

QUOTATION

M/s. Nirmal Industrial Controls Pvt.Ltd.,

4, Nahur Industrial Estate,

L.B.S.Marg, Mulund

Mumbai - 400 080.

Maharashtra, India.

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Web Site: www.nirmalindustries.com



Ref No: NIQ/G160245JITPL_R00-1

Date: 12/08/2016

M/s. Jik Info Tech Pvt. Ltd.

Jiklink, C-22, C Wing, ,

Mezzanine Floor, Satyam Shopping Centre,

M.G.Road, Ghatkopar East,

Mumbai, Maharashtra 400077,

India.

Kind Attn: Mr. Saji Thomas

Sub: Your requirement of Slam Shut Off Valve (SSV)

Dear Sir,

This has reference to enquiry Mail dated 11/08/2016 for said subject.

Please find enclosed Techno-commercial Offer for SSV as per your requirement.

We hope that our offer is inline with your requirement and will convince our technical capability to supply SSV you are looking for.

Thanking you,

Yours faithfully,

For NIRMAL INDUSTRIAL CONTROLS PVT.LTD.

Mr. Nitin Santoshe (Regional Manager-Mktg)

Tel: +91-22-67746225 / Mobile: 91677 80803

ns/tjt/7/98823



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An ISO - 9001: 2008
Company

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HIGHLIGHTS OF OFFER



HIGHLIGHTS OF OFFER

An ISO - 9001: 2008
Company

- 1 We have offered Natural Gas Presure Reduction Valve. Our scope of supply as per Offer No. NIQ/G1602425JIPL_R00-1
- 2 Request you to review enclosed Technical Offer & Data Sheet & let us know In case of any devaitions so that we can send you Revised Offer accordingly.
- 3 In case of any change in scope during detail engineering, there may be price & delivery implications.
- 4 Please note that we have considered NIRMAL's standard Painting Spec and Instrument and Test Plan; in case of any change there may be price & delivery implication.
- 5 We have not considered any civil works & grouting in our scope of supply.

VALVE SIZING SHEET

CLIENT: M/s. Jik Infotech Pvt. Ltd.

Offer No. : G160245
Tag no. : VS
PRS INLET/OUTLET : 6" X 4"

PROCESS PARAMETERS

Inlet pressure (Min/Nor/Max)	45	45	75	psig
Outlet pressure (Min/Nor/Max)	45.0	45	75	psig
Flow Rate (Min/Nor/Max)	52083	104166	125000	scfh
Temperature (Min/Nor/Max)	96.7	125	150	° F
Specific Gravity	0.60			

SSV SIZING CALCULATIONS

$$\Delta P = \left[\frac{Q}{13.57 \times C_g} \right]^2 \times \frac{d \cdot (t_u + 273)}{P_d}$$

Q = Flow in Nm³/Hr
 Pu = Inlet Pressure in Bar Abs
 Pd = Outlet Pressure in Bar Abs
 DP = Differential Pressure (Pu-Pd) in Bar
 d = Specific Gravity of Gas w.r.t. Air
 tu = Temperature at Inlet in °C
 Cg = Flow Coefficient

Design Parameters

Line Pressure (Minimum)
Flow Rate (Maximum)
Temperature (Maximum)
Specific Gravity

Value	Unit
3.0	Barg
3350.6	Nm ³ /Hr
65.6	° C
0.60	

SSV Selection

Selected Cg
Size & Rating of SSV
Pressure Drop Across SSV
Velocity Through SSV

7800	
4"	150 #
0.05	Bar
35.21	m/s

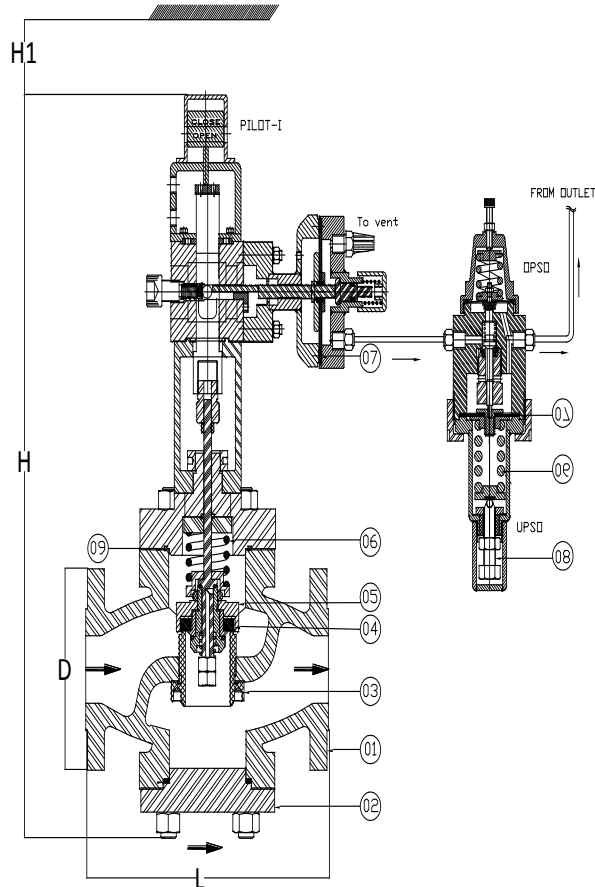
DATA SHEET

**PILOT OPERATED SHUT OFF
PRESSURE CONTROL VALVE
DATA SHEET**

DOC NO : NIQ/G160245/SSV/101

JOB NO : --

PLANT : --



DIMENSIONS	D	L	H	H1		
IN MM	229	352	650	100		

REMARKS :

ENQUIRY NO.	G160245
QUOTATION NO.	NIQ/G160245JITPL/R00-1
P.O. NO	--
OREDR REGN NO.	--
VALVE SR. NO	--

REV	DATE	REMARK	MADE	CHKD.
0	12/08/2016	BIDDING	TJT	GK
1				
2				
3				
4				
5				

CLIENT	M/s. Jik Info Tech Pvt. Ltd.
CONSUL TANT	--

GENERAL	
TAG NO.	ssv 101
LINE/EQUIPMENT	--
P& ID NO.	--
SERVICE	OVER & UND PRE SHUT OFF
MAKE	NIRMAL
MODEL NO	SH4/P
TYPE	PILOT OPERATED
PRODUCT CODE	--
QUANTITY	1 no

