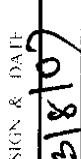
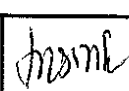
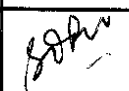
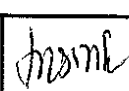
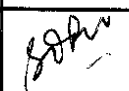
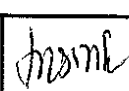
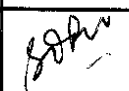
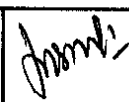
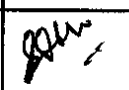
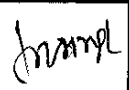
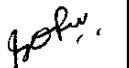


दिनांक: 07/07/2007 SIGN & DATE		उत्पाद मानक STEAM TURBINE ENGINEERING PRODUCT STANDARD	ST46056 पृष्ठ का Page 02 of 07																																		
SUPERSEDES INVENTORY NO. समीची सूची संख्या को अधिकृत करता है	5.0 DESIGN, MATERIAL & CONSTRUCTION OF FILTER :- <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">a) Filter element</td> <td colspan="3">: Wire cloth of 25 micron to 40 micron</td> </tr> <tr> <td></td> <td colspan="3">: Material Stainless Steel</td> </tr> <tr> <td></td> <td colspan="3">: Pleated type filter Elements are not acceptable</td> </tr> <tr> <td></td> <td colspan="3">: Elements shall be cleanable type for reuse.</td> </tr> <tr> <td>b) Filter body</td> <td style="text-align: center;">⌘</td> <td colspan="2">: Seamless pipe ASTM A 106 Gr. B or equivalent for var .01, 02, 03, 05, 06, 08 and ASTM A 105 or equivalent for var. 04 & 07.</td> </tr> <tr> <td rowspan="3">c) Change over Valve</td> <td>: Type</td> <td colspan="2">Ball valve</td> </tr> <tr> <td>: Body Material</td> <td colspan="2">ASTM 216 Gr. B or equivalent</td> </tr> <tr> <td>: Internals</td> <td colspan="2">Stainless Steel</td> </tr> <tr> <td>d) Sealings</td> <td colspan="3">: VITON</td> </tr> </table> Materials of other components shall be selected by the bidder. The materials of construction of filter shall be such as to resist corrosion & erosion and shall give a long trouble free service. No cast iron components shall be acceptable. BHEL/owner reserves the right to ask for changes in material. At suitable points on filter, lifting lugs shall be provided for ease of transportation & erection. Their locations must be shown on the dimensional drawings. Each side of the filter shall be provided with a vent connection suitable for pipe thread R1/4" and a drain connection suitable for pipe thread R1/2" for var. 01, 04 & 07 and R1" for var. 02, 03, 05, 06 & 08. Vent connections should necessarily be provided on the sides of each filter chamber top flange to facilitate removal of filter cover for cleaning / maintenance without removal of vent piping connected to this connection. Priming line with a valve shall be provided between two filter chambers. The filter as per var. 01, 02, 03, 05, 06, 08 is envisaged to be mounted in a tray and the distance between legs of filter shall be above inlet connection. Other dimensions shown in the sketch are binding. The filter as per var. 04 & 07 shall be provided with suitable arrangement to support it with Main Oil Tank /steel structure.			a) Filter element	: Wire cloth of 25 micron to 40 micron				: Material Stainless Steel				: Pleated type filter Elements are not acceptable				: Elements shall be cleanable type for reuse.			b) Filter body	⌘	: Seamless pipe ASTM A 106 Gr. B or equivalent for var .01, 02, 03, 05, 06, 08 and ASTM A 105 or equivalent for var. 04 & 07.		c) Change over Valve	: Type	Ball valve		: Body Material	ASTM 216 Gr. B or equivalent		: Internals	Stainless Steel		d) Sealings	: VITON		
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6.0 QUALITY ASSURANCE, INSPECTION AND TESTINGS :																																					
6.1 The bidder shall submit quality plan along with his offer format for BHEL/Owner's approval. 6.2 The particulars of the proposed shop tests and procedures for the tests shall be submitted to BHEL/Owner for approval along with Quality Plan. 6.3 The filter shall be dispatched only after inspection, approval of test certificates and clearance from BHEL/Owner. 6.4 Wherever welding is involved, it is to be carried out by qualified welders and weld procedures are to be qualified as per ASME code section-IX. 6.5 The minimum tests/checks to be carried out on the Duplex Oil Filter are given below. BHEL/Owner reserves the right to ask for any more checks at the time of Quality Plan finalisation. 6.5.1 Testing of materials: The material of body, spindle, disc seat, filter elements etc. shall be tested as per relevant standard for its chemical composition, mechanical properties viz. YS. UTS, impact, %age elongation, reduction in areas etc and NDT . The test certificates for all the tests indicating actual test results should be furnished. Supplier shall give the type and details of NDT to be carried out along with the offer. Material certificate of conformance & acceptable in case of M/s hydac & M/s EPE & BOLL & KIRCH. * Ductile cast iron (EN-GJS-400-18)																																					
