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PRODUCT STANDARD
TURBINES AND COMPRESSORS
HYDERABAD

TC-5-2505
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**SPECIFICATION OF BOLT-TENSIONING CYLINDER
FOR CASING FLANGE – LONGER VERSION**

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). The Nut drawing is included in table 2
- 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 numbers; 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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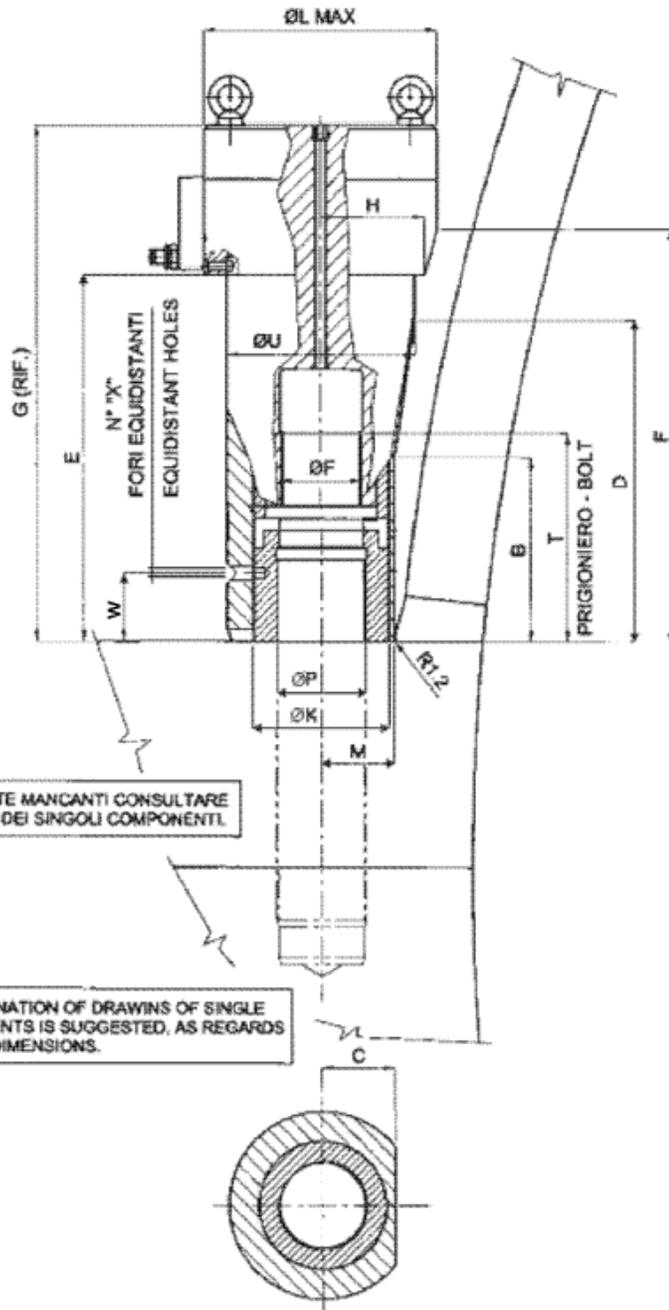
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TABLE 1

ITEM	1400 BAR	BOLT			CASING	TOOL		
Var. No.	FORCE MAX	ØF	ØP	T	M	B	ØU	E
1	696	M42x3	M48x3	135	43	100	100	200
2	932	M48x3	M56X3	150	49	115	116	230
3	1246	M56x3	M64x3	168	53	130	132	260
4	1600	M64x3	M72x4	178	60.5	145	150	290
5	2001	M72x3	M80x4	182	66	160	167	320
6	2570	M80x4	M90x4	202	74	180	189	360
7	3208	M90x4	M100x4	227	82	200	208	400
8	3904	M100x4	M110x4	232	89	220	231	440
9	5050	M115x4	M125x4	244	100	250	260	500
10	5800	M125x6	M135x6	290	108	270	285	561
11	7000	M140x6	M150x6	312	120	275	308	602

ITEM	TOOL					NUT			
Var. No.	C	D	F	G	H	ØL	ØK	W	X
1	42	168	224	295	57	127	75	57	12(Ø8.5)
2	48	196	258	330	65	144.5	85	70	15(Ø8.5)
3	52	224	292	375	72	161	95	73	15(Ø8.5)
4	57	252	326	420	83	184	108	77	15(Ø8.5)
5	64	280	360	450	92	205	120	72	15(Ø8.5)
6	73	315	405	500	102	230	135	85	15(Ø8.5)
7	81	350	450	565	115	258	150	90	18(Ø8.5)
8	86	385	495	605	130	290	165	90	18(Ø8.5)
9	98.5	438	562	675	148	329	187	97	18(Ø8.5)
10	106	470	615	750	165	356	202	116	12(Ø18)
11	117	485	652	780	177	385	222	125	12(Ø18)



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TABLE 2

ITEM Var. No.	BOLT-TENSIONER CODE	
	GENP CODE	BHEL CODE
01	RBO 00554	
02	RBO 00555	
03	RBO 00556	
04	RBO 00557	
05	RBO 00558	TC9752505058
06	RBO 00559	
07	RBO 00560	
08	RBO 00561	
09	RBO 00562	
10	RBO 00563	
11	RBO 00564	

Table 3
Spare Parts

Var. No.	DESCRIPTION	NP CODE	BHEL CODE
12	Cylinder basket set cod. /RBO 00554	IRB0055401	
13	Cylinder basket set cod. /RBO 00555	IRB0055501	
14	Cylinder basket set cod. /RBO 00556	IRB0055601	
15	Cylinder basket set cod. /RBO 00557	IRB0055701	
16	Cylinder basket set cod. /RBO 00558	IRB0055801	TC9752505163
17	Cylinder basket set cod. /RBO 00559	IRB0055901	
18	Cylinder basket set cod. /RBO 00560	IRB0056001	
19	Cylinder basket set cod. /RBO 00561	IRB0056101	
20	Cylinder basket set cod. /RBO 00562	IRB0056201	
21	Cylinder basket set cod. /RBO 00563	IRB0056301	
22	Cylinder basket set cod. /RBO 00564	IRB0056401	

2.0 GENP SPECIFICATION REF:

SOS 8621047

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.



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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.



