भारत सरकार – रेल मंत्रालय
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Government of India – Ministry of Railways
Research Designs & Standards Organisation
Lucknow – 226011
DID (0522) 2450115
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PROVISIONAL SPEED CERTIFICATE FOR OPERATION

No.	TM/HM/S082/09-3X Dynamic/DFCCIL	Date	As Signed

(A) महाप्रबन्धक (इंजीनियरिंग),

1. मध्य रेलवे, छत्रपति शिवाजी टर्मिनस, मुम्बई– 400 001
2. पूर्व रेलवे, फेयरली प्लेस, कोलकाता– 700 001
3. उत्तर रेलवे, बडौदा हाऊस, नई दिल्ली– 110 001
4. पूर्वोत्तर रेलवे, गोरखपुर– 273 001
5. पूर्वोत्तर फ्रन्टियर रेलवे, मालीगॉव, गुवाहाटी– 781 011
6. दक्षिण रेलवे, एनेक्सी, पार्क टाऊन, चेन्नई– 600 003
7. दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद– 500 071
8. दक्षिण पूर्व रेलवे, गार्डन रीच, कोलकाता– 700 043
9. पश्चिम रेलवे, चर्चगेट, मुम्बई– 400 020
10. उत्तर मध्य रेलवे, प्रयागराज– 211 001
11. उत्तर पश्चिम रेलवे, जयपुर– 302 006
12. पूर्व मध्य रेलवे, हाजीपुर– 844 101
13. पूर्व तट रेलवे, रेलवे कॉम्पलेक्स, भुवनेश्वर– 751 023
14. दक्षिण पश्चिम रेलवे, हुबली– 580 023
15. पश्चिम मध्य रेलवे, जबलपुर– 482 001
16. दक्षिण पूर्व मध्य रेलवे, बिलासपुर– 495 004

(B) प्रबन्ध निदेशक,

डेडीकेटेड फ्रेट कोरीडोर कॉर्पोरेशन ऑफ इण्डिया लि0 पाँचवा तल, प्रगति मैदान मेट्रो स्टेशन बिल्डिंग कॉम्पलेक्स नई दिल्ली–110 001

Sub:	Provisional Speed Certificate for operation of Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" (**Transportation Code CSM 3XDGS D**) supplied by M/s Plasser, India upto maximum speed of 60kmph when running on its own power as well as when running in train formation over Indian Railways and over routes of Eastern & Western dedicated freight corridors of DFCCIL.

Ref:	Contract Agreement (HQ/EN/PWC/PHASE I/PKG-PE-P6/D&B/11/Mitsui) dated 16.11.2020.

1.0	**IMPORTANT PARAMETERS RELATED TO ROLLING STOCK**

Type	**Final / Provisional / Oscillation Trial / COCR Movement**	Provisional	**Validity/ Period or Permanent**	**IR / Sectional/ DFCCIL**	5years / IR & Eastern & Western DFCCIL routes.

Stock Name	Continuous Tamping Machine with integrated Dynamic Stabilizer	**Max. Axle Load(Empty)**	21t	**Max. Axle Load(Loaded)**	21t

Transportation Code	**CSM 3XDGS D**	**GA Drg. No.**	M/s Plasser Drg. No. UD00.1236-35 Version-4

Bogie Arrgt. Drg. No.	M/s. Plasser Drg. No. UD61.25200-SP1676 (Ver-2) & WN50-00 (Ver-2) for Drive Bogie and Drg. No. WN52-00 (Ver-2) for Running Bogie	**Suspension Arrgt. Drg. No.**	M/s Plasser Drg. No. UD62.5600 Type 3 & LK62.300-I

Commodity	Coal / Ore / Steel /Bagged / Oil /etc.	NA	**Gauge**	BG

Type of Bogie	Bo-Bo	**Type of Coupler**	Transition Coupler

Wheel Dia.(mm)	**New**	**Worn**
Main	920	854
Satellite	730	710

Max. Permissible Speed for IR & for routes of Eastern & Western DFCCIL	**Own Power**	60kmph	**Train Formation**	60kmph

2.0 INTRODUCTION

2. 1 Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" supplied by M/s Plasser, India as per their GA Drawing No. M/s Plasser Drg. No. UD00.1236-35 Version-4 is a self-propelled machine and is used for leveling, lifting, lining, tamping & stabilizing of track.

2. 2 Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" supplied by M/s Plasser, India is having maximum axle load of 21t and wheel diameter of main bogie and satellite bogie of 920mm and 730mm respectively. The suspension arrangement as per M/s Plasser Drg. No. UD62.5600 Type 3 & LK62.300-I. The design speed of machine is 80kmph when running on its own power and 100kmph when running in train formation as a dead vehicle and as a last vehicle. The design details are given in Annexure-A.

3.0 Based on design features, details given in Annexure-A and Dynamic simulation results of Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" supplied by M/s Plasser, India it is certified that the machine as per M/s Plasser GA Drg. No. UD00.1236-35 Version-4 may be permitted provisionally to run up to maximum permissible speed of 60kmph when running on its own power as well as when running in train formation as a dead vehicle and as a last vehicle for operation over Indian Railways and over routes of Eastern & Western dedicated freight corridors of DFCCIL, subject to the following conditions: -

3.1 TRACK

3.1.1 FOR INDIAN RAILWAYS

3.1.1.1 **The track shall be to a minimum standard of-**

Rail Section	**Sleeper Density**	**Ballast Cushion**	**Max. Speed (own power)**	**Max. Speed (Train formation)**
52 kg (72UTS)	1540 Nos./km PSC Sleeper	250mm (100mm clean & rest in caked up condition on compacted and stable formation)	Upto 50kmph	Upto 50kmph
52 kg (90UTS)	1540 Nos./km PSC Sleeper	250mm (100mm clean & rest in caked up condition on compacted and stable formation)	Upto 60kmph	Upto 60kmph

3.1.1.2 Track geometry standards shall be maintained to as per provisions of Indian Railways Permanent Way Manual, June-2020, containing track geometry standards under Para 522.

3.1.1.3	For track maintained to lower standard than that mentioned above, the Chief Engineer shall decide the lower maximum permissible speed on the basis of maintenance condition. In this connection, instructions issued by Railway Board letter no. 65/WDO/SR/26 dated 19/20.10.1966 may be seen. When the Chief Engineer considers that the road bed is not compacted or there is improper drainage, he may suitably restrict the maximum permissible speed depending upon the local conditions.
3.1.1.4	The maximum permissible speed on curves shall be decided on the basis of the existing provisions of the Indian Railways Permanent Way Manual, June-2020. Maximum cant deficiency permitted would be 75mm.
3.1.1.5	The welds shall be protected by joggled fish plates as per provisions of USFD Manual and Indian Railways Permanent Way Manual, June-2020 and other policy instructions of Railway Board. The maintenance of Rails and Rail joints shall be ensured as per provisions of Indian Railways Permanent Way Manual, June-2020. In addition, wherever condition warrants on account of corrosion on rail/weld collar, wear on rail, cupping of welds etc., necessary precautions shall be taken for fish plating/joggled fish plating.
3.1.1.6	Zonal Railways shall ensure further detailed examination of track as deemed fit based on age cum condition basis, overdue renewal and condition of formation etc. as per provisions of Indian Railways Permanent Way Manual, June-2020, regarding permanent way renewals and shall suitably restrict maximum speed of operation based on such examination.

3.1.2	**FOR EASTERN & WESTERN DEDICATED FREIGHT CORRIDORS OF DFCCIL**				
3.1.2.1	**The track structure shall be of minimum standard-**				
	Rail Section	**Sleeper Density**	**Ballast Cushion**	**Max. Speed (Own power)**	**Max. Speed (Train formation)**
	60 kg (90 UTS)	1660 Nos./km PSC sleeper	300mm (200mm clean & rest in caked up condition on compacted and stable formation)	60kmph	60kmph
3.1.2.2	The minimum standard of track geometry maintenance shall be as per provisions of Indian Railways Permanent Way Manual, June-2020, containing track geometry standards under Para 522.				
3.1.2.3	For track maintained to lower standard than that mentioned above, the Chief Engineer/GGM (Engg.) concerned shall decide the lower maximum permissible speed on the basis of maintenance condition. In this connection, instructions issued by Railway Board's letter no. 65/WDO/SR/26 dated 19/20.10.1966 may be seen. When the Chief Engineer/GGM (Engg.) considers that the road bed is not compacted or there is improper drainage, he shall suitably restrict the maximum permissible speed depending upon the local conditions.				
3.1.2.4	The maximum permissible speed on curves shall be decided on the basis of the existing provisions of the Indian Railways Permanent Way Manual, June-2020. Maximum cant deficiency permitted would be 75mm.				
3.1.2.5	The welds shall be protected by joggled fish plates as per provisions of USFD Manual and Indian Railways Permanent Way Manual, June-2020 and other policy instructions of Railway Board. The maintenance of Rails and Rail joints shall be ensured as per provisions of Indian Railways Permanent Way Manual, June-2020. In addition, wherever condition warrants on account of corrosion on rail/weld collar, wear on rail, cupping of welds etc., necessary precautions shall be taken for fish plating/joggled fish plating.				

3.1.2.6	DFCCIL shall ensure further detailed examination of track as deemed fit based on age cum condition basis, overdue renewal and condition of formation etc. as per the provisions of Indian Railways Permanent Way Manual, June-2020 regarding permanent way renewals and may suitably restrict maximum speed of operation based on such examination.