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	स्वत्वाधिकार एवं गोपनीय इस दस्तावेज में दी गई सूचना भारत भारती इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रयोग केवल उद्देश्य के बिना अन्य किसी भी उद्देश्य के लिए न किया जाए।	दिनांक एवं प्रारूप SIGN & DATE 	समीची सूची संख्या INVENTORY NO. P-5136																																		
REV. NO. 03		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">निर्माणकर्ता WORKED BY</td> <td style="width: 20%;">M.SINGH</td> <td style="width: 20%; text-align: center;">  </td> <td style="width: 40%; text-align: center;">31/7/07</td> </tr> <tr> <td>जांचकर्ता CHECKED BY</td> <td>SDR.</td> <td style="text-align: center;">  </td> <td style="text-align: center;">31/7/07</td> </tr> </table>		निर्माणकर्ता WORKED BY	M.SINGH		31/7/07	जांचकर्ता CHECKED BY	SDR.		31/7/07																										
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दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद मानक STEAM TURBINE ENGINEERING PRODUCT STANDARD		ST46056	
				पृष्ठ का Page 03 of 07	
समीची सूची संख्या का INVENTORY NO	6.5.2 All butt welds shall be subjected to 10% RT and all fillet welds to 100% MPI. All welding Shall be carried out by qualified procedures and welders.				
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	6.5.3 Following tests shall be carried out during various stages of manufacturing at bidder's works :-				
	a) Check for dimensions of all the component. b) <u>Hydraulic Test</u> : The body of filters shall be tested at one and half times the design Pressure in fully assembled condition for 5 mts. c) <u>Seat leakage test</u> : It shall be carried out at the design pressure for 5 minutes. Acceptance norms shall be nil leakage. d) <u>Functional Test</u> : It shall demonstrate smooth operation of change over valve. e) <u>Verification of mesh size of element</u> : By recognised lab. f) <u>Collapsibility Test</u> : A type test at a differential pressure of 5.0 kg/cm ² for var 01,02,03,05,06 & 160.0 kg/ cm ² for variant 04 & 07. This test shall be conducted as per ISO : 2941. g) <u>Pressure Drop Test</u> : As per ISO 3968. The pressure drop in clean condition should not exceed 0.4kg/cm ² including change over valve. This is type test.				
स्वत्वधिकार एवं गोपनीय इस दस्तावेज में दी गई सूचना भारत भारी इलेक्ट्रिक लि. की संपत्ति है। इसका प्रयोग बिना भारत भारी इलेक्ट्रिक लि. की लिखित अनुमति के बिना नहीं किया जा सकता है।	7.0 <u>DOCUMENTS:</u>				
	A. <u>Along with offer</u> : i) Detailed catalogue with electrical contact rating. ii) Assembly drawing with part lists, material of each part, nozzle sizes & their coordinates, leg spacing, cross sectional arrangement incorporating overall dimensions. iii) Pressure loss curve for normal flow at different flow areas. iv) Details of priming connection, change over valve, differential pressure switch, flow direction indicator, etc. v) Quality plan. vi) Testing procedures. vii) List of commissioning spares which will include one set of all type of seals/gaskets & one filter element. viii) List of spares for 5 years of operation. ix) List of special erection/maintenance tools. x) Type test certificate for collapsibility test and pressure drop test shall be submitted alongwith the offer.				
दिनांक एवं हस्ताक्षर SIGN & DATE	B. <u>After Placement of order</u> i) Documents listed at 7.0(A) above (for approval) 4 weeks ii) O & M instructions 12 weeks iii) Instruction on conservation and deconservation. 12 weeks				
	No. of copies shall be specified at the time of ordering. However if not specified, 10 copies shall be furnished by the bidder.				
समीची सूची संख्या INVENTORY NO	C. <u>Along with Dispatch</u> i) Detailed catalogue ii) Calibration & test certificates iii) Guarantee certificate iv) Type test certificate for degree of protection				
	REV. NO. 03				
समीची सूची संख्या INVENTORY NO	P-5136	निर्माणकर्ता WORKED BY	M.SINGH		31/7/07
		जांचकर्ता CHECKED BY	SDR.		31/7/07

