supplier a 15- day written notice, has the right to withdraw work, in the following cases, without referring to the court:

- b) If the supplier goes bankrupt or announce his Insolvency.
- c) If the supplier submits a request for bankruptcy or insolvency.
- d) If a decision is issued by the court to place the (supplier's) funds under the control of bankruptcy trustee (syndicate).
- e) If the supplier makes a reconciliation that preserves him from bankruptcy or waives his rights to his creditors.
- f) If the supplier agrees to implement the contract under the supervision of the control board of his creditors
- g) If the supplier is a company that has announced liquidation, excluding the optional liquidation for the purpose of merger or reformation.
- j) If the funds of the contractor are seized by a court of competency and this seizure may lead the contractor to be unable to fulfill his obligations.
- i) If the supplier has failed, without an acceptable excuse, to continue executing the contract or the work progress is stopped for a period of (15) days.
- k) If the supplier has not implemented the contract or has intentionally negligent and careless in fulfilling his obligations according to the contract.
- l) If the commodities have not fulfilled the technical specifications specified in the contract, or if the supplier fails in replacing the commodities with a period of (30) days from receiving a written notice from the buyer.
- m) If the supplier fails in delivering the commodities within the period specified in the contract or within the extension period given by the buyer according to Para 34 of the General Conditions of Contract.
- n) If the supplier fails in performing any of the other tasks commissioned to him according to the contract.
- o) if the supplier is involved, according to the buyer's contentment during the period of contract execution, fraud or corruption practices specified in Para 3 of the General conditions of Contract , in his competition on the contract or in it execution.
- p) If the supplier has subcontracted concerning any section of the contract in way that harms the work quality or violates the instructions of the buyer.
- q) If the supplier submitted or offered to any person (directly or indirectly) a bribery, present, grant, commission , financial gift as an arousal of interest, reward for perform a work, or refraining from performing a works related to the contract.
- s) If it is clear to the buyer that the supplier has practiced any of administrative corruption, fraud, collusion, oppression or hindrance during the competition in order to obtain or execute the contract, and then the buyer has the right, within 15 days after notifying the supplier, to warn him.

The Buyer considers the following definitions for this purpose:

- 1) "Corrupt Practice" means offering, giving, receiving or soliciting, directly or indirectly, anything of value to influence the actions of a public official throughout the supplying process or contract execution.
- 2) "Fraudulent Practice" means any misrepresentation or omission of any fact in view to influence the supplying process or contract execution.
- 3) "Collusive Practice" means any scheme or arrangement between two or more Bidders, with or without knowledge of the Purchaser, in view to establish artificial and noncompetitive prices.
- 4) "Coercive Practice" means harming or threatening to harm, directly or indirectly, the persons or their properties to influence their participation in the acquisition processes or influence the contract execution.
- 5) "Obstructive Practice": means to destroy intentionally, falsify, distort documents and conceal investigation-required evidences or give false testimony to investigators to obstruct the Purchaser's investigation procedures in the corrupt, fraudulent, collusive, coercive practices or threaten, provoke or obstruct any party and prevent it from giving any investigation-related information or prevent it from following up the investigation procedures.

36- Waiver

36-1- The Buyer or the Supplier may not assign their obligations stated in this Contract, in whole or in part, without prior written consent by the other Party.

37- Restrictions on Exports

Without omission of the Supplier's responsibility for the execution of the export documents specified in the Contract, the Supplier shall be relieve from its obligation to supply the Commodities and Related Services in the event any new restrictions on the exporting procedures are imposed by the Buyer or the Buyer's country or a change is made to using the product or the Commodities to be imported that may arise due to trade instructions issued by the country supplying such products and Commodities . However, this shall not relieve the Supplier from its responsibility for acquainting the Buyer with all its procedures taken, supported with documents, all export phases to include its request submitted to obtain export license or authorization letter from the manufacturer as specified in the Contract. In which case, the Contract shall be terminated at the Buyer's convenience as per Para (35-3).