3.2	**BRIDGE STIPULATIONS**

3.2.1	**FOR INDIAN RAILWAYS**				
3.2.1.1	The clearance refers to “Standard RDSO Spans” bridges with standard design of girders, slabs, pipe culverts, piers and abutments etc. issued by RDSO for BGML, RBG, MBG and 25t-2008 standard loadings.				
3.2.1.2	Superstructures & Bearings of “Special Spans” (designed and constructed by Zonal Railways based on site requirements), Arches and sub-structures (including foundation) of all bridges (Standard RDSO spans & Special Spans) are to be got examined by the Chief Bridge Engineer and certified safe with respect to current Indian Railway Standard Codes with up to-date correction slips.				
3.2.1.3	The clearance is subject to the following parameters of Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. “09-3X Dynamic” supplied by M/s Plasser, India:-				
	Rolling Stock	**Maximum axle load (t)**	**Maximum tractive effort per axle (t)**	**Maximum braking force at rail level per axle(t)**	**Maximum CG height from rail level (mm)**
	Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. “09-3X Dynamic”	21	3.21	1.95	1280
3.2.1.4	All Standard RDSO spans of BGML, RBG, MBG and 25t-2008 loading are fit for proposed speed of 60kmph when running on its own power as well as when running in train formation.				
3.2.1.5	During operation of Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. “09-3X Dynamic” with single/multiple locomotives and other rolling stocks, the speed certificate issued by RDSO of the single/multiple locomotives/rolling stocks in empty/loaded condition shall be strictly complied with. Therefore, speed certificate of each single/multiple locomotive and rolling stocks in train formation should be examined carefully & speed restriction/strengthening/prohibition/any other restriction should be imposed according to most restrictive rolling stock/locomotive/multiple locomotives in train formation.				
3.2.1.6	Location of bridges on which speed restrictions are imposed should be notified by the Railways and incorporated in the working timetable.				
3.2.1.7	The above clauses have been arrived at considering bridges are in physically sound condition. In case the bridges are not in satisfactory physical condition, necessary speed restriction to be imposed by Chief Bridge Engineer of Zonal Railway on condition basis.				
3.2.2	**FOR EASTERN & WESTERN DEDICATED FREIGHT CORRIDORS OF DFCCIL**				
3.2.2.1	The clearance refers to “Standard RDSO Spans” bridges with standard design of girders, slabs, pipe culverts, piers and abutments etc. issued by RDSO for “DFC loading (32.5t axle				

	load)".
3.2.2.2	Superstructures & Bearings of "Special Spans" (designed and constructed by DFCCIL based on site requirements), Arches and sub-structures (including foundation) of all bridges (Standard RDSO spans & Special Spans) are to be examined by DFCCIL and certified safe with respect to current Indian Railway Standard Codes with up to-date correction slips.
3.2.2.3	The clearance is subject to the following parameters of Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" supplied by M/s Plasser, India:-

Rolling Stock	**Maximum axle load (t)**	**Maximum tractive effort per axle (t)**	**Maximum braking force at rail level per axle (t)**	**Maximum CG height from rail level (mm)**
Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic"	21	3.21	1.95	1280

3.2.2.4	All Standard RDSO spans of DFC loading are fit for proposed speed of 60kmph when running on its own power as well as when running in train formation.
3.2.2.5	During operation of Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" with single/multiple locomotives and other rolling stocks the speed certificate issued by RDSO of the single/multiple locomotives/rolling stocks in empty/loaded condition shall be strictly complied with. Therefore, speed certificate of each single/multiple locomotive and rolling stocks in train formation should be examined carefully & speed restriction/strengthening/prohibition/any other restriction should be imposed according to most restrictive rolling stock/locomotive/multiple locomotives in train formation.
3.2.2.6	Location of bridges on which speed restrictions are imposed should be notified by DFCCIL and incorporated in the working timetable.
3.2.2.7	The above clauses have been arrived at considering bridges are in physically sound condition. In case the bridges are not in satisfactory physical condition, necessary speed restriction to be imposed by DFCCIL on condition basis.

3.3	**SIGNALLING STIPULATIONS**

3.3.1	Provisions of GR, SR, IRSOD, DFC-SSOD, SEM & all extant instructions issued from time to time as applicable shall be complied with.
3.3.2	In case of locomotive/rolling stocks /train (having this machine in its composition) having EBD of more than 1 km and non-provision of second distant signal/4 Aspect Automatic signalling in the section, action as per para 7.8.9 of IRSEM (issue July 2021) shall be taken.
3.3.3	While running through a station yard, speed of the Rolling stock shall be restricted to the maximum permissible speed as per standard of interlocking provided at the station or any other speed restriction whichever is severe.

3.4	**ROLLING STOCK STIPULATIONS**

3.4.1	Before initiating the operation of the Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" supplied by M/s Plasser, India the Chief Engineer/Track Machine of the concerned Railway/CGM (Civil Engg.) of the DFCCIL shall ensure the safety of the rolling stock and certify the track worthiness. He shall ensure the proper maintenance of the rolling stock.
3.4.2	Brake of the Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" supplied by M/s Plasser, India shall be in perfect working condition during the operation.

3.5	**TRACTION INSTALLATION**

3.5.1	**FOR INDIAN RAILWAYS**
3.5.1.1	In 25KV AC traction area, the Principal Chief Electrical Engineer of the concerned Railway shall have to ensure that the minimum height of contact wire and electrical clearances as stipulated in provisions of Chapter-V and V-A, Electric Traction 'Schedule of Dimensions of 1676mm Gauge (BG) revised 2022' with latest Addendum & Corrigendum Slips is not violated and strictly followed to ensure its safe running.
3.5.1.2	In addition to above, the Principal Chief Electrical Engineer of the concerned Railway may impose any temporary speed restriction on the basis of personal knowledge, experience of the sectional OHE and the field conditions prevailing on the particular section.
3.5.1.3	When the Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" is being moved, it shall be ensured that all the protruding parts are withdrawn and suitably locked, so that during the run there is no possibility of any infringement occurring to the standard moving dimensions.
3.5.2	**FOR EASTERN & WESTERN DEDICATED FREIGHT CORRIDORS OF DFCCIL**
3.5.2.1	In 25 KV AC traction area, the GGM (Electrical) of the DFCCIL shall have to ensure that the minimum height of contact wire and electrical clearances as stipulated in provisions of Chapter VII of Eastern Corridor & Chapter XIV of Western Corridor, Electric Traction 'Standard Schedule of Dimensions' for dedicated freight corridors with latest Addendum & Corrigendum Slips is not violated and strictly followed to ensure its safe running.
3.5.2.2	In addition to above, the GGM (Electrical) of DFCCIL may impose any temporary speed restriction on the basis of personal knowledge, experience of the sectional OHE and the field conditions prevailing on the particular section.
3.5.2.3	When the Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" is being moved, it shall be ensured that all the protruding parts are withdrawn and suitably locked, so that during the run there is no possibility of any infringement occurring to the standard moving dimensions.

3.6	**GENERAL STIPULATIONS**

3.6.1	The working of Maintenance Machine shall be as per provision of Indian Railways Permanent Way Manual, June-2020.
3.6.2	The profile of Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" supplied by M/s Plasser, India, infringes to clause 17 of Chapter IV (D) of Indian Railways Schedule of Dimensions (BG) Revised, 2022 and infringes to clauses 4.1.2(ii), 4.1.2(iii) & 4.4.4 of chapter IV of Eastern Dedicated Freight Corridor and clauses 11.1.2(ii), 11.1.2(iii) & 11.4.4 of chapter XI of Western Dedicated Freight Corridor for BG 'Standard Schedule of Dimension of Indian Railways, January-2013'. Railway Board has condoned these infringements vide their letter No. 2023/CEDO/SD/RS/11/09-3X-Dynamic-IR-DFCCIL dated 21.08.2023.

3.6.3	All the permanent and temporary speed restrictions in force and those that shall be imposed from time to time due to track, bridges, curves, signalling and interlocking etc. shall also be observed. In this connection, the speed on curve shall be in accordance with para 3.1.1.4 for Indian Railway Track and para 3.1.2.4 for DFCCIL track of this speed certificate.
3.6.4	The machine when running in train formation as well as when running on its own power, a speed restriction of 15kmph shall be imposed on Diamond crossings. No speed restriction on main line route at points and crossing is required. Speed restriction on turnout side of points and crossing (on geometrical consideration and not due to wheel diameter of 730mm/710mm) shall be applicable as per provision in Indian Railways Permanent Way Manual, June 2020.
3.6.5	In case of emergency, the machine shall be attached with passenger /goods trains and operation speed of passenger/goods trains shall not be more than 60kmph.
3.6.6	For the movement of the machine, in case of failure of the machine in block sections, the instructions of the para 708(4) of Indian Railways Track Machine Manual, September -2019 shall be followed.
3.6.7	Competent track machine staff who can apply the machine brakes in case of train parting shall escort the machine while running in train formation as a dead vehicle.
3.6.8	This speed certificate is provisional and shall be valid up to 5 years from date of issue or before date of issuance of relevant final speed certificate, whichever is earlier. This Speed Certificate is valid only for Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. “09-3X Dynamic” coming under Contract Agreement (HQ/EN/PWC/PHASE I/PKG-PE-P6/D&B/11/Mitsui) dated 16.11.2020.

ENCLOSURES:/ संलग्नकः

i)	Annexure-A
ii)	M/s Plasser GA Drg. No. UD00.1236-35 Version-4.
iii)	Bogie Arrangement: M/s. Plasser Drg. No. UD61.25200-SP1676 (Ver-2) & WN50-00 (Ver-2) for Drive Bogie and Drg. No. WN52-00 (Ver-2) for Running Bogie.
iv)	Suspension Arrangement: M/s Plasser Drg. No. UD62.5600 Type 3 & LK62.300-I.
v)	Railway Board’s letter No. 2023/CEDO/SD/RS/11/09-3X-Dynamic-IR-DFCCIL dated 21.08.2023.
vi)	DFCCIL letter No. HQ/ENWC/PWC(PnE)/1/2020(6106) dated 01.02.2023.
vii)	Railway Board’s letter No. 65/WDO/SR/26 dated 19/20.10.1966.
viii)	Para 708 (4) of Indian Railways Track Machine Manual, September -2019.

Digitally Signed by Nitin Mehrotra
Date: 27-03-2024 12:16:58
Reason: Approved

(नितिन मेहरोत्रा)
कार्यकारी निदेशक मानक/चालन शक्ति

प्रतिलिपिः

1. **सचिव, {यांत्रिक/विद्युत/इंजीनियरिंग(जी)}, रेलवे बोर्ड, रेल भवन, नई दिल्ली– 110001**
2. **मुख्य रेल संरक्षा आयुक्त, अशोक मार्ग, लखनऊ–226001**
3. **महाप्रबन्धक (यांत्रिक/विद्युत/संचालन/संकेत एवं दूर संचार)**
   - i) मध्य रेलवे, छत्रपति शिवाजी टर्मिनस मुम्बई– 400 001
   - ii) पूर्व रेलवे, फेयरली प्लेस, कोलकाता– 700 001

iii) उत्तर रेलवे, बड़ौदा हाऊस, नई दिल्ली– 110001
iv) पूर्वोत्तर रेलवे, गोरखपुर– 273001
v) पूर्वोत्तर फ्रन्टियर रेलवे, मालीगॉव ,गुवाहाटी– 781 011
vi) दक्षिण रेलवे, एनेक्सी, पार्क टाऊन, चेन्नई– 600 003
vii) दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद– 500 071
viii) दक्षिण पूर्व रेलवे, गार्डन रीच, कोलकाता– 700 043
ix) पश्चिम रेलवे, चर्चगेट, मुम्बई– 400020
x) उत्तर मध्य रेलवे, प्रयागराज– 211 001
xi) उत्तर पश्चिम रेलवे, जयपुर– 302 006
xii) पूर्व मध्य रेलवे, हाजीपुर– 844 101
xiii) पूर्व तट रेलवे, रेलवे कॉम्पलेक्स, भुवनेश्वर– 751 023
xiv) दक्षिण पश्चिम रेलवे, हुबली– 580 023
xv) पश्चिम मध्य रेलवे, जबलपुर– 482 001
xvi) दक्षिण पूर्व मध्य रेलवे, बिलासपुर– 495 004

4. अध्यक्ष एवं प्रबन्ध निदेशक, कोंकण रेलवे कारपोरेशन लिमिटेड, बेलापुर भवन, सेक्टर–11, सी.बी.डी.बेलापुर नवी मुम्बई–400 614.