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद मानक STEAM TURBINE ENGINEERING PRODUCT STANDARD	ST46056 पृष्ठ का Page 04 of 07								
SUPERSEDES INVENTORY NO. सामग्री सूची संख्या को अधिकृत किया जाएगा है	8.0 IDENTIFICATION : The name plate of filter shall have following information i) Type/Designation : Duplex filter ii) Tag no. <table border="1" style="margin-left: 100px; border-collapse: collapse; text-align: center;"> <tr> <td>Var.</td> <td>01 & 05</td> <td>02,03,06&08</td> <td>04 & 07</td> </tr> <tr> <td>Tag no.</td> <td>MAV43 BT001</td> <td>MAV42 BT001</td> <td>MAV35 BT001</td> </tr> </table> iii) Nominal size of inlet / outlet nozzles iv) Press loss (in cleaned condition) v) Manufacturer's name vi) Medium vii) Purchase order no. viii) Month & year of manufacture			Var.	01 & 05	02,03,06&08	04 & 07	Tag no.	MAV43 BT001	MAV42 BT001	MAV35 BT001
Var.	01 & 05	02,03,06&08	04 & 07								
Tag no.	MAV43 BT001	MAV42 BT001	MAV35 BT001								
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company	9.0 CLEANING, PAINTING, CONSERVATION & PACKING : The bidder shall give exact and precise details about the measures envisaged by him for surface protection. Painting of interior surface coming in contact with oil is prohibited. After testing of filter its internals shall be thoroughly cleaned, dried and conserved before packing. conservation shall be suitable for storing in saline atmosphere & for a period of 2 years before use. Filter shall be suitably packed for transportation. Instruction should be issued regarding reconsevation, deconsevation and storage of package										
स्वातंत्र्याधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रलेख एवं आलेख रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	10.0 GENERAL : The bidder can make suitable offers even if there are minor deviations which do not effect the efficient functioning of the equipment. However the deviation must be clearly spelt the same along with the offer. The offer may not be considered if all the technical particulars and information called for in the specification are not submitted along with the offer.										
दिनांक SIGN & DATE 13/18/07	11.0 GUARANTEE : i) The supplier shall guarantee trouble free and satisfactory operation of the equipment for a period of 18 months after delivery or 12 months after commissioning whichever is earlier. ii) The bidder shall guarantee the quality of filtration & pressure loss in cleaned and saturated conditions. iii) If during erection / commissioning at site and deficiency in parts is detected. BHEL site office shall prepare the assessment report and copy of the same shall be forwarded to the bidder. The bidder shall replace / rectify the concerned items free of charge. The bidder if he so desires may depute his representative to site at his own cost with in one week after receipt of the above report, shall be final & binding on bidder of Duplex filter.										
सामग्री सूची संख्या INVENTORY NO. P-5136	12.0 DESPATCH : The equipment along with all accessories shall be dispatched to a destination to be specified after the placement of order.										
REV. NO. 03		निर्माणकर्ता WORKED BY M.SINGH	जांचकर्ता CHECKED BY SDR								
											
