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**PRODUCT STANDARD**  
**TURBINES AND COMPRESSORS**  
**HYDERABAD**

**TC-5-2506**  
REV No.: **01**  
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**SPECIFICATION FOR HYDRAULIC TENSIONER FOR COMPRESSOR CASING BEARING SUPPORTS**

**1.0 TECHNICAL DETAILS**

Hereunder are summarized the minimum requirements for the supply of hydraulic bolt/stud tensioners for the tightening of compressor casing studs.

- Overall dimensions shall be in accordance to Fig. 1 and Table1
- Tensioning force shall be as per Table 1 with a tolerance of +/-2%
- Maximum operating pressure: **1500 bar**;
- Operational pressure: **1400 bar** (the operational pressure and maximum pressure has to be clearly indicated on the cylinder body)
- Reversal to zero position in case of loss of oil pressure
- Minimum operation schedules without maintenance: **No. 1000**;
- The equipment has to be inclusive of a device to easily insert the nut on the stud and screw it down (up).
- Minimum operation schedules per jack: **No. 3000**, in case the device has a limited life, it shall be equipped with a counter and the maximum number of cycles has to be clearly indicated on the cylinder body using a nameplate.

**ATTENTION:** The tensioner shall be equipped with all the protections to ensure a safe use in case of failure caused by excessive pressure or excessive number of cycles.

The equipment has to be supplied with operating and maintenance manual in English. The documentation shall include:

1. Instructions for the assembly and disassembly of bolt-tensioning cylinder;
2. Control operations for a correct assembly and disassembly;
3. Overall drawings with items and respective codes;

- Single components of jacks have to be made identifiable by a part number; table 3 indicates the Nuovo Pignone part number for a full set of spare gaskets
- The device shall be in accordance to E. E:C regulations, CE mark is required.

Each device shall be safety tested by manufacturer; certification has to be provided to BHEL.

Rev. No.	Revisions	Prepared	Approved	Date
01	Refer to record of revisions	SDR	PNR	30.09.10



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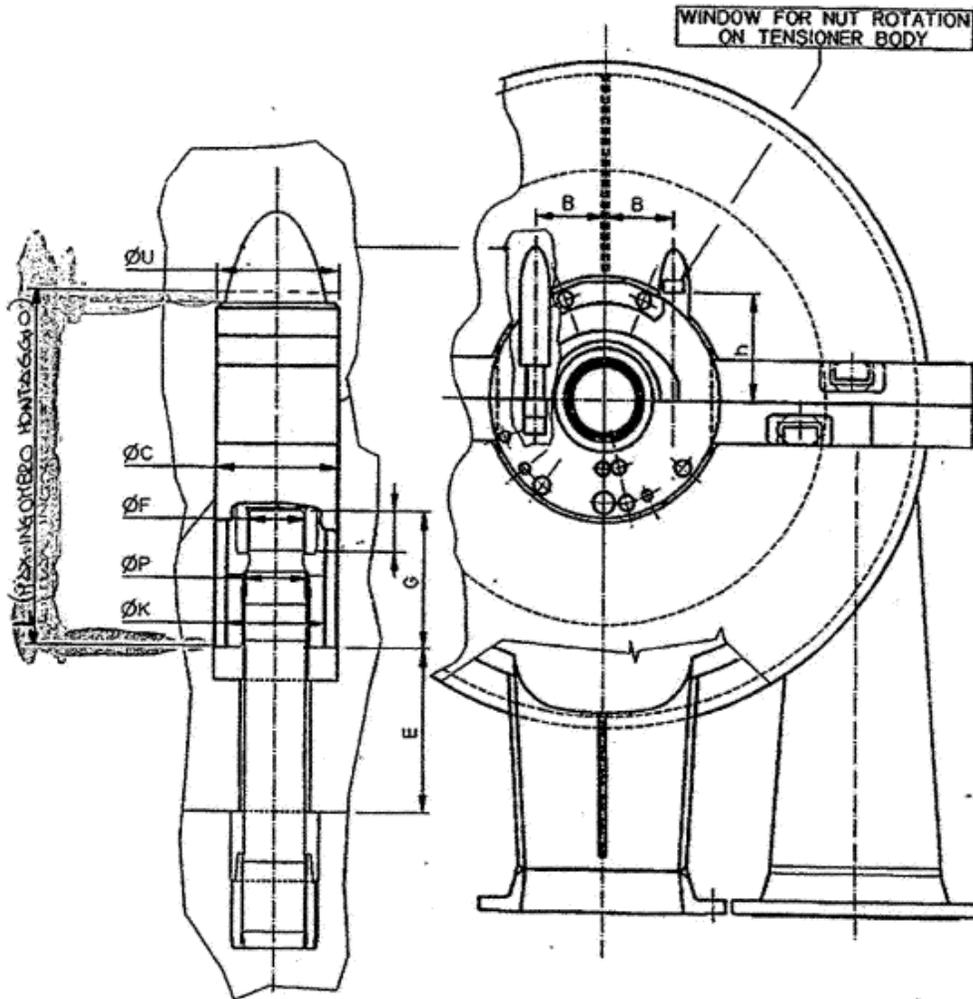
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Fig. 1