5. जी.जी.एम (मेकैनिकल/इंजी/यातायात/संकेत एवं दूर संचार) डेडीकेटेड फ्रेट कोरीडोर कॉर्पोरेशन ऑफ इण्डिया लि0 नई दिल्ली–110 001.

ENCLOSURES:/ संलग्नकः

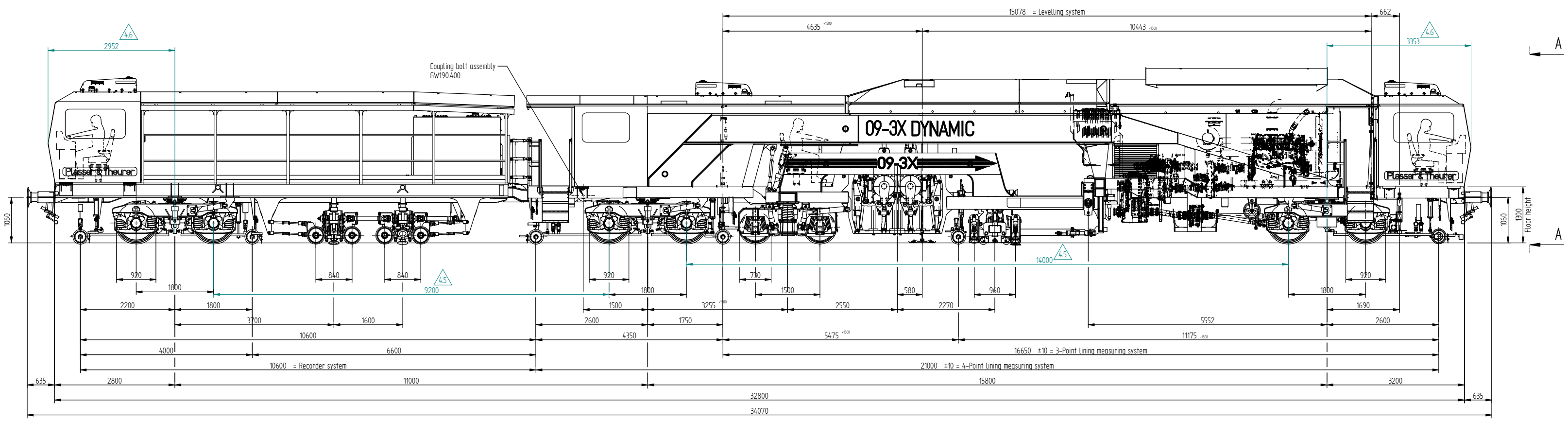
i)	Annexure-A
ii)	M/s Plasser GA Drg. No. UD00.1236-35 Version-4.
iii)	Bogie Arrangement: M/s. Plasser Drg. No. UD61.25200-SP1676 (Ver-2) & WN50-00 (Ver-2) for Drive Bogie and Drg. No. WN52-00 (Ver-2) for Running Bogie.
iv)	Suspension Arrangement: M/s Plasser Drg. No. UD62.5600 Type 3 & LK62.300-I.
v)	Railway Board's letter No. 2023/CEDO/SD/RS/11/09-3X-Dynamic-IR-DFCCIL dated 21.08.2023.
vi)	DFCCIL letter No. HQ/ENWC/PWC(PnE)/1/2020(6106) dated 01.02.2023.
vii)	Railway Board's letter No. 65/WDO/SR/26 dated 19/20.10.1966.
viii)	Para 708 (4) of Indian Railways Track Machine Manual, September -2019.

(**Signed**)
(नितिन मेहरोत्रा)
कार्यकारी निदेशक मानक/चालन शक्ति

Annexure-A

Salient features of Continuous Tamping Machine with integrated Dynamic Stabilizer, Model No. "09-3X Dynamic" supplied by M/s Plasser, India.

SN	Description	Details
1.	Principal dimensions of rolling stock	M/s Plasser GA Drg. No. UD00.1236-35 Version-4. a. Length over buffers : 34070 mm b. Bogie centre distance : 15800/11000mm c. Wheel base : 1800 mm, 1500 mm d. Max. axle load : 21 t e. Max. design speed- i) Own power : 80kmph ii) Train formation : 100kmph f. Weight : 130 t
2.	Bogie details and wheel	M/s. Plasser Drg. No. UD61.25200-SP1676 (Ver-2) & WN50-00 (Ver-2) for Drive Bogie and Drg. No. WN52-00 (Ver-2) for Running Bogie. Wheel dia : - (i) Main bogie:- New : 920mm Worn : 854mm (ii) Satellite bogie:- New : 730mm Worn : 710mm
3.	Suspension arrangement	M/s Plasser Drg. No. UD62.5600 Type 3 & LK62.300-I.
4.	Brake system details	Pnuematic Brake: M/s Plasser Drg. No. 56986-HS-E01.
5.	Details of Coupler and Buffer	Transition Coupler : RDSO Drg. No. 2000/8A/M. Buffer : RDSO SKETCH-98145.
6.	Engine and Transmission details	Transmission : Diesel-Hydraulic Make: Caterpillar Model: C18/ACERT/DITA/522kW Power : 522kW @2100 RPM Cooling Type : Water Cooled
7.	Safety Items	a) Fire extinguisher : one b) Hooter (manual) : two c) Jack (10t) : two d) Wooden Blocks : four e) Crow bars : four f) Hydraulic hand pump : one g) Emergency pneumatic/Hydraulic hose with end fittings : one



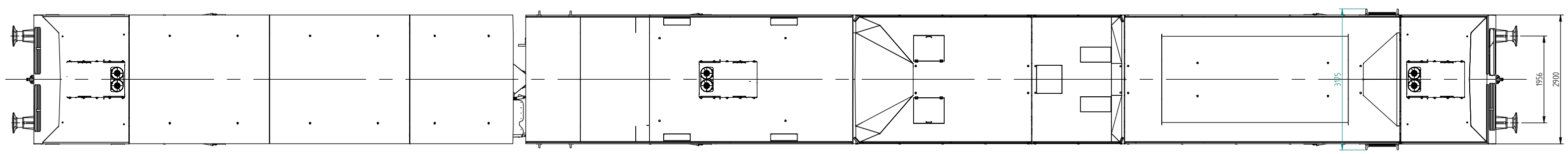
approx. 30 t

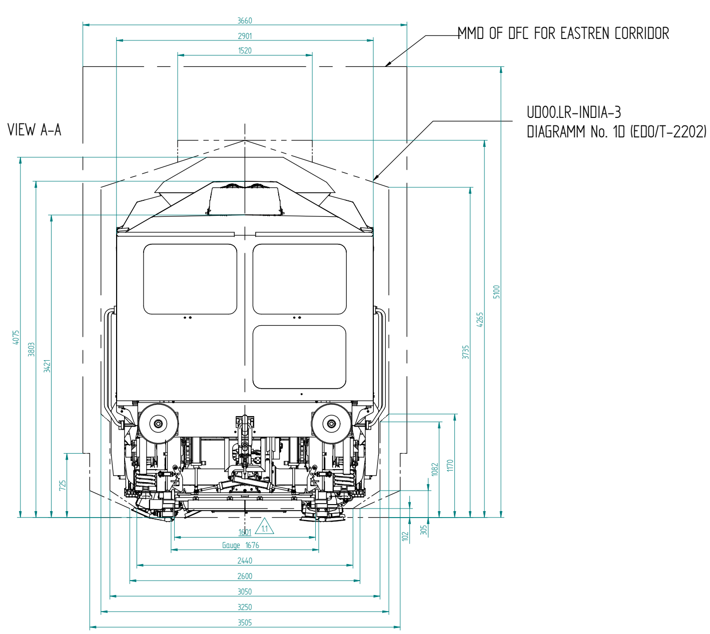
approx. 42t

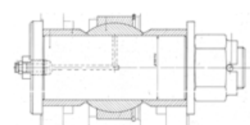
approx. 18 t

approx. 40 t

approximate total weight 130 t







Coupling bolt assembly
GW190.400

	Description	
1	New Wheel diameter	920 mm
2	Worn-out diameter	854 mm
3	Maximum Design Speed on Own power	80 kmph
4	Maximum Design Speed in train formation	100 kmph
5	Maximum axle load (Unloaded/ Loaded)	21t
6	Maximum axle gross weigth (Unloaded/ Loaded)	130t
7	Transmission system	Diesel- Hydraulic
8	Engine make, Model & power rating	Catalogue: CATERPILLER Model: C18/ACERT/ TT/A/522KW Power: 522KW@2100 RPM Cooling Type: Water Cooled

All dimensions are in millimeters [mm] unless otherwise specified

THE SHOWN MACHINE CONTAINS POSSIBLE ADDITIONAL EQUIPMENT

Letzte Änderung: SAT-Umspuraufhängung aktualisiert und nachgetragen

EDV Pos	Zeichnungsnummer / Teilenummer	Benennung	Abmessung / Bemerkung	Gew. (kg)
				126000

Plasser & Theurer
Export von Bahnbaumaschinen Gesellschaft m. b. H.
4021 Linz / AUSTRIA

	Datum	Name
Urheber	27.07.2020	Kastner Franz
Gezeichnet	27.01.2022	Cristian Kalsberger
Geprüft	27.01.2022	Stoff Silvio

Projektionsmethode · Oberflächenzeichen Ra / Rt · Allgemeintoleranz ISO 2768-1 mittel, ISO 2768-2, Tolerierung nach ISO 8015, Kanten ISO 13715

