



STRUCTURAL ENGINEERING DIVISION
Test Floor Laboratory
Department of Civil Engineering
University of Engineering and Technology Lahore, 54890
Pakistan. Ph: 92-42-99029202

Ref: CED/TFL/11/4205

Dated: 16-11-2023

Dated of Test: 22-11-2023

To

Resident Engineer
NESPAK
Lahore Ring Road Southern Loop(SL-3) Project.

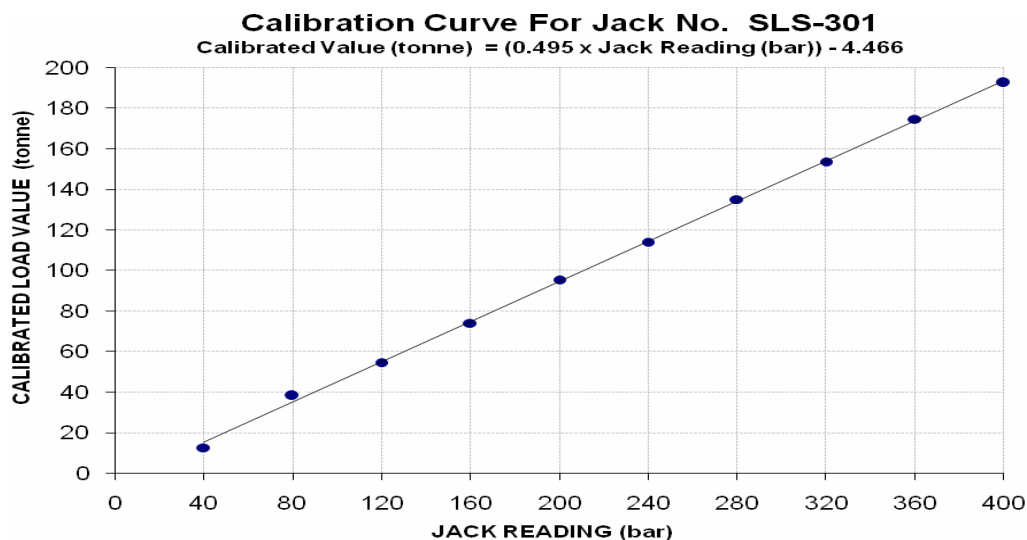
Subject: - **CALIBRATION OF HYDRAULIC JACK (MARK: TFL/11/4205)** (Page -1/4)

Reference to your Letter No. Nespak/LRRA/MNA/SL-3/076, dated: 15/11/2023 on the subject cited above. One Hydraulic Jack (Jack No. 301, Gauge No. SLS-301) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 400 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	320	360	400	
Calibrated Load	(kg)	12800	38400	54600	74000	95400	114200	135000	153800	174800	192600
	(tonne)	12.8	38.4	54.6	74.0	95.4	114.2	135.0	153.8	174.8	192.6
Calibrated Pressure (bar)	27	80	113	154	198	237	280	320	363	400	

The Ram Area of Jack = 472 cm²



I/C Testing Laboratories
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Note:

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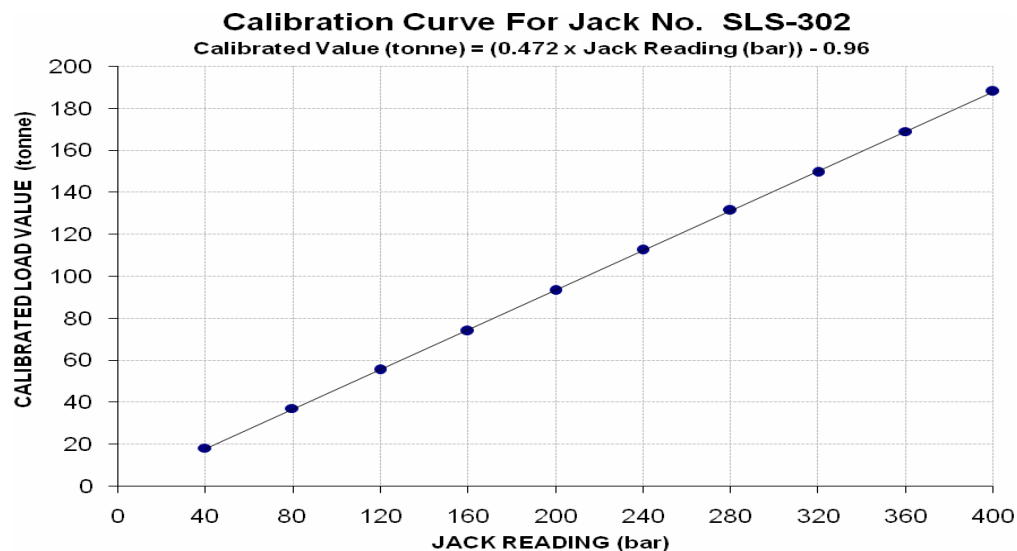
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/11/4205) (Page -2/4)

Reference to your Letter No. Nespak/LRRA/MNA/SL-3/076, dated: 15/11/2023 on the subject cited above. One Hydraulic Jack (Jack No. 302, Gauge No. SLS-302) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 400 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	280	320	360	400	
Calibrated Load	(kg)	18200	37200	55400	74000	93200	112600	131400	149600	169000	188200
	(tonne)	18.2	37.2	55.4	74.0	93.2	112.6	131.4	149.6	169.0	188.2
Calibrated Pressure (bar)	38	77	115	154	194	234	273	311	351	391	

The Ram Area of Jack = 472 cm²



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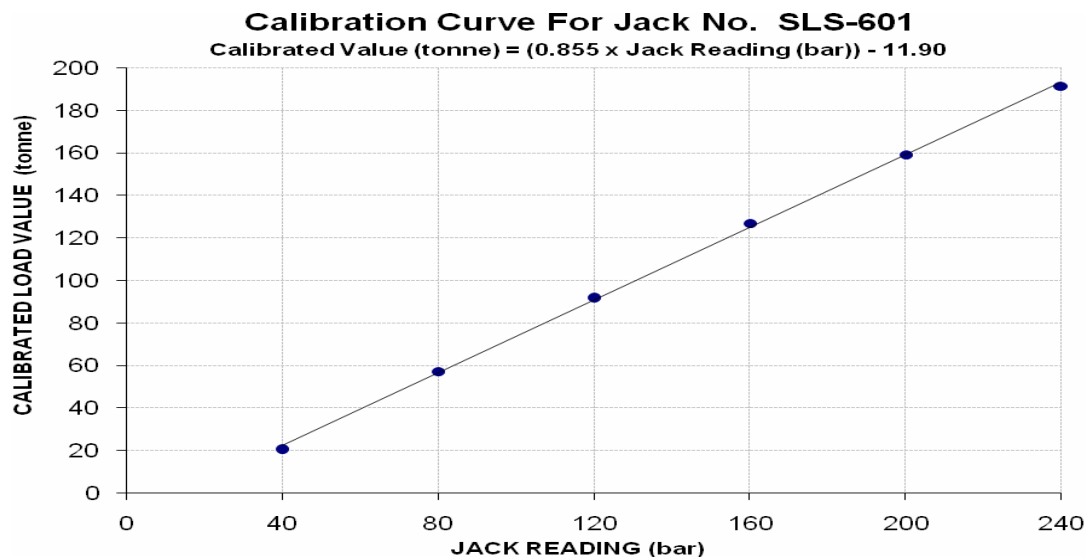
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/11/4205) (Page -3/4)

Reference to your Letter No. Nespak/LRRA/MNA/SL-3/076, dated: 15/11/2023 on the subject cited above. One Hydraulic Jack (Jack No. 601, Gauge No. SLS-601) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 240 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	
Calibrated Load	(kg)	20400	57200	91600	127000	159200	191600
	(tonne)	20.4	57.2	91.6	127.0	159.2	191.6
Calibrated Pressure (bar)	26	72	116	161	201	242	

The Ram Area of Jack = 776 cm²



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To

Resident Engineer
NESPAK
Lahore Ring Road Southern Loop(SL-3) Project.