		31/7/07	31/7/07								

निर्माक एवं हस्ताक्षर SIGN & DATE		उत्पाद मानक		ST46056	
निर्माक एवं हस्ताक्षर SIGN & DATE		STEAM TURBINE ENGINEERING PRODUCT STANDARD		पृष्ठ का Page 05 of 07	
सामग्री सूची संख्या INVENTORY NO.		ANNEXURE-1			
सामग्री सूची संख्या को अधिकृतित करता है		DIFFERENTIAL PRESSURE SWITCH CUM INDICATOR :			
सामग्री सूची संख्या INVENTORY NO.		1.0 The differential pressure switch shall consist of a calibrated indicator for indicating the differential pressure across each filter basket. Switch with electrical contacts shall be actuated when the differential pressure reaches preset value.			
सामग्री सूची संख्या को अधिकृतित करता है		2.0 The differential pressure switch shall be suitable for Ambient temperature : 0-60°C and Relative humidity : 95%			
सामग्री सूची संख्या को अधिकृतित करता है		3.0 Housing : Body material : Die cast aluminum alloy or stainless steel Degree of protection : IP 65 External surface : Finished with staving enamel			
सामग्री सूची संख्या को अधिकृतित करता है		4.0 Sensing element type : Diaphragm/piston			
सामग्री सूची संख्या को अधिकृतित करता है		5.0 Material of sensing element and other parts : Stainless steel AISI 304 or equivalent in contact with the service medium			
सामग्री सूची संख्या को अधिकृतित करता है		6.0 Differential pressure range : 0-1.2 kg/cm ² for var. 01,02,03,05,06 & 08 0-6 kg/cm ² for var. 04 & 07			
सामग्री सूची संख्या को अधिकृतित करता है		7.0 Max. static pressure : one and half times design pressure			
सामग्री सूची संख्या को अधिकृतित करता है		8.0 Set point adjustment : The switching point shall be adjusted to operate at 0.9 kg/cm ² in pressure increasing direction for var. 01, 02, 03, 05, 06 & 08 .for var. 04 & 07 the switching shall be set at 4.2 kg/cm ² . However, the set point for variants shall be adjustable over the specified differential pressure range. There shall be proper facility with suitable lockable arrangement for set point adjustment.			
सामग्री सूची संख्या को अधिकृतित करता है		8.1 Switching repeatability : ± 1% of differential pressure range			
सामग्री सूची संख्या को अधिकृतित करता है		8.2 Accuracy : Equal or better than ± 2% at mid 50% of differential pressure range			
सामग्री सूची संख्या को अधिकृतित करता है		9.0 Electrical contact : Contact type : Snap action micro switch / Reed contact Contact material : Silver plated Contact rating : 0.25A / 120 V AC, 3W/ DC No. of Contact s : 1 No. change over type i.e. 1 SPDT Contact life : approx. (10) ⁶ switching cycles.			
सामग्री सूची संख्या को अधिकृतित करता है		10.0 Electrical connection : Cable entry shall be provided with cable gland complete with neoprene grommet. Terminals shall be suitable for cable termination of 0.5 mm ² cable core cross section.			
सामग्री सूची संख्या को अधिकृतित करता है		11.0 Identification Tag : In addition to the instrument name plate, one separate stainless steel tag punched with tag no. MAV 43 CP 011 for variants 01 & 05, MAV 42 CP 013 for var. 02, 03, 06 & 08 and MAV 35 CP 016 for var. 04 & 07 shall be fastened with the switch, if not possible to engrave on instrument name plate.			
सामग्री सूची संख्या INVENTORY NO.		REV. NO.		निर्माककर्ता WORKED BY	
P-5136		03		M.SINGH	
P-5136		03		जांचकर्ता CHECKED BY	
P-5136		03		SDR.	
P-5136		03		3/7/07	
P-5136		03		3/7/07	