SERVICE CONDITION				
FLUID STATE	NATURAL GAS			
FLOW RATE-MIN/OP/MAX	52083	104166	125000	SCFH
INLET PRESSURE-MIN/OP/MAX	45	TO	75	PSIG
OUTLET PRESSURE-MIN/OP/MAX	45	TO	75	PSIG
PRESSUER DROP		7.25		PSIG
TEMP-MIN/OP/MAX	96.7	125	150	°F
SP.GRAVITY/MOL.WT.	0.632		18.26	
VISCOSITY or Cp/Cv	0.01213 Cp			
COMPRESSEBILITY FACTOR	0.988			
SET PRESSURE	45			PSIG
OPSO STE PRESSURE	72.5			PSIG
OPSO STE PRESSURE RANGE	14.5 TO 72.5			PSIG
UPSO SET PRESSURE	35			PSIG
UPSO SET PRESSURE RANGE	21.75 TO 87			PSIG

VALVE SIZING DATA	
REGULATION	SHUT OFF
CALCULATED Cg	--
SELECTED Cg	7800
PREDICTED NOISE LEVEL dBA-at 1m	<85dBA

VALVE & ACTUATOR CONSTRUCTION	
BODY SIZE	
END CONNECTION	FLANGED RF SERR
RATING	150#
IMPULSE CONNECTION	EXTERNAL
IMPULSE SIZE	1/4" NPT (F)
LEAKAGE CLASS	CLASS VI
CERTIFICATION	EN 14382

9	O' RING	NITRILE
8	SET SCREW	SS304
7	DIAPHRAGM	NITRILE
6	SPRING	SPRING STEEL
5	PLUG	SS316
4	SOFT SEATING	NITRILE
3	SEAT	SS316
2	BOTTOM	A216 Gr WCB
1	BODY	A216 Gr WCB

INSPECTION TEST PLAN

INSPECTION & TEST PLAN

Doc No : NI/ITP/R0

ITEM : PRESSURE REGULATING VALVE

SR.NO.	TEST & EXAMINATION TYPE	TYPE OF CHECK	% CHECK	ACCEPTANCE NORM	FORMAT OF RECORD	INSPECTION	
						NIRMAL	CLIENT/ TPI
1	VALVE BODY & TRIM MATERIAL	CHEMICAL & MECH. ANALYSIS	100%	APPROVED G.A.DRAWING	MATERIAL T.C.	R	R
2	IN-PROCESS HYDROTEST OF VALVE BODIES	STRENGTH / SOUNDNESS	100%	ANSI B16.34	INTERNAL T.C.	P	R
3	DIMENSIONAL & VISUAL INSPECTION	DIMENSION & VISUAL CHECK	100%	APPROVED G.A.DRAWING	INTERNAL T.C.	P	R
4	PERFORMANCE TEST	SET POINT TEST	100%	APPROVED G.A.DRAWING	INTERNAL T.C.	P	R
5	FINAL DOCUMENTATION	--	100%	--	DOCUMENT DOSSIER	P	R

LEGENDS :-

P : PERFORM
R : REVIEW
W : WITNESS

PAINTING SPECIFICATION

Painting Specification for Gas Regulators D53 SERIES/ D53(S)SERIES /SH4/SERIES

The general specifications to be adhered by manufactures for painting of Mechanical equipments such as Regulators and associated piping shall as a minimum meet the below mentioned requirements if client does not specified any painting requirements.

A) SURFACE CLEANING:

All exposed carbon steel parts to be painted shall be thoroughly cleaned from inside and outside to remove scale, rust, dirt, and other foreign materials by wire brushing and sand blasting as applicable. Minimum acceptable standard incase of powder tool cleaning shall be St.3 and in case of blast cleaning shall be Sa 2½ as per Swedish Standard SIS 0055900. Surface roughness shall be as 40-60micron.

No painting for stainless steel regulators and regulator parts.

B) PAINTING PROCEDURE: For Carbon Steel - Temp. - Ambient Temp to 100 C.

- 1) Primer: Zinc Rich Epoxy Primer: 35 - 50 microns thick (2 coats)
- 2) Intermediate Coat MIO Polyamide Epoxy: 65 - 75 microns (min) thick (2 coats)
- 3) Finish Coat: Aliphatic Acrylic Polyurethane: 50-75 microns (min) thick (1 coat)

Total DFT: 250 microns (Min) approx.

Paint Manufacturer Any reputed make

C) COLOUR CODE:

Sr. No.	Description	Final Color Code
1	PRV, PRV+SSV, SSV	P.O RED

COMMERCIAL OFFER

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Nirmal Industrial Controls Pvt.Ltd.,

1st Floor Samriddhi,

L.B.S.Marg, Mulund

Mumbai - 400 080.

India.

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**To: Mr. Saji Thomas****M/s. Jik Info Tech Pvt. Ltd.**

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Mezzanine Floor, Satyam Shopping Centre,

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Mumbai, Maharashtra 400077,

India.