Section Eight: Special Conditions of the Contract for Commodities Supply Contracts

The following Special Conditions of the Contract are intended for supplementing and/or amending the General Conditions of the Contract. In the event of any conflict, the stipulations of the Special Conditions of the Contract shall be relied on.

1-1-h General Conditions of the Contract	Buyer: SOUTH REFINERIES COMPANY/ STATE COMPANY
1-1-k General Conditions of the Contract	Project site(s)/Destination: SOUTH REFINERIES COMPANY HEAD-QUARTER (CIP) -BASRA - REPUBLIC OF IRAQ
4-2-a General Conditions of the Contract	Meanings of commercial terms are as described in the INCOTERMS . (CIP)
4-2-b General Conditions of Contract	Latest version of INCOTERMS (2010) .
5-1 General Conditions of Contract	Language : Arabic/English
7-2 General Conditions of Contract	All Goods and Related Services to be supplied under the Contract and financed by the Employer shall have their origin in Eligible Countries of origin : WEST EUROPE,USA,UAE,JAPAN. For the purpose of this Clause, the origin means the country from which the commodities are manufactured, or through assembling produce commercial commodities that have drastically different basic properties than their components.
8-1 General Conditions of Contract	For sending notice, the Buyer's address is: To: SOUTH REFINERIES COMPANY/ STATE COMPANY Street address: AL SHUAIBA Floor and room number: Contracts& Purchase Department / First Floor City: Basra Country: Republic of Iraq Email: <u>contracts@src.gov.iq</u>
9-1 General Conditions of Contract	Contracts are subject to the Iraqi law.
10-2 General Conditions of Contract	A- COUNCILIATION: THE PARTIES ENDEAVOUR TO SETTLE AMICABLY ANY DISPUTE ARISING OUT OF OR IN CONNECTION WITH THE P\O OR ANY PROVISION THERE OF THROUGH THE APPOINTMENT OF A COMMITTEE FROM BOTH PARTIES TO STUDY THE MATTER CAREFULLY AND COME TO AN AGREEMENT ACCORDING TO RELEVANT EFFECTIVE LAWS AND INSTRUCTIONS. FAILING THE ABOVE, EITHER PARTY SHALL REFER THE MATTER TO THE IRAQI LAWS AND COURTS B- IRAQI COURTS: IN CASE NO AMICABLY SETTLEMENT FOR ANY DISPUTE IS REACHED. THE DISPUTE SHALL BE REFERRED TO THE IRAQI COURT , AND THE P.O. IS SUBJECTED TO IRAQI LAW, REGULATIONS AND INSTRUCTIONS .