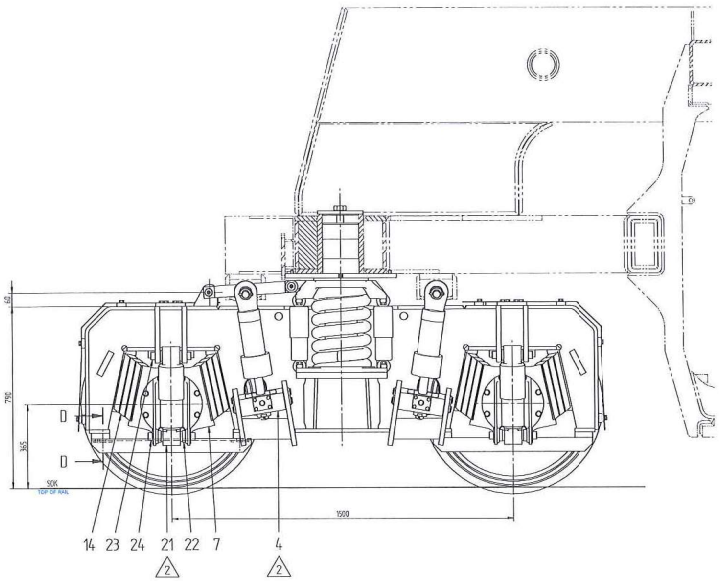
Sheet 1/2 · Maßst. 1:40 · Version 4

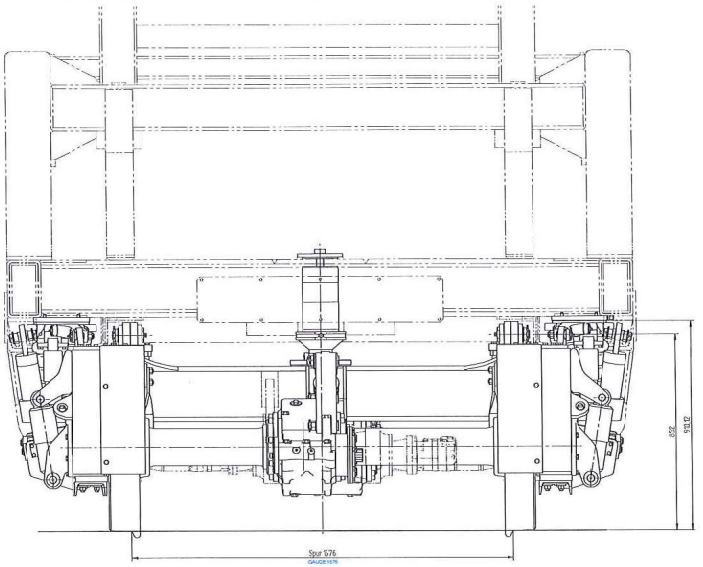
Erstmal eingebaut bei: 56986 · Vorbild: UD00.1236-34 · Dokumentenart:

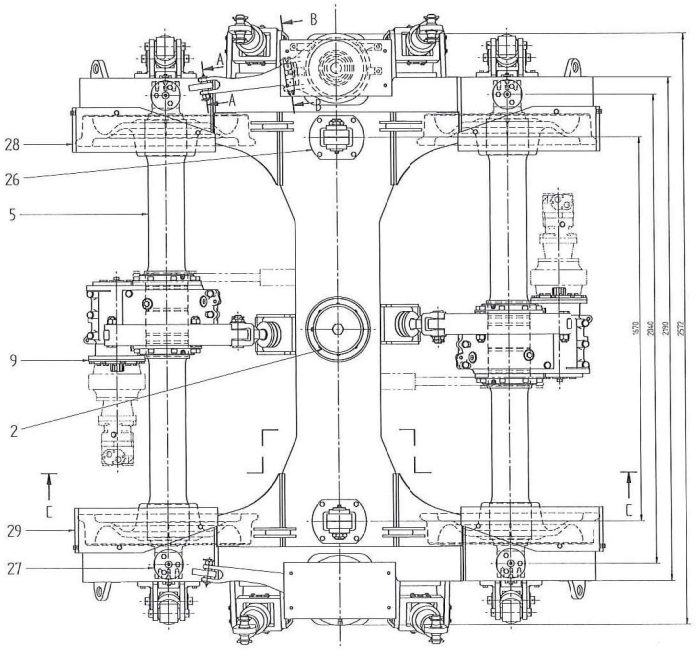
EDV Pos: 2089845
Zeichnungsnummer: UD00.1236-35
Benennung: 09-3X DYNAMIC
Continuos Tamping machine with integrated Dynamic stabilizer

A0

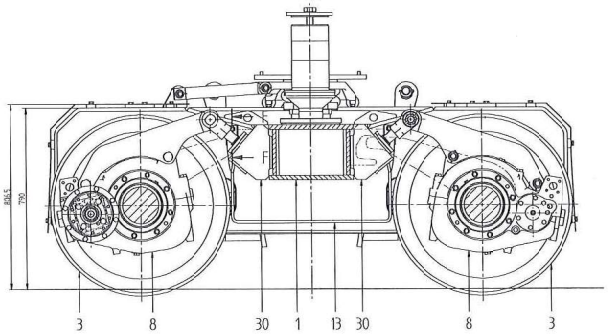
ISO 16016



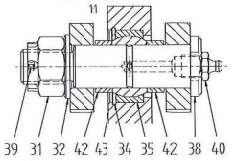


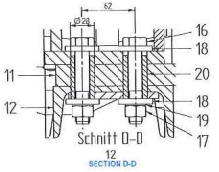


SECTION C-C
Schnitt C-C

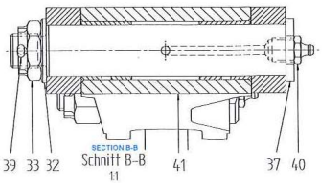


SECTION A-A
Schnitt A-A

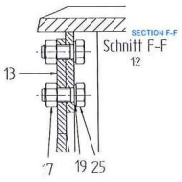


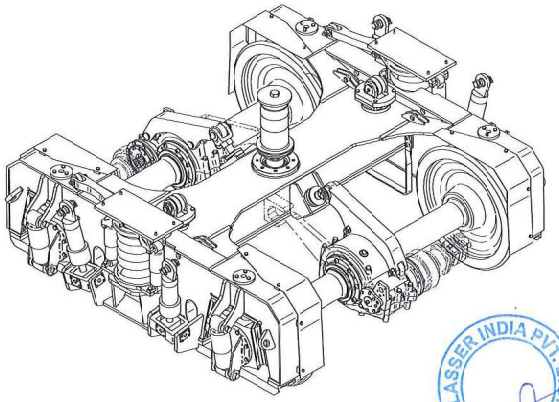


SECTION B-B
Schnitt B-B



SECTION F-F
Schnitt F-F





PLASSER INDIA PVT. LTD. NEW DELHI

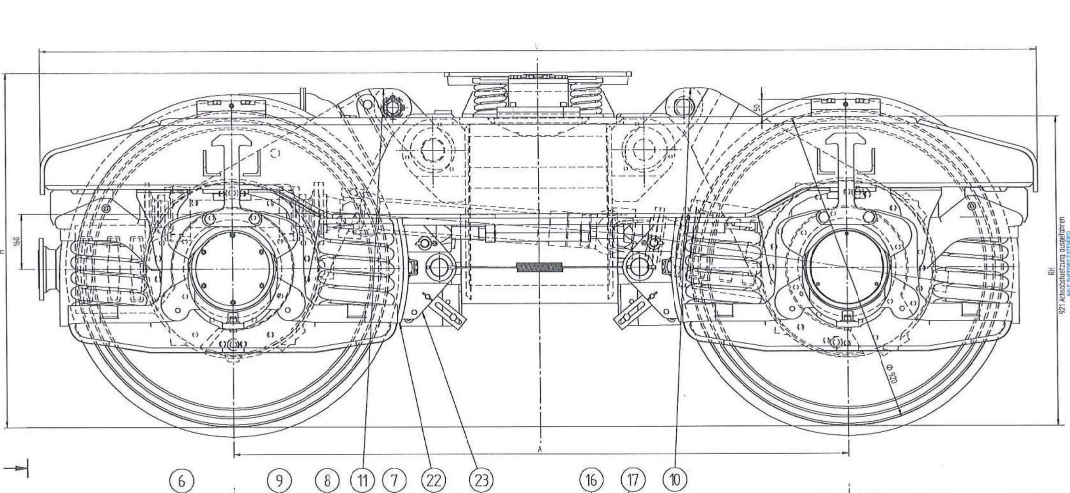
PLEASE REFER LATEST VERSION OF CIRCULAR "DESIGN/DE-EN/01" FOR NON-TRANSLATED TERMS/INSTRUCTIONS

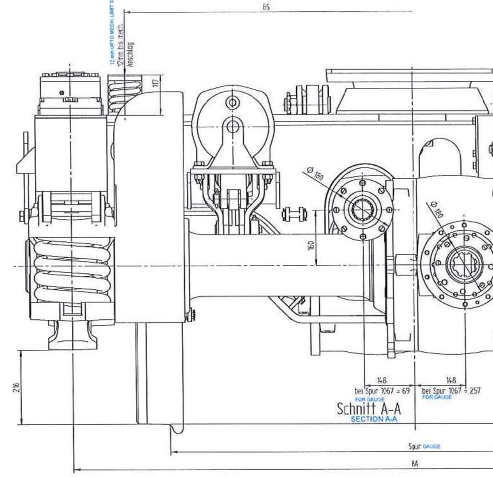
FIRST TIME INSTALLED IN
erstmals eingebaut:
WA 56985
Indien Dynamic 09-3X