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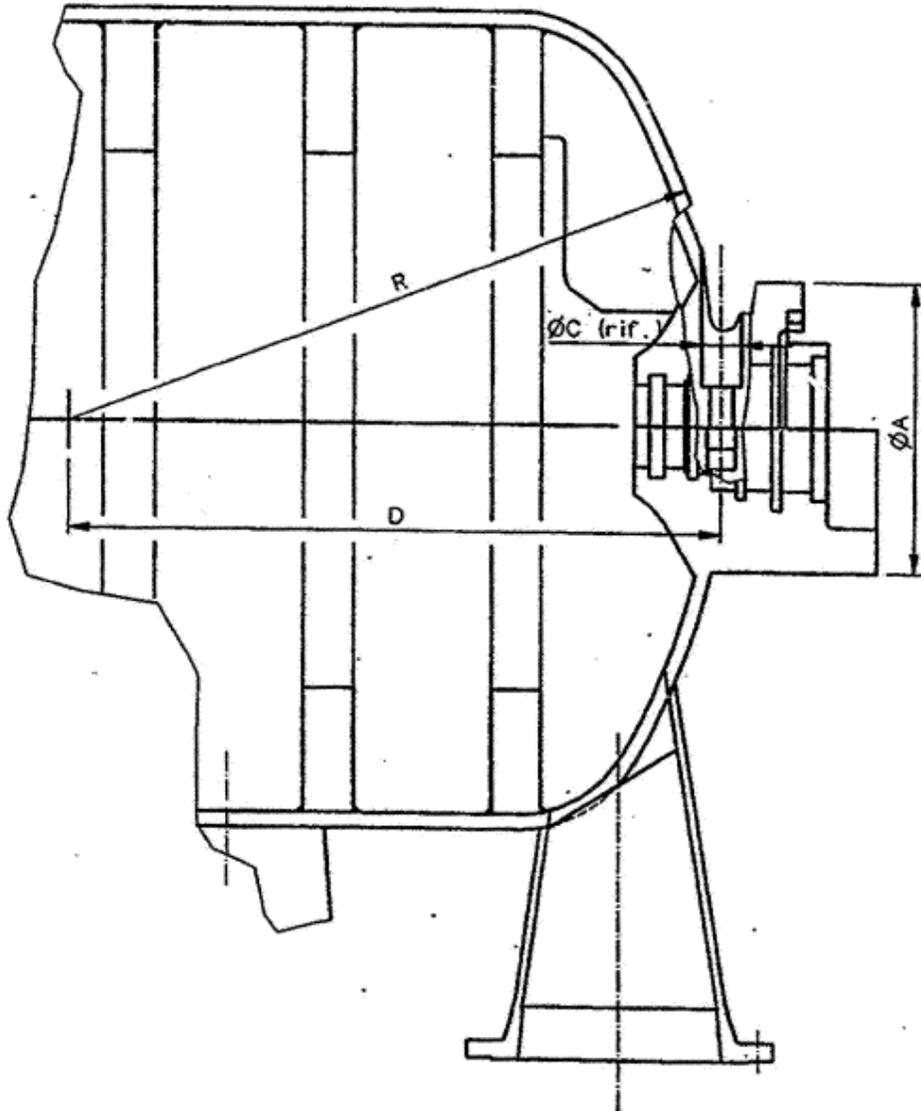
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TABLE 1