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद मानक STEAM TURBINE ENGINEERING PRODUCT STANDARD		ST46056	
सामग्री सूची संख्या को अधिकृतित करता है		SUPERSEDES INVENTORY NO		पृष्ठ का Page 06 of 07	
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		12.0 Hydraulic impulse connection details = R1/4 DATA SHEET TO BE FURNISHED BY THE BIDDER OF DUPLEX FILTER 1.0 a) Differential pressure switch cum indicator Yes/ No b) Connected piping & valve Yes/ No 2.0 Priming valve & piping Yes/ No 3.0 Legs, flange connections & other dimensions as per sketch Yes/ No 4.0 Contract drawings & curves Yes/ No 5.0 Commissioning spares, O & M spares for five years of operation Yes/ No 6.0 Special erection/ Maintenance tools Yes/ No 7.0 Quality of filtration Micron's 8.0 Pressure loss at normal flow : a) In cleaned condition mm wc i) In the filter ii) In the valve b) In saturated condition (50% choked condition) mm wc 9.0 Material of components as per clause-5 Yes/ No 10.0 Weight of filter kg 11.0 Tests to be carried out : a) Chemical composition & Mechanical properties of components mentioned in clauses – 5 Yes/ No b) NDT Yes/ No c) Hydraulic test of body (filter & valve) Yes/ No d) Functional test Yes/ No e) Collapsibility test Yes/ No f) Mesh size verification from recognized lab Yes/ No g) Pressure drop test Yes/ No 12.0 Gross filtering area mm ² 13.0 Net filtering area mm ² LIST OF CROSS REFERRED STANDARD ——— NEXT PAGE.			
स्वत्वाधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत की इलेक्ट्रिकल्स की संपत्ति है। इसका प्रयोग एवं प्रसारण केवल इसी की लिखित परमिशन के बिना किये जाने की आवश्यकता है।		दिनांक एवं हस्ताक्षर SIGN & DATE 13/6/07		सामग्री सूची संख्या INVENTORY NO P-5136	
REV. NO. 03		निर्माणकर्ता WORKED BY M.SINGH		जांचकर्ता CHECKED BY SDR	
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SUPERSEDES INVENTORY NO.		पृष्ठ का Page 07 of 07																																													
सामग्री सूची संख्या को अधिकृतित करता है		Cross referred standard:- IS:1012-1978 ISOV 46 ! ISO 2941, ISO 3968 AISI-321/316																																													
DIMENSIONS ARE INDICATIVE ONLY NOT BINDING																																															
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>08</td><td>150</td><td>1120</td><td>560</td><td>255</td><td>23</td><td rowspan="6">DIN 2633</td></tr> <tr> <td>06</td><td>200</td><td>1180</td><td>560</td><td>285</td><td>23</td></tr> <tr> <td>05</td><td>125</td><td>890</td><td>560</td><td>235</td><td>23</td></tr> <tr> <td>03</td><td>200</td><td>1315</td><td>560</td><td>285</td><td>23</td></tr> <tr> <td>02</td><td>125</td><td>890</td><td>560</td><td>235</td><td>23</td></tr> <tr> <td>01</td><td>100</td><td>785</td><td>320</td><td>235</td><td>18</td></tr> <tr> <td>VAR. NO.</td><td>nb</td><td>A</td><td>B</td><td>C</td><td>d</td><td>FLANGE DETAILS</td></tr> </table>				08	150	1120	560	255	23	DIN 2633	06	200	1180	560	285	23	05	125	890	560	235	23	03	200	1315	560	285	23	02	125	890	560	235	23	01	100	785	320	235	18	VAR. NO.	nb	A	B	C	d	FLANGE DETAILS
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02	125	890	560	235	23																																										
01	100	785	320	235	18																																										
VAR. NO.	nb	A	B	C	d	FLANGE DETAILS																																									
<u>DUPLEX FILTER</u>																																															
स्वत्वधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स की सम्पत्ति है इसका प्रलेख एवं आप्रलेख का से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company	निरमाणकर्ता WORKED BY M.SINGH	जांचकर्ता CHECKED BY SDR.																																												
दिनांक एवं दिनांक SIGN & DATE 13/8/17	सामग्री सूची संख्या INVENTORY NO. P-5136	REV. NO. 03	31/7/07 31/7/07																																												

ADDENDUM TO BHEL SPEC ST 46056 REV-03

Item: DUPLEX FILTER (L.O) AS PER VAR 06 OF SPEC ST 46056

Project: DOLVI JSW (1x250 MW)

GeM Enquiry: GEM/2025/B/6529982 dt 04.08.2025

REFER TO ANNEX-1 AT PAGE NO. 05 OF 07: DIFFERENTIAL PRESSURE TRANSMITTER IS REQUIRED INSTEAD OF DP SWITCH.