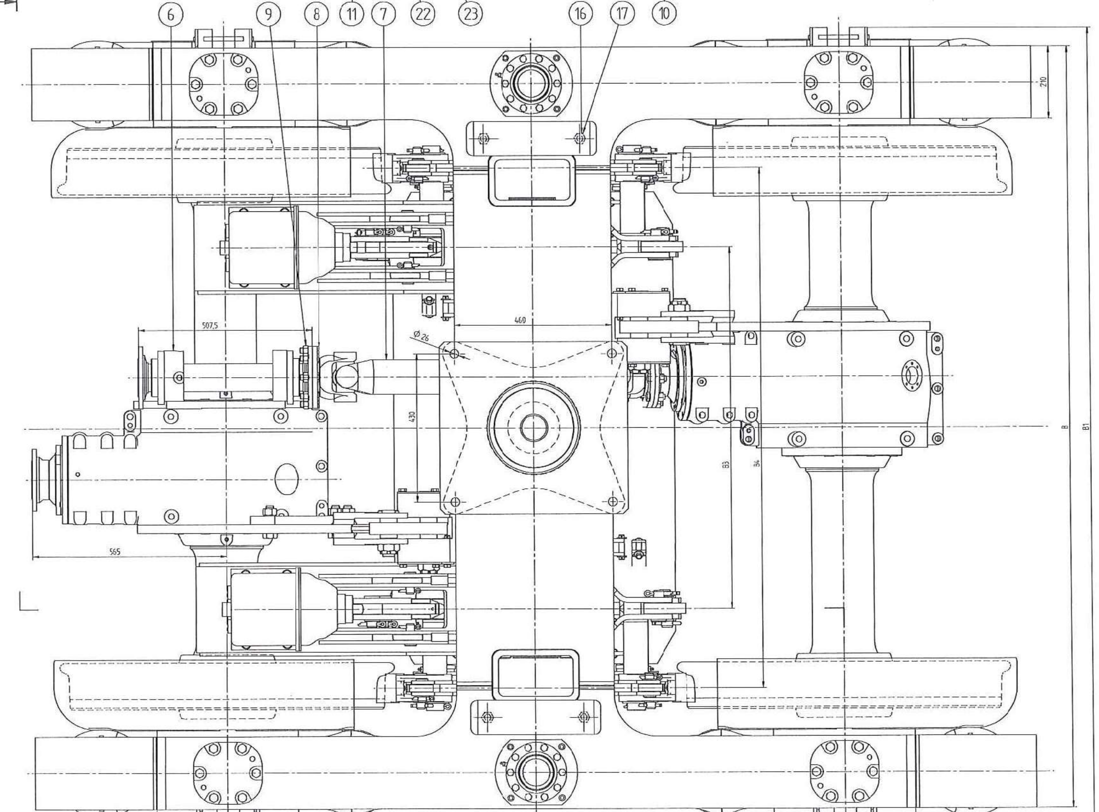
Passavant Siegen

TREIBDREHGESTELL
DRIVE BOGIE

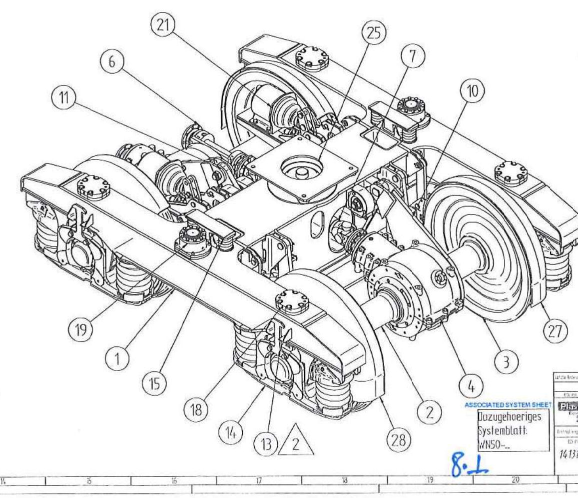
2K5278 U016125200-SP1676

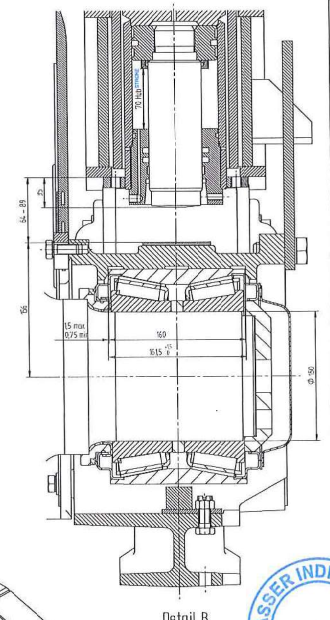






Pos	Benennung DESIGNATION
1	Drehgestellrahmen BOGIE FRAME
2	Laufachse RUNNING AXLE
3	Laufrad RUNNING WHEEL
4	Achsgetriebe AXLE GEAR
5	Antriebskegelrad/Tellerrad (nicht eingezeichnet) DRIVE PINION / CROWN WHEEL (NOT DRAWN)
6	Zwischenlager INTERMEDIATE BEARING
7	Gelenkwelle CARDAN SHAFT
8	Skt.Schraube HEXAGON BOLT
9	Ganzstahlmutterm.Klemmteil STEEL NUT WITH CLAMP
10	Drehmomentstuetzmontage TORQUE SUPPORT ASSEMBLY
11	Drehmomentstuetzmontage TORQUE SUPPORT ASSEMBLY
13	Achshalter AXLE HOLDER
14	Achslagerung Vollst. AXLE BEARING COMPLETE
15	Abstuetzung/UIC/ORE SUPPORT /UIC/ORE
16	Schnorr-Sicherungsscheibe LOCK WASHER
17	Sicherungsmutter LOCK NUT
18	Achsabstuetzzylinder AXLE SUPPORT CYLINDER
19	Abstuetzzylinder SUPPORT CYLINDER Federtopf SPRING POT Rollenabstuetzung ROLLER SUPPORT
20	Schwenkblockierung SWIVEL BLOCKING
21	Klotzbremse BLOCK BRAKE
22	Bremsklotz BRAKE BLOCK
23	Bremsklotzschuh BRAKE BLOCK SHOE
25	Drehpfanne PIVOT BEARING
27	Kotfluegelmontage LI MUDGUARD ASSEMBLY LHS
28	Kotfluegelmontage RE MUDGUARD ASSEMBLY RHS
30	Oelstandsanzeige (nicht eingezeichnet) OIL LEVEL INDICATOR (NOT DRAWN)
31	Oelstandsanzeige Vollst. (nicht eingezeichnet) OIL LEVEL INDICATOR COMPLETE (NOT DRAWN)
32	Entlueftung Vollst. (nicht eingezeichnet) VENTILATION COMPLETE (NOT DRAWN)





Detail B

1:2

A	L
1800	2920
2200	3320

H (ohne Unterlage) (WITHOUT BASE PLATE)	H (mit Unterlage) (WITH BASE PLATE)	RH
1005 - 1030	10017 - 1042	885 - 910

Spur GAUGE	B	B1	B3	B4	BA	BS
1067	1842	1952	682	1142	1632	1312
1435	2210	2320	1050	1510	2000	1680
1524	2300	2410	1140	1600	2090	1770
1600	2370	2480	1210	1670	2160	1840
1668/1676	2450	2560	1290	1750	2240	1920

REVISION: POINT 13 ADDED = AXLE HOLDER

ASSOCIATED SYSTEM SHEET
Dazugehoeriges Systemblatt:
WN50-...