13-1 General Conditions Of the Contract	Shipping and other documents to be submitted by the Supplier: THE FOLLOWING DOCUMENTS SHOULD BE SUBMITTED AT LEAST (10) DAYS PRIOR TO MATERIALS ARRIVAL TO ENTRY POINT FOR CUSTOMS CLEARANCE PURPOSE OTHERWISE THE SUPPLIER WILL BEAR ALL CHARGES WHICH WILL OCCUR AS CONSEQUENCE FOR THE DELAY IN OFFERING THE REQUIRED DOCUMENT AT THE REQUIRED PERIOD. 1- COMMERCIAL INVOICES CERTIFIED BY IRAQI COMM. ATTACHEE OR BY THE IRAQI EMBASSY IN CASE OF NO EXISTENCE OF COMM. ATTACHEE .. 2- BILL OF LADING/GMR/AIRWAY BILL 3- PACKING LIST 4- INSURANCE POLICY OR CERTIFICATE OF INSURANCE 5- CERTIFICATE OF ORIGIN CERTIFIED BY IRAQI COMM. ATTACHEE IN THE COUNTRY OF ORIGIN OR BY THE IRAQI EMBASSY IN CASE OF NO EXISTENCE OF COMM. ATTACHEE . 6 – THIRD PARTY INSPECTION CERTIFICATE FROM INTERNATIONAL INSPECTION COMPANIES AS MENTIONED IN INSPECTION ITEM.
15-1 General Conditions of the Contract	Prices given for Commodities and Related Services executed are: un-adjustable
16-1 General Conditions of the Contract	TERMS OF PAYMENT : Method and Terms of Payment for the Supplier under this Contract are as follows: Payment for the Commodities supplied from outside the Buyer's country: The currency of payment for the Commodities supplied from outside the Buyer's country is (US Dollar). BY ACCEPTANCE OF THE AWARDNESS AND THIS CONTRACT YOU HAVE AGREED THAT THE PRICES ARE FIRM AND NONNEGOTIABLE AND PAYMENT WILL BE MADE THROUGH IRREVOCABLE UNTRANSFERABLE UNCONFIRMED L/C AS FOLLOWS : 1-(50 %) UPON SHIPMENT AND SUBMISSION OF THE NECESSARY NUMBER OF ORIGINALS AND COPIES OF THE CONTRACTORS COMMERCIAL. INVOICE CLEAN ON BOARD, BILL OF LADING OR EQUIVALENT FOR OTHER MEANS OF TRANSPORTATION. CERTIFICATE OF ORIGIN. CERTIFICATE OF INSURANCE AND PACKING LIST. 2-(45 %) AFTER ACCEPTANCE OF THE SHIPMENT AND UPON SUBMISSION OF A CERTIFICATE ISSUED BY THE BAYER CONFIRMING RECEIPT OF THE SHIPMENT AND ACCEPTANCE THEREOF CHECKING AND ACCEPTANCE OF SHIPMENT SHOULD BE CARRIED OUT NOT LATER THAN (2) MONTHS OF SHIPMENT DELIVERY TO CIP/ SRC. 3-(5 %) AFTER THE PERIOD OF GUARANTEE IS FINISHED
16-5 General Conditions of Contracts	If it is applicable (The period of payment delay that the buyer shall afterwards pay an interest is [insert number] days : Not Applicable Interest rate that shall be applied is [insert number] days): Not Applicable
17 -1 General Conditions of Contracts	- For the Commodities manufactured outside the Buyer's country, The Supplier is liable for all taxes, stamp fee, export license fee and any other fees applicable outside the Buyer's country, according to the prevailing legislations - STAMP FEES WHICH IS EQUAL TO (0.003) OF THE TOTAL AMOUNT OF CONTRACT SHOULD BE BORNE BY THE SUPPLIER - THIS Contract IS subject TO ALL IRAQI TAX LAWS AND REGULATIONS IN FORCE.