Qtn. No. : NIQ/G160245JITPL_R00-1

Qtn. Date : 12/08/2016

Sr. No.	Tag No.	Model	Description	Unit	UNIT Rate (USD)	Qty	TOTAL Amount (USD)
1			SLAM SHUT OFF VALVE SIZE & RATING: 4"X150#	1 No.	USD 4,275	1	USD 4,275

1	Prices	: FOB Mumbai Sea Port	Sub Total	\$4,275
2	Packing Charge	: 3% extra on base value	Packing Charge @ 3%	\$128
3	Validity	: 30 Days	Total Amount	\$4,403
4	Freight	: To be paid by purchaser.		
5	Insurance	: To be paid by purchaser.		
6	Guarantee	: 12 months from date of commissioning or 18 months from date of despatch, whichever is earlier. (Not applicable for consumable spare items)		
7	Inspection	: For offering inspection at our factory @ \$ 1000/- extra OR 2% of the basic offer value, whichever is higher. (Not applicable for consumable spare items)		
8	Payment	: 100% Advance against proforma invoice through irrevocable confirmed LC at sight.		
9	Delivery	: 8 weeks from the date of receipt of LC.		
10	L.D.	: Not Applicable		
11	Destination	: Client to specify.		
12	Mode Of Packing	: Exportworthy Packing		
13	Commissioning Charges	: We do supervision of installation & commissioning. Supervision of commissioning shall be charged @USD 1200/- per Manday. Also to & fro travel days charges on your account. All other charges like to & fro Air fare, lodging, boarding, accommodation, visa charges, local conveyance & any other incidental charges shall be borne by purchaser.		
14	Mode Of Dispatch	: By Sea		
15	Documents reqd from purchaser	: Approved G.A.Drgs.		
16	Documents by nirmal industries	: Guarantee, Internal Test Certificate & I.M. be submitted		

Note :For **Nirmal Industrial Controls Pvt.Ltd.,**

Mr. Nitin Santoshe (Regional Manager-Mktg)

STANDARD TERMS & CODITIONS

Standard Terms and Conditions for Supply

I. PRICE BASIS: Refer priced SOR.

II. TAXES & DUTIES: Refer priced SOR.

III. PAYMENT TERMS: Refer priced SOR.

IV. DELIVERY: Refer priced SOR.

V. VALIDITY: Prices quoted are valid 30 Days from the offer. Extension in validity if required, needs to be obtained prior to order placement

VI. CONFIDENTIAL INFORMATION: Specifications, drawings, data, software and other information transmitted by seller to buyer are the property of seller or its supplier. Information marked proprietary or confidential are trade secrets and shall only be disclosed in confidence on a need to know basis on the condition that it is not to be reproduced, copied, reverse engineered or used for any other purpose than the purpose for which it is provided and shall not be disclosed to third parties without prior written permission from seller. The provision of this section shall not apply to that part of information which 1) is or becomes generally available to the public through no fault of buyer 2) already in possession of buyer prior to disclosure hereunder 3) hereafter received from a third party who did not receive the same from seller or under an obligation of confidence or 4) required by law or governmental agency to be disclosed provided that the buyer notifies seller of the disclosure requirements and assist seller in objecting to limiting to such disclosure.

VII. DELIVERY & DOCUMENTATION: All delivery or shipping dates are approximate and are best on seller's prompt receipt of all necessary information from the buyer to properly process the order. In the event the buyer delays or fails to provide any information for seller, seller shall be entitled to a sufficient extension of time to overcome such delay or failure and to an adjustment in the price.

VIII. BUYER SUPPLIED DATA: To the extent that the seller has relied upon any specifications, information, representation of operating conditions or any other data or information supplied by buyer to the seller in selection of or design of the goods and / or services and the preparation of the seller's offer and in the event that the actual operating conditions or other conditions differ from those represented by the buyer and relied upon by the seller, any warranties or other provisions contained herein which are affected by such conditions, shall be null and void, unless otherwise mutually agreed upon in writing.

IX. WARRANTY:

1. The Seller warrants that the Goods manufactured or Services provided by Seller will be free from defects in materials or workmanship under normal use and care until the expiration of the applicable warranty period. Goods are warranted for twelve (12) months from the date of initial installation or eighteen (18) months from the date of shipment by Seller, whichever period expires first. Consumables are not included in warranty. Products purchased by Seller from a third party for resale to Buyer ("Resale Products") shall carry only the warranty extended by the original manufacturer. Buyer agrees that Seller has no liability for Resale Products beyond making a reasonable commercial effort to arrange for procurement and shipping of the Resale Products. If Buyer discovers any warranty defects and notifies Seller thereof in writing during the applicable warranty period, Seller shall, at its option, correct any errors that are found by Seller in the firmware or Services, or repair or replace ex-works point of manufacture that portion of the Goods or firmware found by Seller to be defective or refund the purchase price of the defective portion of the Goods/Services. All replacements or repairs necessitated by inadequate maintenance, normal wear and usage, unsuitable environmental conditions, accident, misuse, improper installation, modification, repair, storage or handling, or any other cause not the fault of Seller is not covered by this limited warranty, and shall be at Buyer's expense. Seller shall not be obligated to pay any costs or charges incurred by Buyer or any other party except as may be agreed upon in writing in advance by an authorized Seller representative. All costs of dismantling, reinstallation and freight under this warranty clause shall be borne by Buyer unless accepted in writing by Seller. Goods repaired and parts replaced during the warranty period shall be in warranty for the remainder of the original warranty period or ninety (90) days, whichever is longer. This limited warranty is the only warranty made by Seller and can be amended only in a writing signed by an authorized representative of Seller. The warranty for software shall be as set out in Seller's standard license agreement. Except as otherwise expressly provided in the Agreement, there are no representations or warranties of any kind, express or implied, as to merchantability, satisfactory quality, acceptable quality, fitness for particular purpose or any other matter with respect to any of the goods or services. The forgoing sets out Buyer's exclusive remedy for breach of warranty.

2. **LIMITATION OF REMEDY AND LIABILITY:** The remedies provided by the seller, for the times specified, are exclusive. Seller shall not be liable for damages caused by delay in performance. The sole and exclusive remedy of the breach of warranty hereunder shall be limited to repair, correction, replacement or refund of purchase price under the limited warranty clause. In no event, regardless of the form of the claim or cause of action whether based in contract, infringement, negligence, strict liability, other tort or otherwise, shall Seller's aggregate liability to Buyer and/or its customers exceed the price to Buyer of the specific goods manufactured or services provided by seller giving rise to the claim or cause of action. Buyer agrees that in no event shall Seller's liability to Buyer and/or its customers extend to include special, indirect, incidental or consequential damages. Damage to or loss of property or equipment increased costs or any kind including, but not limited to, cost

of operation or maintenance, fuel cost or cost of purchased or replacement power. The terms “consequential damages” shall include, but not be limited to, loss of anticipated profits, loss of use, loss of revenue and cost of capital.