Plasser Theurer

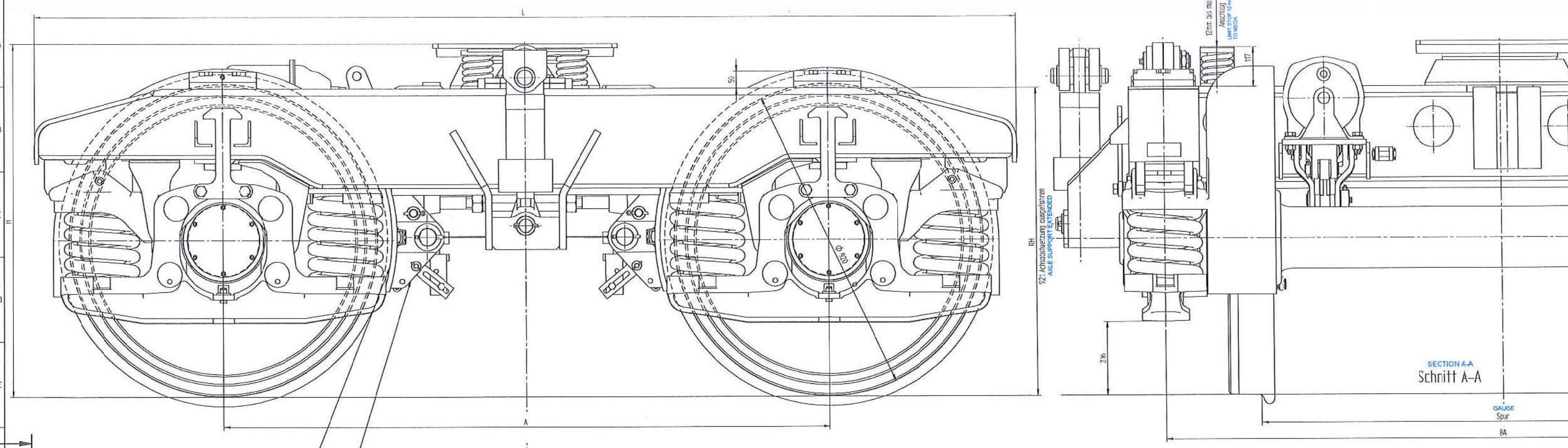
1413104 WN50-00

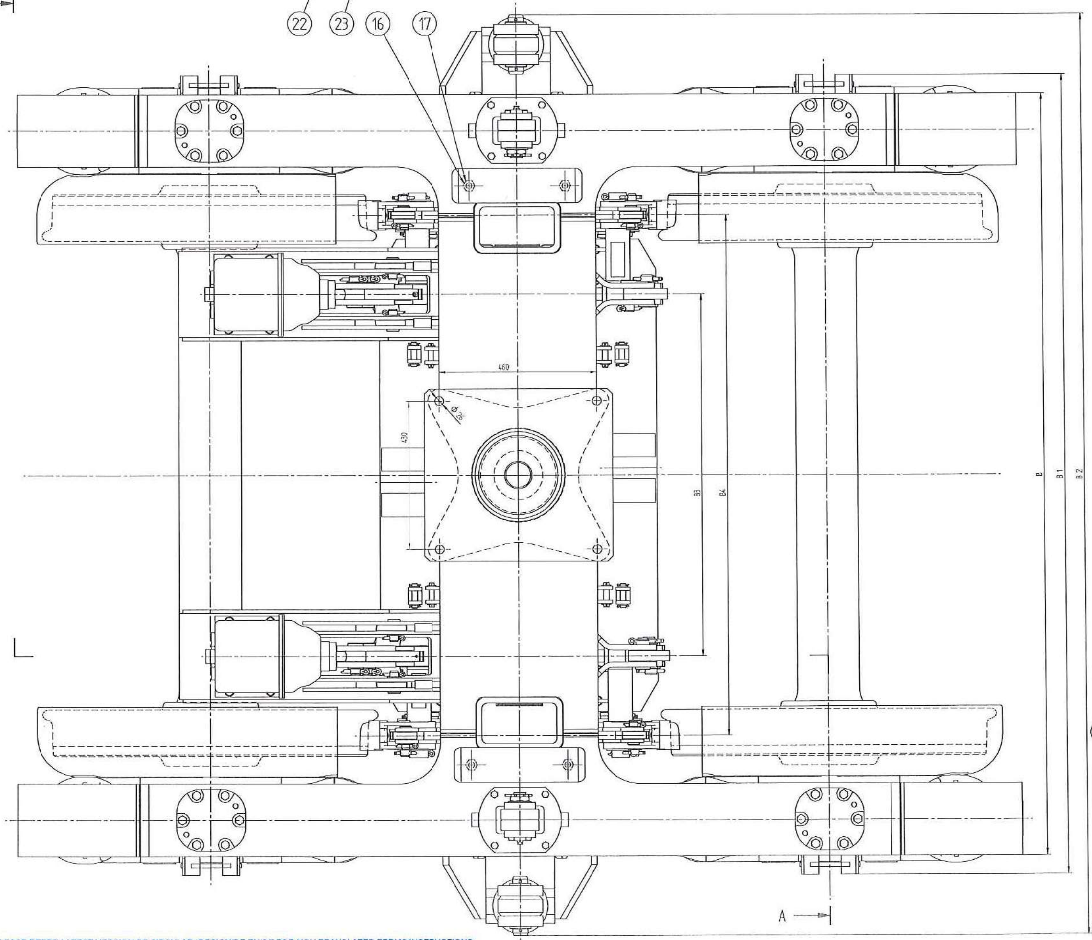
TRIEBDRENGESTELL
DRIVE BOGIE

PLASSER INDIA PVT. LTD. NEW DELHI

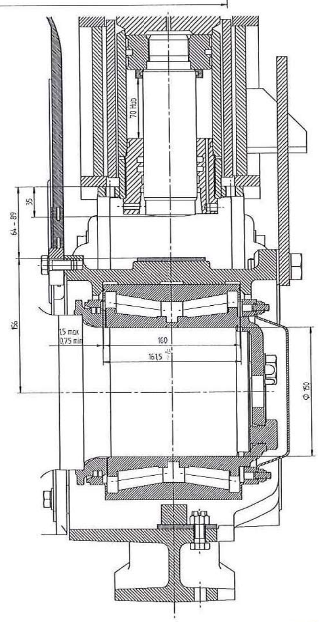
8.1

PLEASE REFER LATEST VERSION OF CIRCULAR "DESIGN/DE-EN/01" FOR NON-TRANSLATED TERMS/INSTRUCTIONS

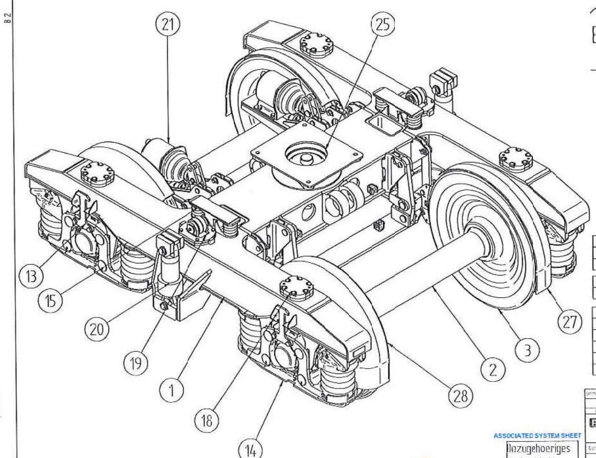




Pos	Benennung DESCRIPTION
1	Drehgestellrahmen BOGIE FRAME
2	Laufachse RUNNING AXLE
3	Laufrad RUNNING WHEEL
13	Achshalter AXLE HOLDER
14	Achslagerung Vollst. AXLE BEARING COMPLETE
15	Abstuetzung/UIC/ORE SUPPORT/UIC/ORE
16	Schnorr-Sicherungsscheibe LOCK WASHER
17	Sicherungsmutter LOCK NUT
18	Achsabstuetzzylinder AXLE SUPPORT CYLINDER
19	Abstuetzzylinder SUPPORT CYLINDER Federtopf SPRING POT Rollenabstuetzung ROLLER SUPPORT
20	Schwenkblockierung SWIVEL BLOCKING
21	Klotzbremse BLOCK BRAKE
22	Bremsklotz BRAKE BLOCK
23	Bremsklotzschuh BRAKE BLOCK SHOE
25	Drehpfanne PIVOT BEARING
27	Kotfluegelmontage LI MUD GUARD ASSEMBLY LHS
28	Kotfluegelmontage RE MUD GUARD ASSEMBLY RHS



Detail B
1:2



A	L
1800	2920
2200	3320

H (ohne Unterlage) (WITHOUT BASE PLATE)	H (mit Unterlage) (WITH BASE PLATE)	RH
1005 - 1030	10017 - 1042	885 - 910

Spur (GAUGE)	B	B1	B2	B3	B4	BA	BS
1067	1842	1952	2304	682	1142	1632	1312
1435	2210	2320	2672	1050	1510	2000	1680
1524	2300	2410	2762	1140	1600	2090	1770
1600	2370	2480	2832	1210	1670	2160	1840
1668/1676	2450	2560	2912	1290	1750	2240	1920

LAST REVISION: POINT 13 ADDED=AXLE HOLDER

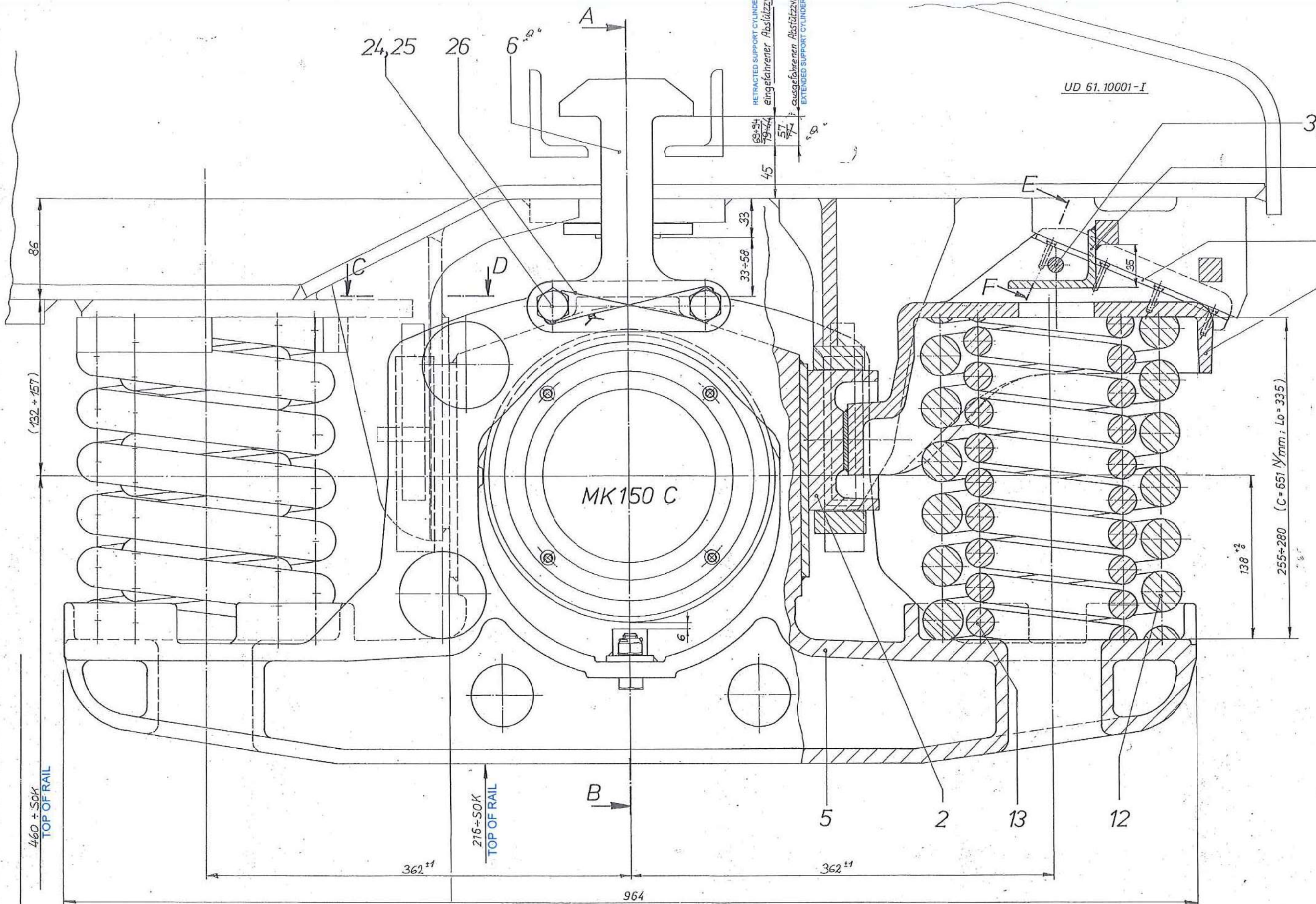
Plasser & Theurer

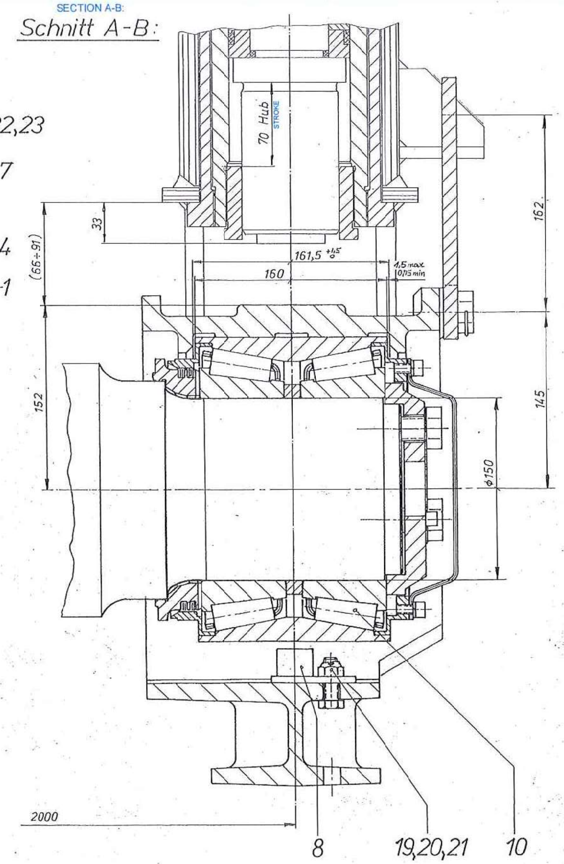
ASSOCIATED SYSTEM SHEET
Dazugehoeriges Systemblatt WN52-...