SPECIFICATION OF DIFFERENTIAL PRESSURE TRANSMITTER:

1. RANGE: 0-2 BAR
2. ACCURACY: 0.5%
3. STABILITY: + & -0.25% FOR 10 YEARS
4. Any other accessories - Mounting bracket, adapter/fittings, connecting tubing & valve etc. (compatible with process connection of Filter) required for transmitter mounting, to be supplied along with transmitter
5. KKS TAG FOR BOTH DPT (EACH BASKET) SHALL BE MAV42CP013 & MAV42CP015

Deepak Goyal.
Sr. Mgr/CE
07/08/2025
(Approved By)

(Vendor Sign)

	STEAM TURBINE ENGINEERING BHEL, HEER, HARIDWAR INDIA		Dolvi 250 MW	
			REV. - 00	DATE: 15.07.25

TURBINE INTEGRAL AUXILIARIES

Painting Scheme .

Paint (Coat)	Paint Type	No. of coat	DFT*
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Primer Paint	: Epoxy base Zinc rich primer paint	1 Coat	35
Intermediate Paint	: Epoxy TiO ₂ Pigmented Polyamide Cured Paint	1 Coat	70
Finish (Final) Paint	: Aliphatic Acrylic 2 Pack Polyurethane Finish paint	2 Coats	75
		Total DFT	180

* DFT – Dry Film Thickness (final) in microns.

Details of Color Scheme :

(Legend : W-at BHEL works; V- at vendor's works; S-at site; NA-Not applicable)

No	Assembly	Shade/ RAL	Primer	Int. Paint	Final Paint	Touch -up	Remarks
20	Duplex Filter (Lub oil)	Grey 9002	V	V	V	S	BOI Identification Tag/Band of White 9010 color. Legend in black letters.
21	Duplex Filter (Jacking Oil)	Grey 9002	V	V	V	S	BOI Identification Tag/Band of White 9010 color. Legend in black letters.

Surface Preparation: -

1. It is necessary that the surface to be painted is free from loose dust, mill scale, rust, grease, oil, old film etc. Surface cleaning and preparation shall be done for all the components as per BHEL/Vendor standard practice. The surfaces before painting shall correspond to standard degree of purity SA 2.5.
2. Checking of surface preparation, measurement of dry paint thickness, adhesion, gloss & finish of painted surface shall be done as per BHEL/Vendor standard practice.

Notes:-

1. Stainless Steel Surfaces shall not be painted.

MANUFACTURER'S NAME AND ADDRESS			STANDARD QUALITY PLAN				TO BE FILLED BY BHEL		TO BE FILLED BY BHEL					
BHEL	VENDOR'S NAME	ITEM	DUPLEX OIL FILTER (JACKING OIL)		QP NO.	QA/BI/QP/022								
		DATED			24.12.2024									
		DRG. NO.	AS PER PO	REV	02									
		SPEC.	ST46056											
		REV	AS PER PO		Page 1 of 2									
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS		CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS		FORMAT OF RECORDS		AGENCY		REMARKS
										M	B	N		
1	2	3		4	5	6	7	8		9	D	10		11

1. MATERIAL														
1.1	BODY, DISC SEAT, SPINDLE, SEAT, MAGNETIC INSERTS, DPS ETC.	CHEMICAL COMPOSITION	MAJOR	CHEMICAL	1/HEAT	ORDERING SPEC. / BHEL APPD. DRG. & DATA SHEET	ORDERING SPEC. / BHEL APPD. DRG. & DATA SHEET	TC	✓	P	V			
		MECHANICAL PROPERTIES NDT	MAJOR	MECHANICAL	1/HEAT			TC	✓	P	V			
1.2	FILTER ELEMENT	MESH SIZE	MAJOR	DIMENSIONS	100%	BHEL APPD DRAWING/SPEC	BHEL APPD DRAWING/SPEC	TC	✓	P	V		FROM RECOGNIZED LAB	
		CHEMICAL COMPOSITION	MAJOR	CHEMICAL	1/HEAT	ORDERING SPEC. / BHEL APPD. DRG. & DATA SHEET	ORDERING SPEC. / BHEL APPD. DRG. & DATA SHEET	TC	✓	P	V			
2. IN-PROCESS INSPECTION														
2.1	WELD QUALITY	RT	MAJOR	VISUAL	10% BUTT WELDS	BHEL APPD DRAWING/SPEC	BHEL APPD DRAWING/SPEC	TC	✓	P	V			
		MPI	MAJOR	VISUAL	100% FILLET WELDS	BHEL APPD DRAWING/SPEC	BHEL APPD DRAWING/SPEC	TC	✓	P	V			
3. FINAL INSPECTION														
3.1	ASSEMBLY	DIMENSIONS	MAJOR	MEASUREMENT	100%	BHEL APPD DRAWING/BHEL SPEC.	BHEL APPD DRAWING/BHEL SPEC.	IR	✓	P	W			
3.2	FUNCTIONAL TEST	OPENING & CLOSING	MAJOR	VISUAL	100%	SMOOTH OPERATION OF CHANGEOVER VALVE		TC	✓	P	W			