3. TERMINATION & SUSPENSION BY BUYER: Buyer may terminate or suspend its order for any or all of the goods/services covered by the agreement, provided buyer gives seller reasonable advance written notice or such termination or suspension and reimburses seller for all losses, damages, cost and expenses arising from such termination or suspension.

X. INSPECTION: Our Quality Systems are certified to ISO 9001 standards. Additionally, the supply is covered under standard warranty clause. Should you find pre-despatch inspection necessary, we shall forward inspection call with a request to complete despatch clearance formalities within 7 days from the date of such inspection call. In case of inspection being carried out by buyer/ inspector assigned by buyer before despatch, we shall not be in a position to reserve the goods for more than 7 days from the date of our advice to you that the goods are ready. If inspection is not carried out by this time we are at liberty to despatch the material to you without inspection.

XI. POST ORDER CHANGES: We shall be able to accommodate changes in specification up to three weeks from date of your Purchase Order, subject to acceptance of mutually agreed revision in price, if called for. Beyond this period we can carry out the changes at mutually agreed price. This is valid only for orders with normal/standard lead-time products, as stated under Clause IV above. For all orders with short delivery less than or equal to 8 weeks, we will not accommodate changes in specifications and we shall apply cancellation charges up to 75% of the order value. Orders with revised specifications shall be re-negotiated with fresh deliveries, as applicable. We shall be able to accommodate changes in deferment in delivery up to three weeks from date of your Purchase Order. Subsequently, cost of carrying and storing ordered material will be reimbursed to us @ 1% per week, in case of deliveries are delayed on your account.

XII. In case material is not lifted within delivery period specified in the P.O., then inventory carrying cost @ 21% per annum shall be charged.

XIII. SHORT SHIPMENTS: Claims related to short shipment must be received at our Asangaon factory within 60 days of date of despatch/ 15 days from date of receipt. Claims received beyond this period will not be entertained / honored.

XIV. FORCE MAJEURE:A) The delivery schedule (as per IV above) shall be suitably extended if the following Force Majeure conditions affect the Vendor / Major Sub Contractors:

- Acts of GOD.
- Fires, Epidemics, Floods, Riots, Wars.
- Sabotage, Strikes, Lock-outs.
- Any Act of Government Bodies / Institutions / Law Enforcing Agencies.
- Changes in the Government's Import Policy relevant to Vendor's imported inputs.
- Any situation beyond the reasonable control of Vendor / Vendor/s major Sub Contractors.

B) Price Variation: The prices are in INR and any further impact on Customs duty and other taxes due to devaluation should be borne by the Buyer.

Price variation is not applicable for firm price purchase orders.

XV. SUPERVISION OF ERECTION AND COMMISSIONING: unless and until specified in offer, supervision of erection and commissioning is chargeable basis and validity of these charges shall be 3 months from the date of dispatch.

XVI. OTHER TERMS AND CONDITIONS: Not expressly stipulated and not commented

Standard Terms and Conditions for Customer Support

All terms and conditions mentioned herein are applicable to all Offers and Quotations submitted by Nirmal Industrial Controls Pvt Ltd. (referred as NICPL hereafter). The same are also applicable to subsequent Purchase Orders (PO) received by NICPL unless otherwise explicitly excluded in the Offer and/or subsequent Order Acceptance (OA) submitted by NICPL to the customer.

The terms and conditions are applicable for services provided by any NICPL employee. The terms and conditions are also applicable for services provided on behalf of NICPL by NICPL Sales Representatives, Service Representatives, Vendors and subcontractors.

All the terms and conditions mentioned below should be read in conjunction with each other.

1. Utilization, Accounting and Billing of Mandays

- a) Accounting of mandays during travel:
 - a. If travel time from Engineer's base location to customer site, exceeds 12 hours by Rail/Road, time for manday calculations will then be counted from the time the journey commences in either direction.
 - b. In such event, the manday will be accounted for at 50% of the manday rate offered to the customer.
 - c. This method of accounting for the mandays would also be applicable for services in which free mandays have been offered.
- b) Accounting of mandays after reporting to site:
 - a. A manday of service engineer at site would consist of eight working hrs per day (excluding lunch time) i.e. 0900 hrs – 1800 hrs. Working hours shall be counted from the time engineer has reported at customer's gate/security office.
 - b. Any extra time spent by the engineer at site on customer request or for completion of job in urgency of customer would be treated as overtime.
 - c. Overtime is payable even though manday is offered free to the customer. Alternately it can be adjusted at twice the rate against subsequent free manday on the same visit if applicable. i.e. if 4 hours overtime is used then, if one more free manday is available then it will be equivalent to ONE normal working manday used.
 - d. "Engineer Time", lost due to waiting (even in case of warranty or Free Of Cost man days, for commissioning) will be charged extra at normal applicable Service Rates to the customer. Reasons for delay will include but not limited to waiting for gate pass, vehicle (to & from the customer premises , especially in case of sites with no public transport connectivity) , availability of utilities like Nitrogen, manpower , electric power, tools and tackles , non availability of site supervisor, or any such factor which is in customer's scope, contributing to delay for the engineer.
- c) Engineer would leave the site immediately on completion of job when the job is completed in less than eight hours for that day.
- d) Mandays allocated for commissioning jobs shall be used exclusively for the said purpose. If the service engineer is asked to attend to any other problem, the same would be treated as a separate job and charged accordingly.
- e) Customer can neither use nor carry forward the unutilized "free of cost man-days" offered for a particular job. Customer will also not expect the Service Engineer to stay after job completion though free man days are available. Any other work under warranty or otherwise, will be treated as a separate job and appropriate charges, if any, will be applicable.
- f) All the free mandays or lump sum mandays shall be utilized by the customer in a single visit of the engineer (unless otherwise specifically agreed upon by NICPL in advance). In case of multiple visits requested by customer, travel charges and charges towards the travel time shall be paid by the customer.
- g) Any rate quoted by NICPL inclusive of travel costs
 - a. would be for Single visit unless otherwise specifically agreed upon
 - b. include travel only by public transport.
 - c. does not include additional costs associated with travel time (in accordance with 1a) for multiple visits or visit by Air/ Car if incurred on customer request.
- h) All service billings would be done on weekly basis for mandays consumed during the week. The billing would be done even if site work is in progress and final closure of the site has not been done by the customer.