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/11/4205) (Page -4/4)

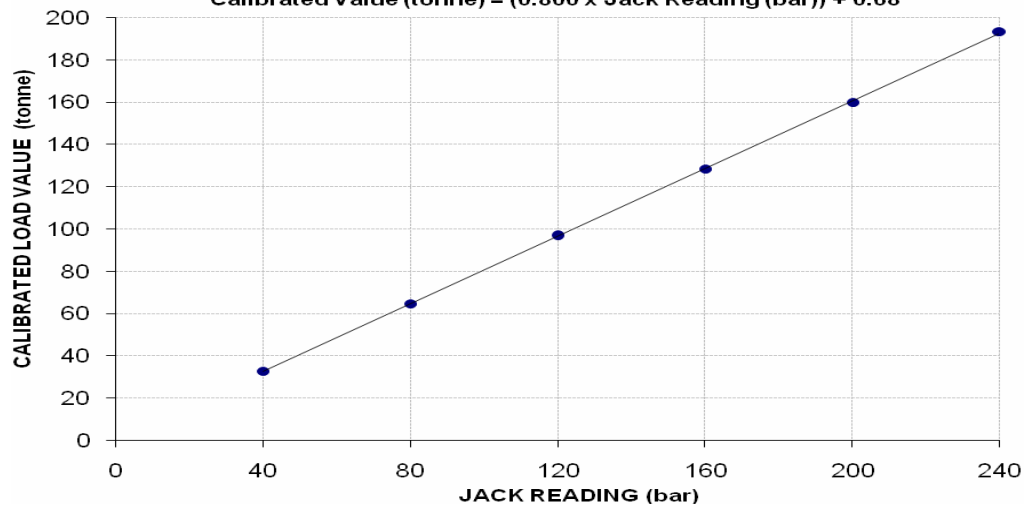
Reference to your Letter No. Nespak/LRRA/MNA/SL-3/076, dated: 15/11/2023 on the subject cited above. One Hydraulic Jack (Jack No. 602, Gauge No. SLS-602) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 1000 (bar)
Calibrated Range : Zero - 240 (bar)

Hydraulic Jack Reading (bar)	40	80	120	160	200	240	
Calibrated Load	(kg)	32800	64800	96800	128400	160000	193400
	(tonne)	32.8	64.8	96.8	128.4	160.0	193.4
Calibrated Pressure (bar)	41	82	122	162	202	244	

The Ram Area of Jack = 776 cm²

Calibration Curve For Jack No. SLS-602
Calibrated Value (tonne) = (0.800 x Jack Reading (bar)) + 0.68



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To,

Resident Engineer
NESPAK

Development of Signal Free Corridor from Main Boulevard Gulberg (Center Point) to
Walton Road (Defence Morr), Underpass at Khalid Butt Chowk, Lahore.
(M/s United Wire Industries.)

Reference # CED/TFL **4215** (Dr. Ali Ahmed)

Dated: 17-11-2023

Reference of the request letter # 3772/103/KBC/SA/04/77

Dated: 08-11-2023

Tension Test Report (Page -1/2)

Date of Test 22-11-2023

Gauge length 640 mm

Description Steel Strand Tensile Test as per ASTM A-416-94a

Sr. No.	Nominal Diameter	Nominal Weight	Measured weight	Yield strength clause (6.3)		Breaking strength clause (6.2)		Young's Modulus of Elasticity "E"	% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)	GPa		
1	12.70 (1/2")	780.0	784.0	18300	179.52	19800	194.24	198	>3.50	4228
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	

Only one sample for Test

Note:

1. Modulus of Elasticity is based on nominal steel area of the steel strand vide clause 13.3 of ASTM – A416a
2. Load versus percentage strain graphs are attached

I/C Testing Laboratoires
UET Lahore, Pakistan.