		LEGEND: ! RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER	FOR CUSTOMER USE		
MANUFACTURER/ SUBCONTRACTOR					APPROVED BY

MANUFACTURER'S NAME AND ADDRESS			STANDARD QUALITY PLAN				TO BE FILLED BY BHEL		TO BE FILLED BY BHEL			
BHEL	VENDOR'S NAME	ITEM	DUPLEX OIL FILTER (JACKING OIL)		QP NO.	QA/BI/QP/022						
				DATED	24.12.2024							
		DRG. NO.	AS PER PO		REV	02						
		SPEC.	ST46056									
		REV	AS PER PO		Page 2 of 2							
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY			REMARKS
									M	B	N	
1	2	3	4	5	6	7	8	9	D	10		11

3.3	BODY AND ASSEMBLED FILTER	LEAKAGE	CRITICAL	HYDRAULIC TEST	100%	BHEL APPD DRAWING/SPEC	NO LEAKAGE	TC	✓	P	W		
3.4	SEAT LEAKAGE	LEAKAGE	CRITICAL	HYDRAULIC TEST	100%	BHEL APPD DRAWING/SPEC	NO LEAKAGE	TC	✓	P	W		
3.5	COLLAPSIBILITY TEST	AS PER SPEC	MAJOR	TYPE TEST		BHEL APPD DRAWING/SPEC	BHEL APPD DRAWING/SPEC	TC	✓	P	V		SHALL BE SUBMITTED ALONG WITH OFFER
3.6	PRESSURE DROP TEST	AS PER SPEC	MAJOR	TYPE TEST		BHEL APPD DRAWING/SPEC	BHEL APPD DRAWING/SPEC	TC	✓	P	V		SHALL BE SUBMITTED ALONG WITH OFFER
3.7	PRESERVATION AND PACKING		MAJOR	VISUAL	100%	BHEL SPEC	BHEL SPEC	TC	-	P	V		PAINTING AS PER NOTE 5
3.8	COMPLETENESS OF ACCESSORIES	LIST OF ACCESSORIES	Minor	Visual	100%	BHEL SPEC/ ORDR DRWG/ APPD DATASHEET	BHEL SPEC/ ORDR DRWG/ APPD DATASHEET	-	-	P	V		Vendor should ensure the list of accessories to be sent with Duplex filter as per approved Drwg, /documents/ datasheet.

NOTE:1 - Welding to be done by qualified welder as per ASME IX WPS and PQR to be checked by inspecting agency.

Note 2: All instruments to be used for testing/ inspection shall have valid 'calibration certificates' to be verified by agencies/ manufacturer/contractor/TPIA.

Note 3: All pages of the inspection documents shall be numbered in chronology with the QAP clauses, duly mentioning the corresponding QAP clause no. at the top of each page.

Note 4: One 'index' page containing the document descriptions, their page no's & QAP cl no. shall be attached upfront the inspection documents.

Note 5: Painting can be done only after inspection clearance, as per customer's /BHEL approved paint specification / schedule (if required). otherwise manufacturer's standard shall be followed.

Note 6: For any spares item, apart from 'visual inspection' the 'interchangeability fitment certificate' or 'material TC' are to be submitted, with specific mentioning of the ' part no/ item no of the approved GA/ x-sec drwg."

		LEGEND: ! RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. M: MANUFACTURER / SUBCONTRACTOR B: BHEL / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION	FOR CUSTOMER USE	
MANUFACTURER/ SUBCONTRACTOR		ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER		APPROVED BY