2. Support to be Provided by the customer

- a) Customer shall give advance intimation of Seven working days for commissioning jobs or for planned preventive services. The intimation would be considered as complete only after receipt of duly filled in and signed Pre- Commissioning Check List by NICPL.
- b) If no public transport is available to reach to or from site, due to geographic location or early/late working hours, customer will, at their cost, arrange for transport to pick and drop engineer from the Hotel/Guest house.
- c) Customer shall arrange for the required number of manpower as requested by NICPL.
- d) Customer shall provide all necessary tools, PPE, tackles, lifting arrangements, utilities, power, compressed air, nitrogen and consumables at site as may be required during work.
- e) Customer shall ensure that an authorized signatory is available at the time the Service Engineer prepares the service report. If the report remains unsigned for any reason, the copy of the same will be mailed to the customer and the same will be treated as final.
- f) Customer should make all the items mentioned in the packing list available at site for commissioning.
- g) If supply is more than Six (6) months old, then customer shall check and ensure that the product is in good condition.

3. Scope of work and working Methodologies

- a) If NICPL agrees to support the customer for "Commissioning Activity" by keeping it in its scope, NICPL's scope of work would be limited ONLY to the Supervision of Commissioning Activities. Arranging various resources and tools and tackles as mentioned in section 2 above, would be in customer's scope unless otherwise clearly agreed by NICPL in its OA.
- b) Installation or erection is not in the scope of NICPL; and supervision for the same is also not in the scope unless an explicit prior agreement has been made with customer.
- c) NICPL team shall follow its own commissioning procedure. Under no circumstances, service engineers would deviate from the standard commissioning procedure on customer request.

4. Warranty

- a) NICPL shall provide warranty support to its customers for duration as mentioned in the Order Acceptance.
- b) A Warranty claim is defined as spares/ products /service provided free of cost, against malfunctioning, inadequate performance or damage of product arising out of manufacturing / design / quality defect.
- c) Any damage or malfunctioning of the product due to application issue/ improper handling/ improper installation / actual working conditions not matching with the specs (as per specifications in the data sheet) / inadequate protection/ other products installed in the system / external factors or poor storage, is not covered under warranty.
- d) For any complaint (whether under warranty or not), first attempt is made to resolve the issue by giving telephonic assistance. In case of any urgency at customer end, customer would have a choice of asking for service engineer's visit on chargeable basis. In case of problem being identified and covered as warranty claim while attending the site, the service would be offered free to the customer. In case of Air travel on customers insistence, Air fare to be paid by customer even for Warranty claim. Labor charges and spares/replacement of components would be offered free to the customer.
- e) For product that has been serviced under warranty, the warranty would be valid only as per original PO/ OA.
- f) Any service provided to the customer for non warranty jobs carries a Six Month Warranty.

5. Safety and Limitations of Liability

- a) As per NICPL company policy, our Personnel shall follow all safety guidelines for the job on hand. However, if any special guidelines are to be followed, it should be made known to NICPL before services are provided, while accepting the Contract.
- b) NICPL shall comply with all applicable national, state and local laws and regulations governing performance of the Site Services.
- c) NICPL agrees to abide by Customer rules and regulations while on Customer's premises in the course of performing Site Services and shall only work in areas designated by Customer.
- d) Customer will maintain a safe work environment for all personnel and adequate access to the Customer Site (including, if necessary, labor or lifting arrangement for loading and unloading of components) for NICPL to carry out its duties under this Agreement.
- e) Customer shall comply with all applicable national, state and local laws and regulations pertaining to Customer's Site and its operations.
- f) Customer shall ensure that the safety measures and standards at Customer's Site comply with the industry standards and will notify NICPL of any hazards associated with the Equipment or Customer's Site, including environmental hazards and toxic substances.
- g) Title and risk of loss of the Equipment shall remain with Customer at all times while this Agreement is in effect.
- h) Customer shall not levy any penalties on NICPL due to delay in scheduled services to be provided from time to time,.
- i) Subject to the following limitations, customer agrees to indemnify, defend and hold NICPL harmless for losses, damages (including reasonable attorneys fees), suits, claims and expenses which Customer may incur as a result of death or personal injury or damage to tangible property proximately caused by NICPL' negligence or willful misconduct or breach of this Agreement. Except as otherwise required by applicable law, the liability of NICPL in respect of damage to tangible property or personal injury or death shall not exceed the Annual Value of this Agreement while this Agreement is in effect, and NICPL' liability shall
 - i. not include any losses due, in whole or in part, to the negligence or willful misconduct of Customer, Customer's subcontractors or agents; and
 - ii. be subject to Customer's performance of Customer's material obligations under this Agreement.
- j) In no event shall either party be liable to the other for loss of use, loss of revenue or profits, loss of business or contracts or any indirect, special or other consequential losses and /or damages.
- k) NICPL shall not be responsible for the disposal of waste from the Customer Site or Equipment. Customer shall indemnify NICPL against any costs or damages NICPL may suffer arising from disposal of Customer equipment, machinery or process waste.
- l) Excused Non-Performance :- Neither party shall be liable for any failure or delay in performance under this Agreement (other than for delay in the payment of money due and payable hereunder) to the extent said failures or delays are proximately caused by causes beyond that party's reasonable control and occurring without its fault or negligence, including, without limitation, failure of suppliers, subcontractors, and carriers, or party to substantially meet its performance obligations under this Agreement, provided that, as a condition to the claim of nonliability, the party experiencing the difficulty shall give the other, a prompt written notice, with full details following the occurrence of the cause relied upon. Dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.
- m) Force Majeure :- Customer shall not hold NICPL liable to compensate or be penalized for any cause preventing NICPL from performing any or all of its obligations which arises from or is attributable to acts, events, omissions or accidents beyond the reasonable contemplation and control of NICPL including, without limitation, strikes, lockouts or other industrial disputes, protests, Acts of God, war, or national emergency, Acts of terrorism, riot, civil commotion, malicious damage, compliance with any law or governmental order, rule, regulation or direction, accident, breakdown of plant or machinery, fire, explosion, flood, storm, epidemic or default of suppliers or subcontractors.