18-1General Conditions of the Contract	Performance guarantee is: compulsory The good performance guarantee amount shall be: (5)% “ OF THE TOTAL PRICE OF THIS CONTRACT SUBMITTED BY THE SUPPLIER BEFORE THE CONTRACT IS SIGNED.
18-3General Conditions Of the Contract	The good performance guarantee shall be UNCONDITIONAL PERFORMANCE BOND, BANK GUARANTEE IN A FORMAL BANK GUARANTEE EXCLUSIVELY THROUGH TRADE BANK OF IRAQ (TBI) OR ANY IRAQI BANK DEPENDABLE BY THE CENTRAL BANK OF IRAQ.
18-4General Conditions of the Contract	The good performance guarantee SHALL REMAIN VALID AND NOT BE RELEASED UNTIL THE SUPPLIER COMPLETES DELIVERY OF ALL MATERIALS TO THE SITE IN IRAQ AND FULFILLS ALL HIS OBLIGATIONS UNDER THE CONTRACT, THE PERIOD OF GUARANTEE IS FINISHED AND SETTLEMENT OF THE FINAL ACCOUNTS
23-2General Conditions Of the Contract	For wrapping, tagging and documentation on envelopes : The packing, marking and documentation within and outside the packages shall be: The materials shall be suitably packed for transport by sea and overland, protected against weather and other hazards to prevent damage thereto and deterioration thereof up to the time of arrival at SRC warehouses in shuaiba and receipt thereof. In case of delicate materials, attention shall be drawn to the necessary provisions for protection of such materials such as machined or lapped parts.
24-1General Conditions Of the Contract	Insurance coverage shall be as specified in the INCOTERMS
25-1General Conditions Of the Contract	The responsibility for transportation of Commodities shall be as specified in the INCOTRMS
26-1General Conditions of the Contract	Inspection and Tests: Required , As supply requirements.
26-2General Conditions of the Contract	Engineering inspection and tests shall be conducted in supplier's sites(manufacturer)
27-1General Conditions of the Contract	Delay Penalties shall be : SUPPLIER HAS TO PAY A DELAY PENALTY FOR EACH DAY DELAY ACCORDING TO THE FOLLOWING EQUATION WHICH SHOULD NOT EXCEED (10%) OF THE TOTAL AMOUNT OF THE CONTRACT TOTAL AMOUNT OF CONTRACT + - ANY CHANGE IN THE AMOUNT -----X 10%= PENALTY PER DAY DELIVERY PERIOD+ - ANY CHANGE IN THE PERIOD /BY DAY BEFORE THE PENALTIES REACH 10% OF THE TOTAL AMOUNT OF THE CONTRACT. AND WHEN THE Delayed PERIOD PASS 25% OF CONTRACT. PERIOD PLUS ALL GIVEN PERIODS THE CLIENT HAS THE RIGHT TO CANCEL THE CONTRACT OR WITHDRAW THE WORK AND THE CONTRACT. WILL BE FULFILLED ON SUPPLIER'S ACCOUNT AND SUPPLIER SHALL BEAR ALL FINANCIAL CONSEQUENCES ARISING FROM THAT WITHOUT ANY NEED FOR NOTIFICATION OR WARNING OR ANY JUDGMENT .
27-1General Conditions of the Contract	The max limit of the delay penalties amount [10] % of the final contract amount

28-3General Conditions Of the Contract	The period of validity of the Warranty shall be: The warranty period shall be 540 days from the date of delivery (CIP) to SRC Warehouse in AL- shuaiba - Al Basra For purposes of the Warranty, the place(s) of final destination(s) shall be: SRC warehouses in shuaiba OR 360 days from the date of the running of the Materials, whichever is earlier.
28-5General Conditions of the Contract	Period of repair or replacement shall be 60 work days Without any additional cost
32General Conditions of the Contract	IT IS CONFIRMED AND AGREED BY THE CONTRACTOR THAT THE PREVAILING CIRCUMSTANCES IN IRAQ DO NOT IN ANY WAY CONSTITUTE AN IMPEDIMENT FOR THE IMPLEMENTATION BY THE CONTRACTOR OBLIGATION UNDER THE CONTRACT.

Equation of Prices Adjustment(N/A)

The prices are adjusted in accordance with the equation motioned later based on Para 15-1 of the General Conditions of Contract. The adopted prices for the payment of the provider's dues according to the contract are subject to adjustment during the implementation of the contract in accordance with the changes in the cost components of workforce and materials, according to the following equation:

$$M2= M1 (A+B P2/P1 + C L2/L1 - M1$$

Noting that: $A+B+C=1$

M2: Increase in price realized to the provider

M1: Price according to the contract

A: Fixed factor represents profit margin and administrative charges according to the contract

B: Fixed factor represents the percentage of workforce component in the price value

C: Factor represents materials component in the prices value

P1, P2: Guide to the fees of the workforce in the industry sector concerned of producing theses commodities in the country of origin in base date and the date according to which the prices were modified

L1, L2: Guide to the fees of the materials in base date and the date according to which the prices were modified in the country of origin.

The Constants A, B, and C are determined by the buyer as shown below:

A: (insert the value of Constant A)

B: (insert the value of Constant B)

C: (insert the value of Constant C)

The provider shall determine the sources that will be adopted in specifying workforce fees and materials prices upon signing the contract in his bid.