1413105 WN52-00

LAUFDREHGESTELL
RUNNING BOGIE

9



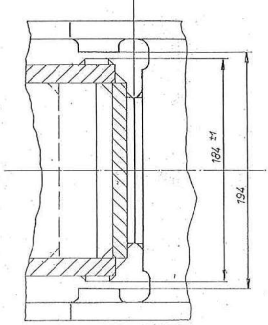


182645

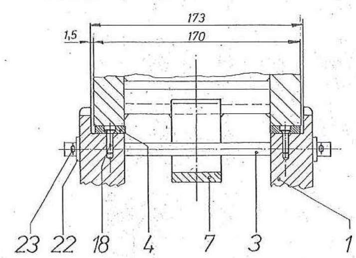
BOGIE FRAME UPPER EDGE (DEPENDS ON LOAD; WHEEL Ø920)
Drehgestellrahmenoberkante = 884 ÷ 909 mm (je nach Belastung ; Rad ϕ 920)
Drehgestellrahmenoberkante bei ausgefahrener Abstützung = 921 mm
BOGIE FRAME UPPER EDGE WITH EXTENDED SUPPORT=921mm

Querspielaufstellung : siehe UD 62.5600 VI
TRANSVERSE CLEARANCE:REFER UD62.5600 VI

SECTION C-D
Schnitt C-D:



SECTION E-F
Schnitt E-F:



			eigene Stkl. OWN BOM	
Stück	Benennung	Teil	MATERIAL Werkstoff	Zeichnungs-Nr.

Rauheit R_a	50	25 12,5	6,3 3,2 1,6	0,8 0,4 0,2	0,1 0,05 0,025
Rauheit R_t	250	160 100	32 16 8	4 2,5 1,6	1 0,55
Oberflächenz.	~	▽	▽▽	▽▽▽	▽▽▽▽

Stück	Benennung	Teil	Werkstoff MATERIAL	Zeichnungs-Nr.

Bst.	Änderung REVISION	Tag	Name
a	Neue Nr f. Pos 6 NEW NO. FOR POS.6	3.6.97	

Paßmaß	Abmaß	1989	Tag	Name
		Gez.	20.4.	
		Gepr.	-1-	

Diese Zeichnung und eventuelle Anlagen sind unser Eigentum und dürfen ohne unsere schriftliche Genehmigung weder vervielfältigt noch dritten Personen zugänglich gemacht werden.

FRANZ PLASSER
Industriegesellschaft m. b. H.
Bahnbaumaschinen
LINZ/D.

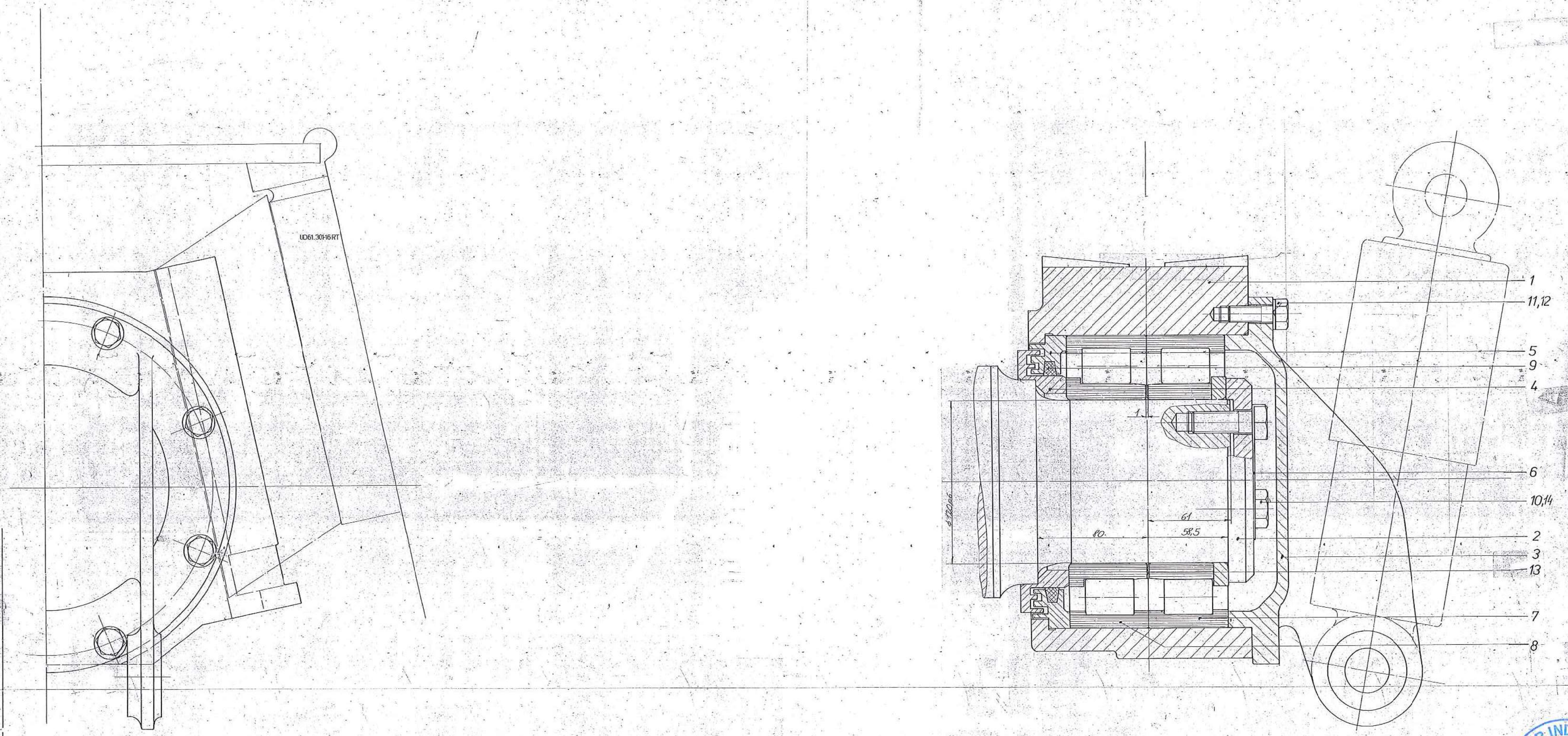
Maßstab 1:2

Maße ohne Toleranzangabe nach DIN 7168

AXLE BEARING COMPLETE
Achslagerung vollständig

UD 62.5600
Type 3

PLEASE REFER LATEST VERSION OF CIRCULAR "DESIGN/DE-EN/01" FOR NON-TRANSLATED TERMS/INSTRUCTIONS



Please refer latest version of Circular "Design/DE-EN/01" for non-translated terms/instructions

EINGESCANNT 2

Stück	Benennung	Teil	Werkstoff Material

Bst	Änderung Revision	Tag	Name
2	Pos. 11 Länge 35→40 geändert Pos. 11 length from 35→40 changed	12.7.93	Kastiw.

1989	Tag	Name
Gez.	30.3.	Kastiw.
Gepr.		

Maßstab 1:1

Diese Zeichnung und eventuelle Anlagen sind unser Eigentum und dürfen ohne unsere schriftliche Genehmigung weder vervielfältigt noch dritten Personen zugänglich gemacht werden.

FRANZ PLASSER
Industriegesellschaft m. b. H.
Bahnbaumaschinen
LINZ/D.

Achslagerung
Axle bearing

LK 62.300-I

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
(रेलवे बोर्ड Railway Board)

आज़ादी का अमृत महोत्सव

आज़ादी का अमृत महोत्सव

No. 2023/CEDO/SD/RS/11/09-3X-Dynamic-IR-DFCCIL **New Delhi, dated 21.08.2023**

The Director General
Research Designs & Standards Organisation,
Manak Nagar, Lucknow-226011.

Sub : Condonation of infringements w.r.t. IRSOD(BG), Revised-2022 and Standard Schedule of Dimensions (BG) Eastern and Western Dedicated Freight Corridors of Indian Railways, January 2013 by Continuous Tamping Machine with integrated Dynamic Stabilizer, Model- "09-3X Dynamic supplied by M/s Plasser, India as per GA Drawing No. UD00.1236-35 Version-4 & Wheel Profile Drawing No. WN01-730.184.IND.R7-3 Version-3

Ref : (i) CCRS office letter no. Q.14011/01/2023-24-TW, dated 04.08.2023
(ii) RDSO letter no. CT/TMM/GENERAL, dated 07.07.2023

With reference to RDSO above applications dated 07.07.2023 {ref.(ii)}, sent through the Chief Commissioner of Railway Safety, Lucknow; the sanction of Ministry of Railways, Railway Board is hereby communicated for condonation of infringements w.r.t. IRSOD(BG), Revised-2022 and Standard Schedule of Dimensions (BG) Eastern and Western Dedicated Freight Corridors of Indian Railways, January 2013 by Continuous Tamping Machine with integrated Dynamic Stabilizer, Model- "09-3X Dynamic supplied by M/s Plasser, India as per GA Drawing No. UD00.1236-35 Version-4 & Wheel Profile Drawing No. WN01-730.184.IND.R7-3 Version-3., as shown in detail enclosed with above mentioned application, detail of infringements are as under:

A. **Chapter-IV(D) of IRSOD**

i. **Clause 17 -** Minimum rigid wheel base for bogie truck of any vehicle by 300mm for satellite bogie (i.e. 1500mm instead of 1800mm)

B. **Chapter-IV & XI of DFC SSOD**

i. **Clause 4.4.4/11.4.4 -** Minimum rigid wheel base for bogie truck of any vehicle by 30mm for main bogie and 330mm for satellite bogie (i.e. 1800mm/1500mm instead of 1830mm)

21.08.23

ii. **Clause 4.1.2(ii)/11.1.2(ii)** - Minimum diameter on the tread of new wheel, measured at 63.5mm from wheel gauge face by 110mm for satellite bogie (i.e. 730mm instead of 840mm)

iii. **Clause 4.1.2(iii)/11.1.2(iii)** - Minimum diameter on the tread of worn wheel, measured at 63.5mm from wheel gauge face by 70mm for satellite bogie (i.e. 710mm instead of 780mm)

Further, above sanction of condonation is subject to the following stipulations :

"Instructions related to movement of the machine on Curves, Points and Crossing/Turnouts and Diamond Crossing should be incorporated in the Speed Certificate of its operation, whenever issued by the RDSO. In addition, issues related to movement of the machine in Train formation in case of emergency should also be considered & addressed and accordingly, instructions for movement in such cases should be clearly mentioned in the Speed Certificate."