PRODUCT CATALOGUE

SH4 Series - Slam Shut Off Valve

Catalog



FIGURE 1 : TYPICAL SH4 SERIES SLAM SHUT OFF VALVE

PRODUCT DESCRIPTION

Series SH4 safety shut off valve shuts off the gas flow when the pressure it is monitoring rises and reaches the set point of the slam shut valve due to any failure in the pressure regulating system. The slam shut off device has to be reset manually.

These valves are used in variety of applications like Natural gas transmission & distribution systems, fuel gas supply to industrial boilers, furnaces and mixers and commercial or industrial businesses such as steel mills, asphalt plants & shopping centers.

Additional feature includes under pressure shut off and remote signal devices option.

TECHNICAL SPECIFICATION

- **Valve size:** 1" (DN25) to 8" (DN200) (Higher sizes on request)
- **Body Rating:** 150# ,300# & 600 # (Higher ratings on request)
- **End connection :** Flanged (As per ASME B16.5)
- **Maximum Inlet pressure:** For 150# : 19.0 barg.
For 300# : 48.0 barg.
For 600# : 99.0 barg.
- **Set pressure range:**
Over pressure shut off (OPSO) : 1.0 -55.0 barg.
Under pressure shut off (UPS0) : 10.0 barg.
- **Flow capacities :** Refer Table 1
- **Temperature capabilities :** -20°C to 60°C

STANDARD MATERIAL OF CONSTRUCTION

- **Valve Body :** WCB/LCB/CF8/CF8M/CF3/CF3M
- **Pilot valve body :** Aluminum/SS 304/SS 316
- **Trim parts:** SS 316 (Standard), SS 304, SS316L, SS304L, SS 431 & Others on request.
- **Diaphragm / O ring :** Nitrile and other material on request
- **Pressure setting Adjustment :** Adjustment can be done throughout the spring range by turning the adjusting set screw of pilot
- **Pressure Registration :** External from downstream control line

PRODUCT HIGHLIGHTS

- **Tight shut off capability:** Special trim design eliminates wear and erosion of seating, providing excellent tight shut off over long working life.
- **Easy to Maintain:** Easy replacement of internal parts without dismantling the main valve body from Pipeline.
- **Manual re-setting** possible with the assistance of lever mechanism.
- **Built in Pressure Equalization**
- **Local position indication:** Open/Close position indicator indicates slam shut off valve position.
- **Remote Signal devices option:** Slam shut off can be provided with remote signal devices (like contact switches or proximity switches).
- **Certifications :** EN 14382
PED 97/23/EC (CE Marking)
Certificate no.: CE-PED-B-NIC 001-07-IND
& CE-PED-B-NIC 001-09-IND