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Resident Engineer
NESPAK

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Walton Road (Defence Morr), Underpass at Khalid Butt Chowk, Lahore.
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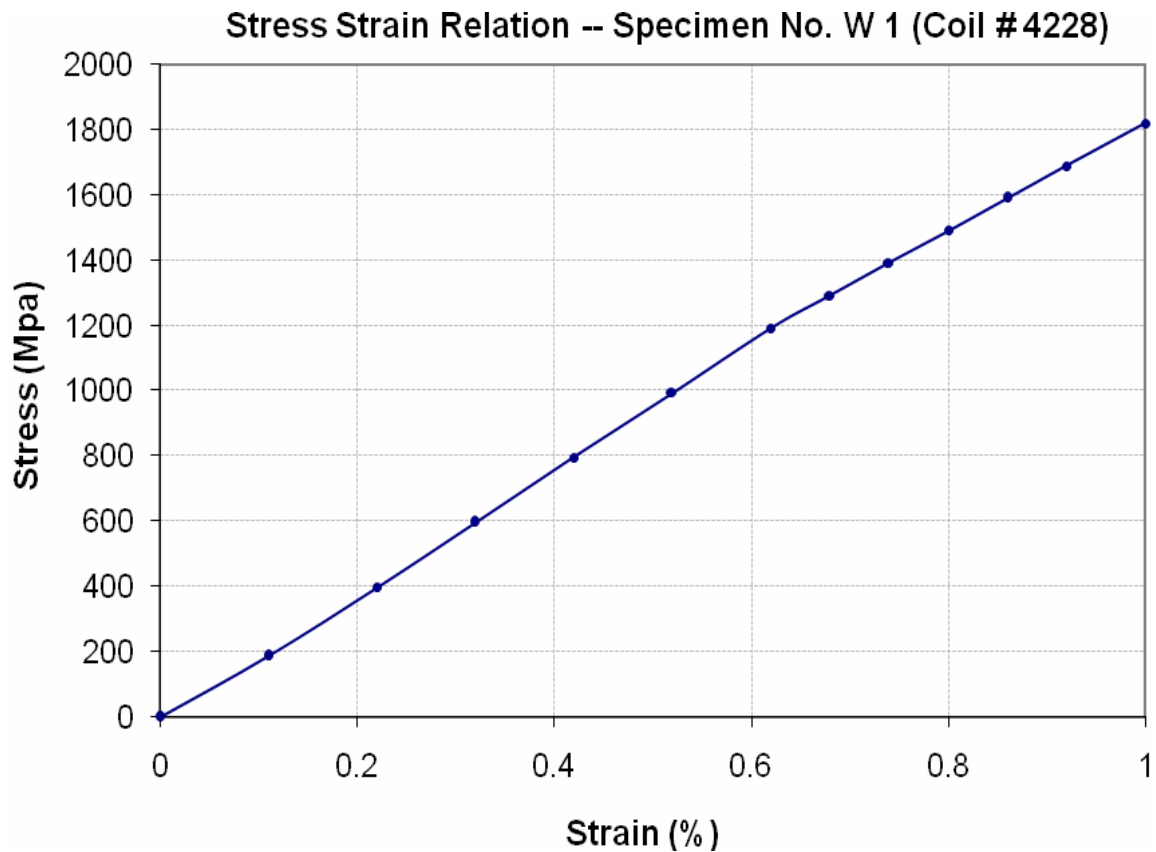
Reference # CED/TFL **4215** (Dr. Ali Ahmed)

Dated: 17-11-2023

Reference of the request letter # 3772/103/KBC/SA/04/77

Dated: 08-11-2023

Graph (Page – 2/2)



I/C Testing Laboratories
UET Lahore, Pakistan.