Base Date: it is the date that precedes the final date of submitting the bid with thirty days

Price Modification Date: (insert the number of weeks) the weeks that precede the shipment date (represents the mid period of manufacturing)

Both parties shall agree based on this equation, according to the following:

- 1- No review shall be done and prices adjustment for the commodities provided after the end of timings specified for supplying according to the contract, unless mentioned in the agreement of commodities supplying period extension for the commodities that were late supplied for reasons resulting from the provider. The buyer has the right to decrease the commodities and services prices related thereto as a result of equation application.

- 2- If the currency of the prices mentioned in the contract was different from that of the country of origin concerning the fees of workers and materials, the correction factor shall be used to ensure prices adjustment accurately, and the correction factor includes the proportion resulted from dividing exchange rate between the two currencies in the base date and adjustment date.
- 3- The price adjustment does not include the quantities represented by the value of advance payment .

Section Nine: Forms and Contracts for The Contracts of Supplying Commodities

Table of Forms

1- TextofContract	200
2. Good Performance Guarantee	202
3.BankGuarantee for AdvancePayment.....	203

Guiding Form

1- Text of Contract

[The winning Bidder shall fill out this form as per the instructions listed hereafter]

This Contract is entered into on this day [insert number] of [insert month], [insert year]

Between

(1) [Insert buyer's full name], [insert description of legal entity, such as a certain department of a certain Ministry of a certain Government], [insert buyer's country], or a company incorporated according to the law of [insert buyer's country], headquartered in [insert buyer's address], hereafter referred to as the "Buyer".

and

(2) [Insert supplier's name], a company or organization incorporated according to the law of [insert supplier's country], headquartered in [insert supplier's address], hereafter referred to as the "Supplier".

Whereas the Buyer announced a tender for the supply of certain commodities and assistance services [insert short description of the commodities and services], and accepted the Bid submitted by the Supplier for the provision of such commodities and services for [insert contract price in writing and in figures], referred to hereafter as the "Contract Price".

This Agreement testifies the following:

- 1- Words and expressions mentioned in this Agreement shall have the same meanings given in the Contract Conditions referred to hereafter.
- 2- The Following Documents constitute the Contract between the buyer and the Supplier, and shall be read and construed as an integral part of the Contract:
 - a- This Contract Agreement
 - b- Special Conditions of the Contract
 - c- General Conditions of the Contract
 - d- Technical Requirements (to include the List of Requirements and Technical Specification)
 - e- Supplier's Bid and the original Price Table
 - f- Buyer's Acceptance Letter.
 - g- [add here any other documents]
- 3- This Contract supersedes all other Contract Documents. In the event there's contradiction or nonconformance between the Contract Documents, they shall have precedence according to their order listed above.
- 4- For the payments to be made by the buyer to the Supplier as stated hereafter, the Supplier shall first provide the Buyer with the Commodities and Services and to rectify faults according to the provisions of this Contract.
- 5- The Buyer shall pay the buyer, for its provisions of certain Commodities and Services and rectify the faults therein if required, the Contract Price or any other amount

payable according to the provisions of the Contract, at the time and on the method stipulated in the Contract.

The Parties to this Contract Agreement shall execute it according to the law of Iraq on the date stated above.

For and on behalf of the Buyer

Signature: [insert signature]

Title: [insert title or any other suitable capacity]

In presence of: [insert identification of witness]

For and on behalf of the Supplier

Signature: [insert signature]

Title: [insert title or any other suitable capacity]

In presence of: [insert identification of witness]

2. Good Performance Guarantee

[The bank shall fill out this form by the request of the winning bidder according to the instructions mentioned between the brackets]

Date: [Insert date (day, month, year) to deliver the bid]

Name and number of the national competitive bid: [Insert name and number of the bid]

[Insert the name of bank and branch address or issuing

office] **Beneficiary:** [Insert the official name and address

of the buyer] **Good Performance Guarantee No.:** [Insert the number]

We have been notified that [Insert the name of supplier] (called hereinafter as "the Supplier") has concluded the contract No. [Insert Bid Number] dated with you, to supply [Insert the description of the commodities and services related thereto] (called hereinafter as "the Contract")

Accordingly, we understand, according to contract conditions, that the good performance guarantee is required.