SIZE Var.No.	HOUSING DIMENSION						CYLINDER DIMENSION		
	ØA	B	ØC	D	E	R	h	ØU (max)	L
01	Ø575	180	82	1268.3	100	1345	270	79	
02	Ø685	210	92	1552.2	114	1639	320	89	
03	Ø765	250	110	1936.6	132	2028	350	107	
04	Ø835	270	128	2669.5	153	2745	390	124	
05	Ø1025	335	148	2666.9	185	2745	495	144	
06	Ø1115	390	165	2667.3	210	2745	470	159	
07	Ø1200	430	185	2667.4	240	2745	500	178	790
08			203				550	195	
09	Ø1470	510	242	3218	310	3280	635	236	955

TABLE 2

Var.	BOLT DIMENSION				MAX LOADS	NP CODE	BHEL CODE
	ØF	ØP	ØK	G			
01	M36X3	M42 X3			570000 N	RBO00565	
02	M42 X3	M48 X3	72	121.5	756000 N	RBO00566	
03	M48 X3	M56 X3	85	135	1045000 N	RBO00567	
04	M56 X3	M64 X3	95	142	1500000 N	RBO00568	
05	M72 X3	M80 X4	120	170	2383000 N	RBO00569	
06	M80 X4	M90 X4	132	195	3070000 N	RBO00570	<b>TC9752506062</b>
07	M90 X4	M100 X4	145	200	3790000 N	RBO00571	
08	M100 X4	M110 X4	159	260	5000000 N	RBO00593	
09	M125 X6	M135 X6	195	270	6850000 N	RBO00572	

Note: Variant No. 08 corresponds to 7FP of GENP specification No. SOS8621156

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TABLE 3

Var.No	DESCRIPTION	NP CODE	BHEL CODE
10	Cylinder gasket set cod. /RBO 00565	IRB0056501	
11	Cylinder gasket set cod. /RBO 00566	IRB0056601	
12	Cylinder gasket set cod. /RBO 00567	IRB0056701	
13	Cylinder gasket set cod. /RBO 00568	IRB0056801	
14	Cylinder gasket set cod. /RBO 00569	IRB0056901	
15	Cylinder gasket set cod. /RBO 00570	IRB0057001	<b>TC9752506151</b>
16	Cylinder gasket set cod. /RBO 00571	IRB0057101	
17	Cylinder gasket set cod. /RBO 00572	IRB0057201	

**2.0 GENP SPECIFICATION REF:**

SOS 8621156

**3.0 GUARANTEE CERTIFICATE**

Material shall be guaranteed against manufacturing defects for a period of 18 months after putting into service or 24 months after dispatch whichever is earlier.

**4.0 NAME PLATE AND PRODUCT MARKINGS:**

Equipment supplied shall be identified by name plate or other suitable product markings which shall include as a minimum the following information:

- Serial Number
- BHEL Order & Code No.
- Vendor's Drawing No. / Part No.

**5.0 PREPARATION FOR DELIVERY:**

Preservation shall be accomplished in accordance with acceptable commercial practices (For domestic or foreign shipments) unless otherwise indicated on the purchase order or quotation request.  
 Packaging shall be accomplished in accordance with acceptable commercial practices (for domestic or foreign shipments) unless otherwise indicated on the purchase order or quotation request.