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To,
M/S Vision Engineering (Pvt) Ltd
Lahore

Reference # CED/TFL 4227 (Dr. Ali Ahmed)
Reference of the request letter # VECO/2023/2111/

Dated: 21-11-2023
Dated: 21-11-2023

Tension Test Report (Page – 1/1)

Date of Test 22-11-2023
Gauge length 640 mm
Description Steel Strand Tensile Test as per ASTM A-416-94a

Sr. No.	Nominal Diameter	Nominal Weight	Measured weight	Yield strength clause (6.3)		Breaking strength clause (6.2)		% Elongation	Remarks / Coil No.
	(mm)	(kg/km)	(kg/km)	(kg)	(kN)	(kg)	(kN)		
1	9.53 (3/8")	430.0	442.0	9800	96.14	10900	106.93	>3.50	xx
2	9.53 (3/8")	430.0	441.0	9100	89.27	10100	99.08	>3.50	xx
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	
Only two samples for Test									

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Ref: CED/TFL/11/4234

Dated: 22-11-2023

Dated: 22-06-2023

To

M/S China Gezhouba Group Co., Limited
CGGC Dasu Hydropower Project Management in Pakistan
Dasu Hydropower Project.

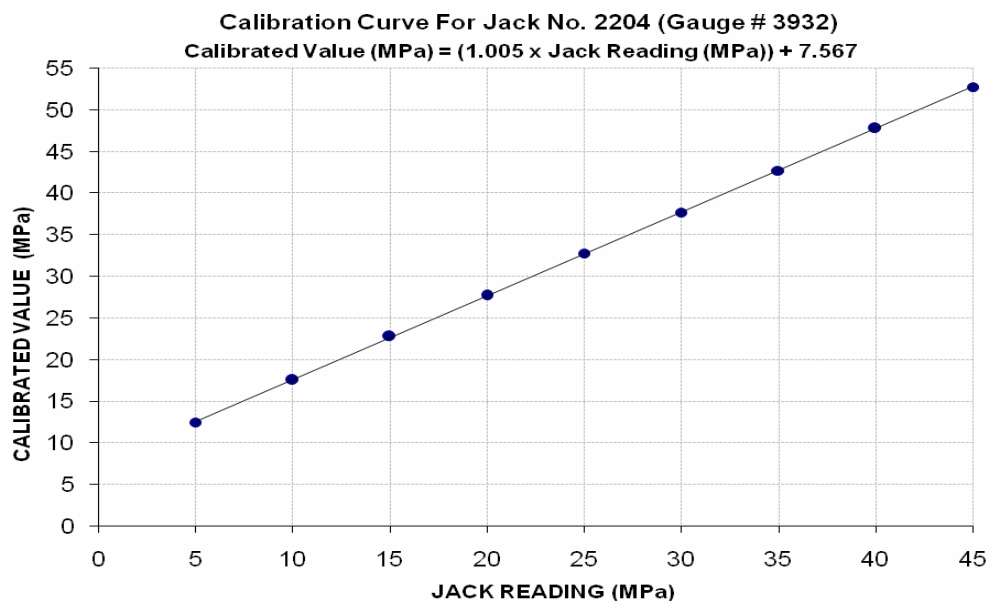
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/11/4234) (Page -1/4)

Reference to your Letter No. Nil, dated: 20/11/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2204, Gauge No. 3932) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 45 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	38000	53400	69200	84200	99600	114600	129800	145200	160400
Calibrated Pressure (Mpa)	12.51	17.57	22.77	27.71	32.78	37.71	42.72	47.78	52.79

The Ram Area of Jack = 298 cm²



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Dated: 22-06-2023

To

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CGGC Dasu Hydropower Project Management in Pakistan
Dasu Hydropower Project.

Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/11/4234) (Page -2/4)

Reference to your Letter No. Nil, dated: 20/11/2023 on the subject cited above. One Hydraulic Jack (Jack No. 2206, Gauge No. 1579) as received by us has been calibrated. The results are tabulated as under:

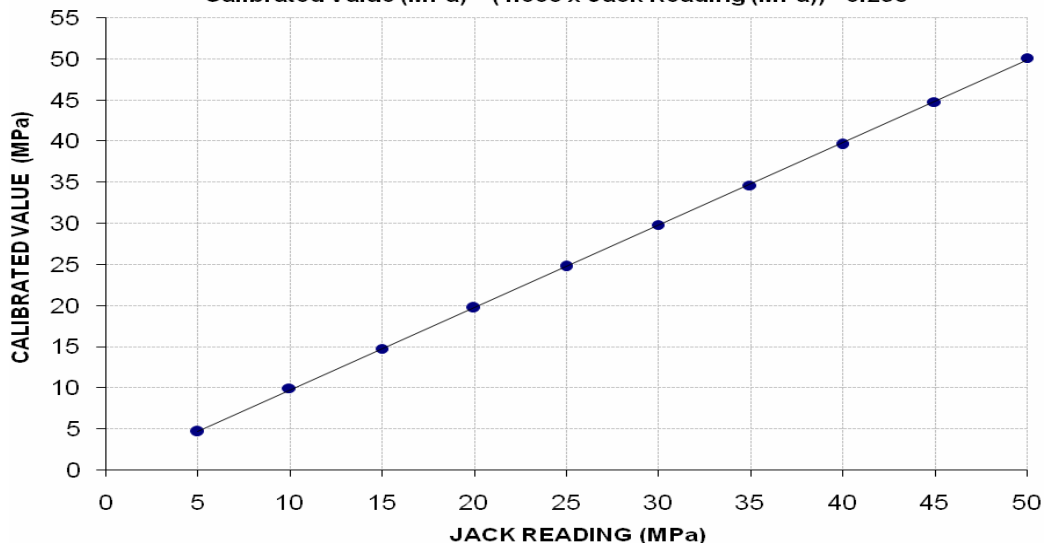
Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 50 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45	50
Calibrated Load (kg)	14200	30200	44800	60000	75200	90600	105200	120400	136200	152400
Calibrated Pressure (Mpa)	4.67	9.94	14.74	19.75	24.75	29.82	34.62	39.62	44.82	50.15

The Ram Area of Jack = 298 cm²

Calibration Curve For Jack No. 2206 (Gauge # 1579)

Calibrated Value (MPa) = (1.003 x Jack Reading (MPa)) - 0.298



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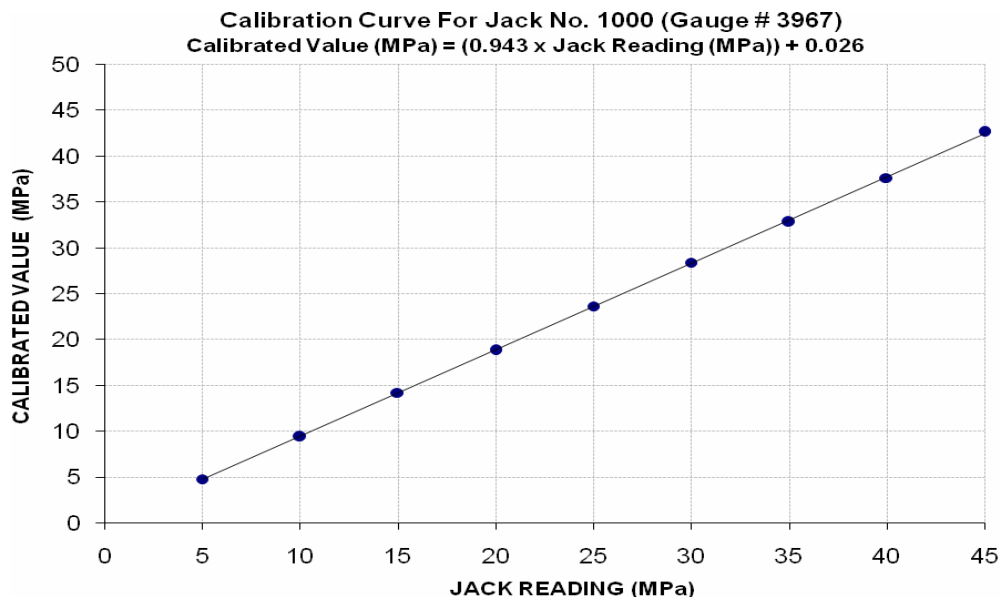
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/11/4234) (Page -3/4)