At the request of the supplier, we, commit to pay any amount(s) not exceeding in total the amount of [Insert the amount in figures] ([Insert the amount in writing])⁸ Iraqi Dinars, immediately after we have received from you the first written request accompanied by an affidavit stating that the supplier has violated his obligation(s) under the contract, without the need from you to confirm or clarify the base of your request or the amount specified therein.

This guarantee shall expire after before [insert number] days of [insert month] [insert year]⁹;

therefore, any payment order, under this guarantee, we shall receive it on that date or before.

This guarantee is subject to the unified laws of claiming guarantees, and the publications of the International Chamber of Commerce under No. 458, excluding sub Paragraph (2) of the sub- article 20(A) which has been deleted herein.

[The signature(s) of the authorized representative(s) of the bank]

⁸ The bank will insert the amount specified in the special conditions of the contract in the unit that was described in the special conditions of the contract.

⁹ The dates specified according to Para (17-4) of the general conditions of the contract, taking into consideration any obligations in the guarantee by the supplier according to Para (15-2) of the general conditions of the contract that are required to be provided in a partial good performance guarantee. The buyer shall be aware that in case of extending the expiry date of contract, the buyer will need to request an extension for this guarantee from the guarantor. The request shall be in writing and before the expiry date prescribed in the guarantee. upon the preparation of this guarantee, the buyer may deem proper to add the following text to the form, at the end of the Paragraph before the last: " The guarantor accepts to extend this guarantee for one time and for a period not exceeding [six months] [one year], in response to the written request of the buyer for such extension, provided that such request shall be submitted to the guarantor before the expiry of guarantee".

3. Bank Guarantee for Advance Payment

[The bank shall fill out this form by the request of the winning bidder according to the instructions mentioned between the brackets]

Date: [Insert date (day, month, year) to deliver the bid]

Name and number of the national competitive bid: [Insert name and number of the bid]
[Letterhead of the bank]

Beneficiary: [Insert the official name and address of the buyer]

Date: [Insert the date]

Advance Payment Guarantee: [Insert the number]

We, [insert the official name and address of the bank] have been notified that [Insert full name and address of the supplier] (hereinafter called as "The Supplier") has entered into the bid contract No. [Insert Bid No.], dated with you [insert date of agreement], to execute [Insert types of commodities required to be delivered] (hereinafter called as "The Contract")

We understand, according to contract conditions, that the advance payment shall be granted against the advance payment guarantee.

At the request of the supplier, we, commit to pay any amount(s) not exceeding in total the amount of [Insert the amount in figures] ([Insert the amount in writing])¹⁰, immediately after we have received from you the first written request accompanied by an affidavit stating that the supplier has violated his obligation under the contract, because the supplier has used the advance payment for purposes other than delivering the commodities .

This guarantee stipulates, in order to pay up any claim or payment under this guarantee, that the supplier shall have received the aforementioned advance payment to his account [Insert the number] in [Insert the name and address of bank].

The validity of the guarantee shall continue as from the date of receiving the advance payment by the supplier under the contract until [insert the date].¹¹

This guarantee is subject to the unified laws of claiming guarantees, and the publications of the International Chamber of Commerce under No. 458.

[The signature(s) of the authorized representative(s) of the bank]

¹⁰ The guarantor will insert an amount that represents the advance payment mount.

¹¹ Enter the date affixed in the delivery schedule in the contract. The buyer shall be aware that in case of extending the expiry date of contract, the buyer will need to request an extension for this guarantee from the guarantor. The request shall be in writing and before the expiry date prescribed in the guarantee. upon the preparation of this guarantee, the buyer may deem proper to add the following text to the form, at the end of the Paragraph before the last: " The guarantor accepts to extend this guarantee for one time and for a period not exceeding [six months] [one year], in response to the written request of the buyer for such extension, provided that such request shall be submitted to the guarantor before the expiry of guarantee".