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OPERATING PRINCIPLE

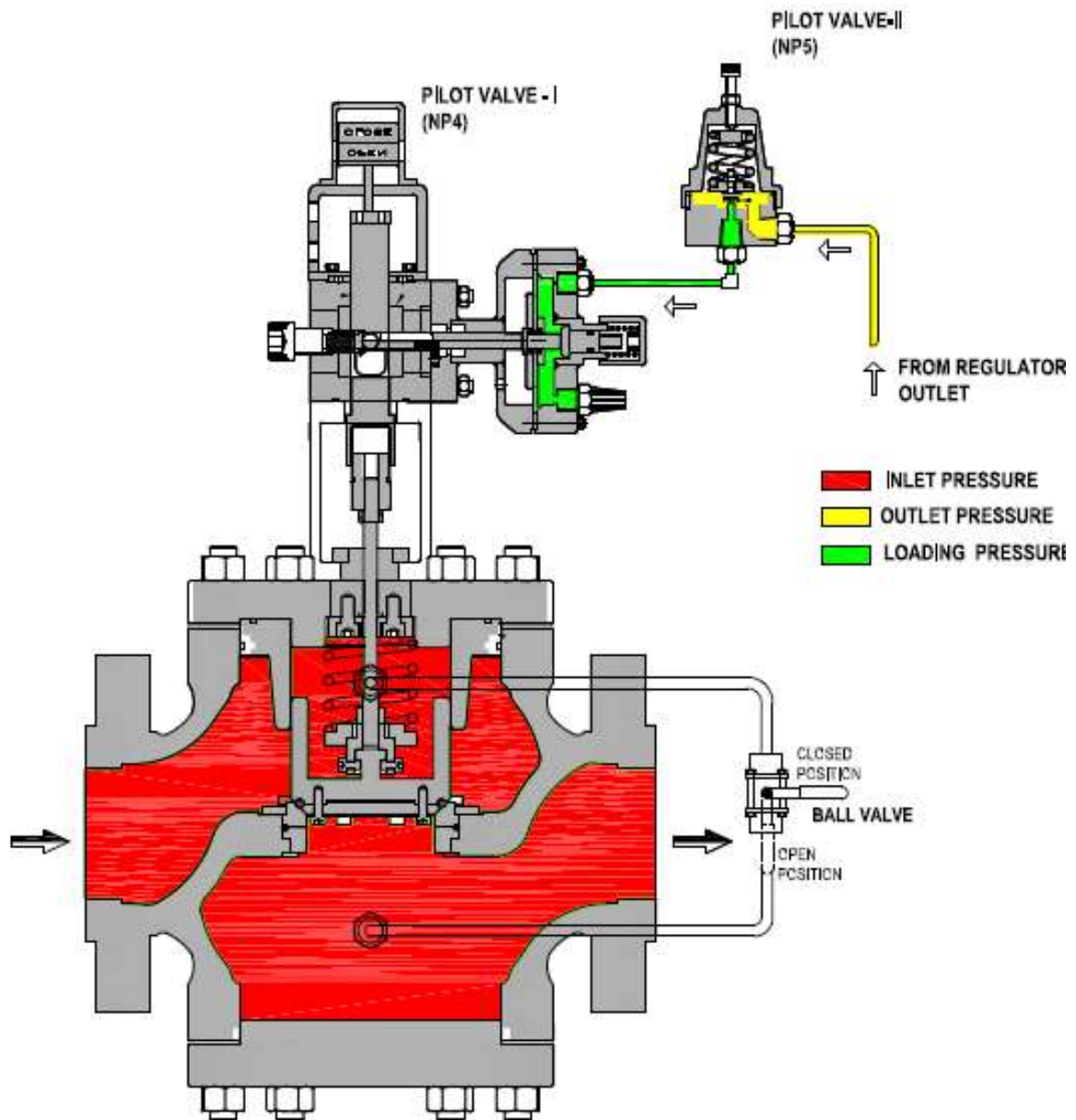


FIGURE 2: TYPICAL SECTIONAL VIEW OF SH4 SERIES SLAM SHUT OFF

The SH4 Series Slam shut off valve comprises of main valve body, control mechanism (Pilot-I) and sensing element (Pilot-II). The main valve body is connected in the main line. The control mechanism (Pilot-I) is having latching arrangement that hold the main valve stem in open position. The sensing element is pilot regulator (Pilot-II) which continuously monitors the line pressure which is to be safeguarded. This pilot is spring loaded diaphragm type valve and in case of over-pressurization it gives signal pressure to control mechanism which in turn trips off

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TABLE 1 : FLOW CAPACITIES

Valve Size	1" (DN 25)	2" (DN 50)	3" (DN 80)	4" (DN 100)	6" (DN 150)	8" (DN 200)
Port Size "mm"	25.0	50.0	75.0	100.0	150.0	200.0
Cg Value	550	2220	4700	7800	16400	26000

CAPACITY INFORMATION

To determine the flow capacity of gases through the valve, use equation (a)

$$(a) \quad Q = \frac{13.57}{\sqrt{d(tu+273)}} \times C_g \sqrt{P_d \times \Delta P}$$

To find out the pressure drop across the valve at known flow, use equation (b)

$$(b) \quad \Delta P = \left[\frac{Q}{13.57 \times C_g} \right]^2 \times \frac{d(tu + 273)}{P_d}$$

Where;

Q = Flow in Normal M3/Hr

P_d = Inlet Pressure in Bar Abs.

ΔP = Pressure drop in Bar

d = Specific Gravity of Gas w.r.t. Air

tu = Temperature at the inlet in °C

C_g = Flow co-efficient of valve available in Table 1

TYPICAL INSTALLATION OF SH4 SERIES SLAM SHUT OFF VALVE

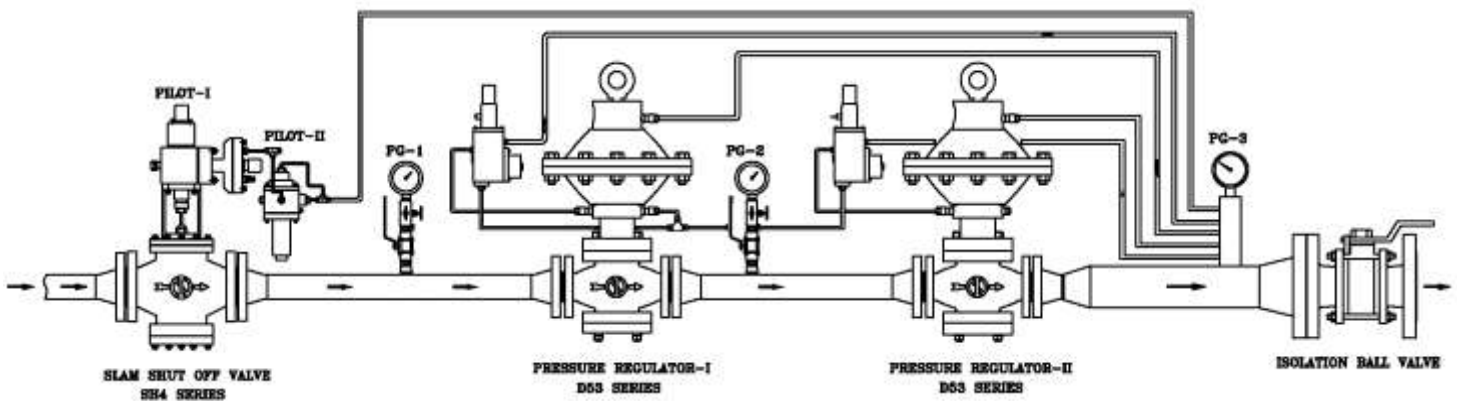


FIGURE 3: TYPICAL INSTALLATION

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Series SH4 Model Configuration

SH4/PN 2 3 080F1 1 1 1 NE

Model	Code
SSV - Over Pressure Shut off – EN	SH4/O
SSV - Over & Under Pressure – EN	SH4/P
SSV - With Remote Signal Devices – EN	SH4/Q
SSV - With Remote Signal Devices with UPSO – EN	SH4/UQ
SSV - Over Pressure Shut off	SH4/ON
SSV - Over & Under Pressure	SH4/PN
SSV - With Remote Signal Devices	SH4/QN
SSV - With Remote Signal Devices with UPSO	SH4/UQN

