



# SPAN FORGING PVT. LTD.

Manufacturers of : Steel Forging, CNC Turned Components & Gears

Works : Village - Tatarpur (Near Prithla) Teh. Palwal, Distt. Faridabad, Cell : 9810010535

Ref. No.....

Date.....

## TEST REPORT

Issued to: M/s Nov Sara India Pvt Ltd.  
7/1, Pritam Road, Unit-II  
Dehradun-248001

Report No.  
183

D.O.T.

4/23/2011

D.O.R

4/19/2011

Sample Description  
TEST SAMPLE

Sample No.  
5959

Heat No.

P-10

## RESULTS

Chemical Analysis  
By Spectrometer

Sample ID

J.O No.

| Element    | %      |
|------------|--------|
| Carbon     | 0.0695 |
| Silicon    | 0.509  |
| Sulphur    | 0.0094 |
| Phosphorus | 0.0037 |
| Manganese  | 1.44   |
| Nickel     | 10.54  |
| Chromium   | 16.56  |
| Molybdenum | 2.2    |
| Vanadium   | 0.0719 |
| Copper     | 0.367  |
| Tungsten   |        |
| Cobalt     | 0.196  |
| Aluminium  | 0.0074 |
| Titanium   | 0.0181 |
| Iron       | 67.90  |

Checked By  
Arun Mishra



1. The result listed refer only to the tested samples and applicable parameters. Endorsement of product is neither inferred nor implied.
2. Total Liability of our Laboratory is limited to the invoiced amount. No liability will be accepted after the sample is taken back.
3. The report can not be used as an evidence in a court of law.
4. Samples will be destroyed after 15 days.
5. Any Complaints about this report should be communicated within 7 days of issue of this report.
6. This report shall not be reproduced except in full, without the written permission of the Laboratory.
7. \*Not Covered under NABL Scope.



# PARVATI LTD.

Regd Office & Works : 27, Rajasthani Udyog Nagar, G. T. Karnal Road,  
NEW DELHI - 33, Phone : 91 - 11 - 27691481, 1282, 1283 Fax : 91 - 11 - 27691909

## TEST CERTIFICATE

Customer Name & Destination :  
**M/S NOV SARA INDIA(P)LTD.** T.C.NO.:P-851 Date :09.03.11 ORDER NO : VERBAL

| Material Specification | Manufacturing Route | Supply Condition | Size   | PCS | Colour Code                          | Weight (Mt)  |
|------------------------|---------------------|------------------|--------|-----|--------------------------------------|--------------|
| AISI-316               | INDUCTION FURNACE   | AS CAST          | 4X5X44 | 92  | BLUE+WHITE(P-10)<br>BLUE+YELLO(P-11) | 4480<br>4885 |

### CHEMICAL ANALYSIS IN PERCENTAGE

| ELEMENTS      |          | C    | Mn   | Si  | S    | P    | Cr    | Ni    | Mo   | N     | NB | Size   | Pes. |
|---------------|----------|------|------|-----|------|------|-------|-------|------|-------|----|--------|------|
| Specification | Min.     |      |      |     |      |      |       |       |      |       |    |        |      |
|               | Max.     |      |      |     |      |      |       |       |      |       |    |        |      |
| Heat No.      | Grade    |      |      |     |      |      |       |       |      |       |    |        |      |
| P-10          | AISI-316 | .058 | 1.46 | .50 | .017 | .034 | 16.50 | 10.04 | 2.04 | .0641 |    | 4X5X44 | 46   |
| P-11          | AISI-316 | .064 | 1.40 | .48 | .019 | .031 | 16.60 | 10.06 | 2.05 | .0650 |    | 4X5X44 | 46   |
|               |          |      |      |     |      |      |       |       |      |       |    |        |      |
|               |          |      |      |     |      |      |       |       |      |       |    |        |      |

ULTRASONIC TESTING  
ACC. STD : 6mm FBH

REMARKS : NA

### MECHANICAL PROPERTIES : TEST STD ASTM A370

|        | Test Condition | UTS (N/MM <sup>2</sup> ) | YS (N/MM <sup>2</sup> ) | % EL | % RA | Hardness (BHN) |      |
|--------|----------------|--------------------------|-------------------------|------|------|----------------|------|
|        |                |                          |                         |      |      | Min.           | Max. |
| SPEC   | -              | -                        | -                       | -    | -    |                |      |
| RESULT | -              | -                        | -                       | -    | -    |                |      |

### METALLURGICAL TEST RESULT

Grain Size  
E 112

### IMPACT TESTING :

Test Temp : Test Std :

### INCLUSION RATING ASTM E - 45

| Sr. No | Impact Energy (J) | Average |
|--------|-------------------|---------|
|--------|-------------------|---------|

|       | A | B | C | D |  |  | 1 | - | - |
|-------|---|---|---|---|--|--|---|---|---|
| Thin  | - | - | - | - |  |  | 2 | - | - |
| Thick | - | - | - | - |  |  | 3 | - | - |

### JOMINY HARDENABILITY : ASTM - 3848

### MACROSTREAK FLAW TEST (IS - 4075)

| DIST mm/Inch | J | J | J | J | J | J | Marco Test (ASTM E - 381) | 1 <sup>st</sup> Step | 2 <sup>nd</sup> Step | 3 <sup>rd</sup> Step |
|--------------|---|---|---|---|---|---|---------------------------|----------------------|----------------------|----------------------|
| ACTUAL HRC   |   |   |   |   |   |   |                           |                      |                      |                      |

### Visual Inspection :

#### remarks

- Impact testing as per dinen 10015 - 1
- Ultrasonic testing as per astm a 388
- Material is free from residual radioactive elements.
- Lead not added during manufaturin.
- Steel has been manufactured in mercury free environment.

For Parvati Ltd.

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WE CONFIRM THAT THE TEST  
CERTIFICATE FINDINGS ARE  
CORRECT & RESULTS ARE  
AS PER STANDARD /  
CUSTOMER'S REQUIREMENTS



Chemist

Authorized Signatory (Q.C.)