Reference to your Letter No. Nil, dated: 20/11/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1000, Gauge No. 3967) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 45 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	2500	4900	7400	9800	12300	14800	17100	19600	22200
Calibrated Pressure (Mpa)	4.80	9.41	14.22	18.83	23.63	28.43	32.85	37.65	42.65

The Ram Area of Jack = 51.05 cm²



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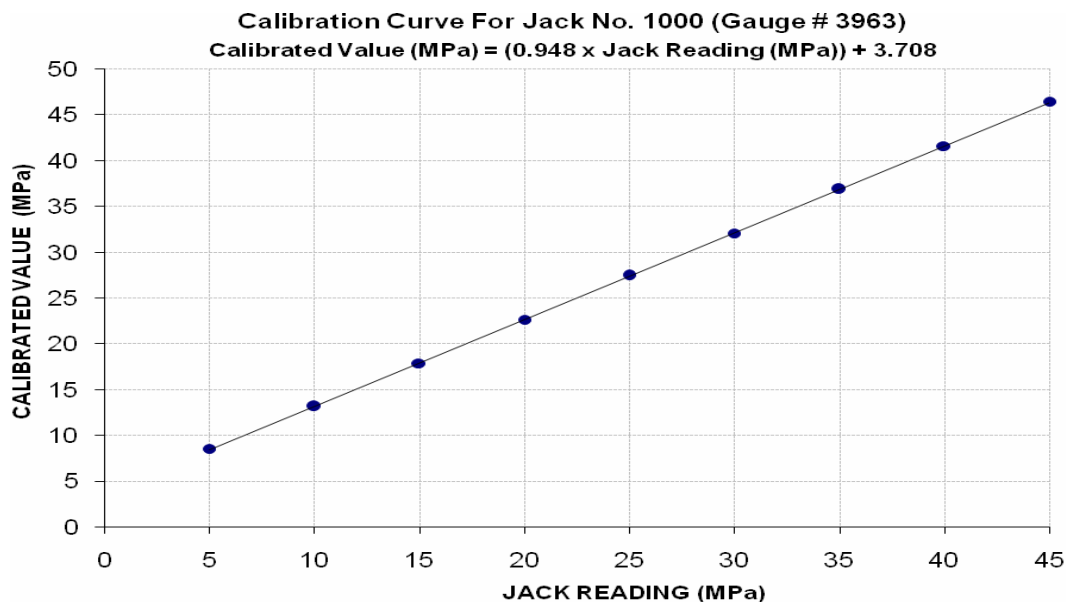
Subject: - CALIBRATION OF HYDRAULIC JACK (MARK: TFL/11/4234) (Page -4/4)

Reference to your Letter No. Nil, dated: 20/11/2023 on the subject cited above. One Hydraulic Jack (Jack No. 1000, Gauge No. 3963) as received by us has been calibrated. The results are tabulated as under:

Total Range : Zero - 60 (MPa)
Calibrated Range : Zero - 45 (MPa)

Hydraulic Jack Reading (MPa)	5	10	15	20	25	30	35	40	45
Calibrated Load (kg)	4450	6850	9300	11800	14300	16700	19200	21650	24200
Calibrated Pressure (Mpa)	8.55	13.16	17.87	22.67	27.47	32.08	36.88	41.59	46.49

The Ram Area of Jack = 51.05 cm²



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