SET PRESSURE RANGES (OPSO)	Code
1.0 - 5.0 Barg.	1
5.0 - 10.0 Barg.	2
6.0 - 15.0 Barg.	3
10.0 - 25.0 Barg.	4
24.0 - 55.0 Barg.	5
Others	0

SET PRESSURE RANGES (OPSO)	SET PRESSURE RANGES (UPSO)	Code
1.0 - 5.0 Barg.	0.5 - 2.0 Barg.	1
1.0 - 5.0 Barg.	1.5 - 6.0 Barg.	2
6.0 - 10.0 Barg.	0.5 - 60.0 Barg.	3
5.0 - 10.0 Barg.	1.5 - 6.0 Barg.	4
6.0 - 15.0 Barg.	4.0 - 10.0 Barg.	5
10.0 - 25.0 Barg.	4.0 - 10.0 Barg.	6
24.0 - 55.0 Barg.	10.0 - 25.0 Barg.	7
Others	Others.	00

Regulator Size	Code
25 NB	025
40 NB	040
50 NB	050
80 NB	080
100 NB	100
150 NB	150
Others	000

Ratings	Code
Flanged end ANSI B16.5-150# (Inlet max. 19 Barg)	F1
Flanged end ANSI B16.5-300# (Inlet max. 48 Barg)	F3
Flanged end ANSI B16.5-600# (Inlet max. 99 Barg)	F6

Body MOC	Code
A216 Gr. WCB	1
A352 Gr. LCB	2
Others	0

INTERNAL TRIM MOC	Code
A479 Gr. SS316	1
A479 Gr. SS304	2
Others	0

POLYMER MOC	Code
Nitrile	1
OTHERS	0

SPECIAL REQUIREMENT	CODE
None	
NACE	NE
Radiography Casting	RT
In-Built PG	1

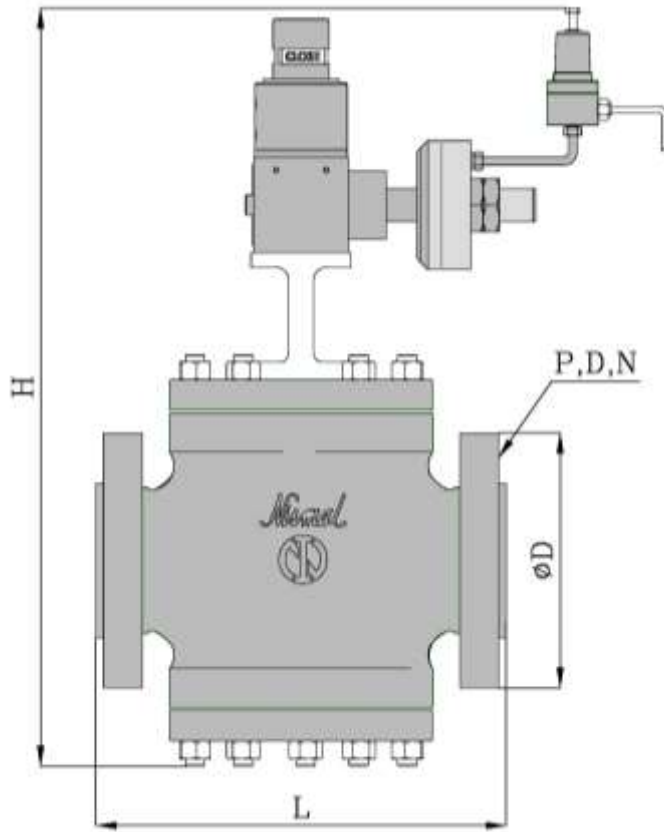
Model Example & Its Description:

SH4/PN2080F1111 NE: Slam Shut Off Valve With Over & Under Pressure Cut Off. / Size - 80NB / 150# / Set Pr. Range (OPSO / UPSO) 1.0 - 5.0 Barg & 1.5 - 6.0 Barg / A216 Gr.WCB Body / SS316 Trim / Polymers – Nitrile / NACE

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DIMENSIONS & WEIGHTS



NOTES :

- P = PCD. (PITCH CIRCLE DIAMETER)
- D = DIAMETER OF BOLT HOLES
- N= NUMBER OF BOLT HOLES
- ALL DIMENSIONS ARE IN MM (MILLIMETERS)
- FLANGE DIMENSIONS ARE AS PER ASME B16.5
- FACE TO FACE DIMENSIONS ARE AS PER EN 14382

Table 2 : Dimensions 150# Rating

Valve size	DN	L	H	ΦD	P	D	N	Weight
1"	25	184	500	108	79.4	16	4	34
2"	50	254	580	152.2	120.6	19	4	40
3"	80	298	620	190.4	152.4	19	4	55
4"	100	352	650	228.6	190.5	19	8	72
6"	150	451	850	279.4	241.3	22.2	8	150
8"	200	543	940	342.9	298.45	22.2	8	180

Table 3 : Dimensions 300# Rating

Valve size	DN	L	H	ΦD	P	D	N	Weight
1"	25	197	500	123.6	89	19	4	38
2"	50	267	580	165	127	19	8	48
3"	80	317	620	209.5	168.3	22.2	8	72
4"	100	368	650	254	200.1	22.2	8	85
6"	150	473	850	317.5	269.7	22.2	12	190
8"	200	568	940	381.0	330.2	25.4	12	220

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Table 4 : Dimensions 600# Rating

Valve size	DN	L	H	ΦD	P	D	N	Weight
1"	25	210	500	124.0	88.9	19.05	4	45
2"	50	286	580	165.1	127.0	19.05	4	60
3"	80	337	620	209.6	168.1	22.2	8	100
4"	100	394	650	273.1	215.9	22.2	8	130
6"	150	508	850	355.6	292.1	22.2	12	200
8"	200	610	940	419.1	349.3	25.4	12	240

ENQUIRY SPECIFICATION

- Line pressure
- Service fluid
- Flow Min./Max.
- Set pressure
- Line size & Rating
- Maximum temperature
- Specific gravity
- Permissible pressure drop

For any assistance contact us, on details as given under,



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