21.08.23

(गौरव)
निदेशक सिविल इंजीनियरिंग(जी)/रेलवे बोर्ड
[Rly No. 030-47598, MTNL No.-011-23047598]
e-mail address :dceg@rb.railnet.gov.in

No. 2023/CEDO/SD/RS/11/09-3X-Dynamic-IR-DFCCIL New Delhi, dated 21.08.2023

Copy forwarded for information to:

1. The Chief Commissioner of Railway Safety, Compound of DRM/NER, Ashok Marg, Lucknow-226001 w.r.t. his endorsement No.Q.14011/01/2023-24-TW, dated 04.08.2023
2. Commissioner of Railway Safety, All Circles
3. ED Standards (Track-1), RDSO, Manak Nagar, Lucknow
4. PEDTk(M & Mc), Railway Board, New Delhi

21.08.23

(गौरव)
निदेशक सिविल इंजीनियरिंग(जी)/रेलवे बोर्ड

डेडीकेटेड फ्रेट कोरीडोर का रेशन ऑफ़ इंडिया लि.
डेडीकेटेड फ्रेट कोरीडोर
Dedicated Freight Corridor Corporation of India Limited
(भारतसरकारकाउपक्रम) (A Govt. of India Enterprises)
5th Floor, Supreme Court Metro Station Building Complex, New Delhi -110001

No. HQ/ENWC/PWC(PnE)/1/2020 (6106)

Dated: 01.02.2023

Pr. ED/Infra-I
RDSO
Manak Nagar
Lucknow-226011

Sub: DFCCIL's Request for undertaking Oscillation Trial of Plant & Equipment's (P&Es) i.e. Maintenance & Inspection Vehicles under Procurement [Contract Package-PE P-6] by DFCCIL and issuance of Speed Certificate for same.

Ref: (i) This Office letter of even no. dated 05.05.2022
(ii) ED/TM/RDSO Letter no. TM/HM dated 12.05.2022

In reference to (i) above, RDSO was requested to undertake the Oscillation Trial of certain Plant & Equipment's (P&Es) for issuance of Speed Certificates for the same. Further, vide letter referred at (ii) above, all the necessary documents mentioned in this letter for Duomatic Two Sleepers continuous Tamping Machine and Mobile Rail Grinding Machine were sent to RDSO for further necessary action.

In furtherance to above referred correspondences, the Oscillation Trial Documents, (in hard copy as well as in soft copy) for following other 06 nos. Plant & Equipment, mentioning proposed Transportation Code, Model No. and Layout Drawing No. duly checked by DFCCIL's Experts, are being sent as requested in the above mentioned subject.

S.No.	P&E(Machine) Description/Manufacturer	Proposed Transportation Code	Model No.	Layout Drawing No.
1 II	Rail Inspection Vehicle (for Mobile Rail Grinding Machine)- M/s Loram	RGM IV D	RIV- I 21	SNSK4904 (Rev-5)
2 I	Continuous Tamping Machine with Integrated Dynamic Stabilizer- M/s Plasser	CSM 3XDGS D	09-3X Dynamic	UD00.1236-35 (Ver-4)
3	Ballast Regulation Machine with Hopper- M/s Plasser	BRM D	USP 2010 SWS	BR00.147-6 (Ver-3)
4	Shoulder Ballast Cleaning Machine- M/s Plasser	SBCM D	SBCM FRM-85 F	RE00.063.01 (Ver-8)
5	Points and Crossing Tamping Machine- M/s Plasser	UNIMAT D	PCT UNIMAT 08-475/45	UD00.1116-10 (Ver-3)
6	Dynamic Stabilizer- M/s Plasser	DGS D	DGS 62N	GLF00.131 (Ver-3)

Hence, it is requested to issue Provisional Speed Certificate (PSC) and carry out Oscillation Trials of these machines.

Praveen Kumar 1/2/23
(Praveen Kumar)
ED/Asset Mgmt./WDFC

Encl.: as above

Copy: ED/TMM/RDSO for information please

SSRE/HM
02.02.2023
ARE/HM/TK

DTM-6
For A.A.

ARE/HM/HM
02/2/23

No.65/WDO/SR/26 (Railway Board) New Delhi, October 19/20, 1966

To

The General Managers,
All Indian Railways.

The G.M. & Chief Engineer,
Railway Electrification project, Calcutta.

The Chief Administrative Officer,
B.B.K. Railway Projects, Waltair.

Sub: Use of new type of Rolling Stock.

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Use of new type of rolling stock on existing Railway systems is governed by the Rules laid down in Chapter VI of the Rules for opening of a Railway. In terms of para 5 of this Chapter, applications for use of new type of rolling stock are required to be accompanied by a certificate to be signed by the Chief Engineer and Chief Mechanical Engineer of a Railway in a form specified therein.

2. The Board wish to point out that this certificate by the Chief Engineer and the Chief Mechanical Engineer (and Chief Electrical Engineer in case of electrical stock) is a positive act of certification in regard to track and locomotive maintenance standards for the speed indicated and a statutory obligation. The Officers signing the certificate are required to decide, on the basis of their personal knowledge and experience of the maintenance conditions of the track, locomotives or rolling stock, with due regard to relevant information available and the maintenance requirements of the new type of rolling stock, as to whether the operation of the particular type of locomotive or rolling stock on the relevant section of the Railway is safe and practicable with the facilities available on the Railway system. The RDSO merely recommend the maximum speed at which locomotives and rolling stock could be permitted to run on standard track under average maintenance conditions and this recommendation is made only on the basis of design features of the particular type of locomotive, rolling stock and assessment of their suitability from oscillation and other tests conducted by the RDSO. These certificates for speed issued by RDSO are meant merely to assist the CEs and CMEs/CEEs in deciding on the speed at which these engines/rolling stock may be permitted to run on their Railway system for the maintenance conditions obtaining on their Rlys.

3. A note on the subject prepared by the DG/RDSO is enclosed herewith in quadruplicate for guidance of your officers.

4. Receipt of this letter may please be acknowledged.

Sd/-
(B.S.D. Baliga)
Director, Civil Engineering,
Railway Board
New Delhi, October 19/20, 1966,

DA: As above.

No.65/WDO/SR/26

Copy to D.G. RDSO, Alambagh, Lucknow with reference to his letter No.MRA/573 of 16.8.1966.

Sd/-
(B.S.D. Baliga)
Director, Civil Engineering.
Railway Board.

Enclosure to Board's letter No.65/WDO/SR/26 dated 19-10-66.

....

Use of new types of Rolling Stock.

The rules for use of new types of rolling stock on existing railways are laid down in Chapter VI of the Rules for Opening of a Railway. According to para 5 of this Chapter, applications for use of new type of rolling stock arerequired to be accompanied by a certificate to be signed by the Chief Engineer and the Chief Mechanical Engineer of the Railway in the form specified in para 5(a)(ii). It should be clearly understood that this certificate by the Chief Engineer and the Chief Mechanical Engineer(Chief Electrical Engineer in the case of Electrical Stock) is a positive act of certification and a statutory obligation.

2. The Chief Engineers and Chief Mechanical Engineers (Chief Electrical Engineers in the case of electric stock) are required to decide on the basis of their personal knowledge and experience of track, locomotives or rolling stock with due regard to relevant information available of track and rolling stock and their maintenance requirements, as to whether the operation of particular locomotive or rolling stock is safe and practicable with the facilities provided on the railway system. It may be emphasized that respective Heads of Departments are required to certify annually regarding the sound condition of the track and rolling stock in operation in terms of para 1522 of Indian Railway Code for Accounts department.

3. Prior to the setting up of testing facilties on the Indian Railways, the safety certificate for operation of locomotives and rolling stock was issued by the Chief Engineer and Chief Mechanical Engineers on the basis of their personal knowledge and experience and on the basis of the recommendation for speed limit by the consulting engineers, who available. With the build up of increased design and testing facilities in RDSO, due recommendation is made by RDSO on the basis of design features of particular stock and assessment of their stability from oscillation tests conducted on main line track in normal state of maintenance and not subjected to speed restriction.

4. R.D.S.O. advises the Railway of the speed at which different types of locomotive and rolling stock can be permitted to run on different track structures. This is done in two stages:

(a) preliminary speed; and

(b) final maximum speed.

The preliminary speed is based on a study of the design characteristics of the vehicle and experience of performance of similar designs in India and/or abroad. Such speed would be generally lower than the sectional maximum speed and it would not be difficult for CEs and CMEs to arrive at a decision in issuing the Safety Certificate. Further, it is up to the CEs to decide whether any particular sections or routes require the imposition of a restriction on a generally sanctioned speed. Such a decision has to be based purely on the personal knowledge and experience of the engineers of the zonal railways.

5. It is, however, necessary to keep a watch on the performance of vehicles permitted on such preliminary speed limit to gather experience for guidance in determination of the final maximum speed both by RDSO and Railways the former taking this aspect into account along with the review of the oscillation test, and the latter while issuing the certificate for the final maximum speed. The final maximum speed is determined by the RDSO on review of the oscillation tests generally conducted for new designs and on confirmation of the suitability of the stock from the point of view of strength of track and bridges, although such investigation is made even at the initial stage of design. The oscillation trials are conducted with a view to obtaining data relating to the riding characteristics of the vehicle at the specified speeds. Such tests include aspects, such as, vertical wheel/axle load and lateral force ratio and vertical and lateral acceleration of the vehicle. The studies are aimed at assessing the possibilities of track distortion, wheel mounting, riding comforts etc. For conducting these tests, a section of main line track is selected over which there are no temporary restrictions and which is considered by the railway as being in a generally run down condition for main line standards but without speed restriction. The vehicle is tested generally for new and worn clearance conditions and also where relevant for operation in the forward or back-ward direction. The vehicle selected is one of those in average condition of normal maintenance. The tests are conducted on speeds usually 10% higher than that to which it is proposed to be certified.

On the basis of the theoretical studies and investigations of the tests as indicated and the analysis of the test results, the RDSO recommends the maximum speeds up to which a vehicle may be permitted in normal traffic operation. The certificate of the RDSO though issued by the Director Standards(Mech.) is the final result of studies conducted by the various concerned

Directorates such as Civil Engineering, Carriage and Wagon Motive Power etc. This recommendation of the RDSO is meant to be used as guidance by the CEs and CMEs of the zonal railways in formulating their own certificates to be furnished to the ACRS. It is upto Chief Engineer, Chief Mechanical Engineers and Chief Electrical Engineers to consider on the basis of their personal knowledge and experience of track locomotive and rolling stock and their maintenance requirements whether the conditions prevailing are such as to require a reduction in the speed of the vehicles in normal traffic operation.

6. In the case of certification of speeds by the CEs and CMEs up to 105 Km/hr., it is neither feasible nor it is considered necessary that any more guidance than that at present being given by RDSO should be available to them in normal cases in arriving at their conclusions in the matter of formulation of their certificates to the ACRS. In the case of operation at higher speeds, it is proposed that in addition to the data at present being furnished, copies of track recording charts of the track over which the tests were conducted would also be incorporated in the test reports and made available for reference to the CEs and CMEs. It has already been accepted by the Board that in the case of high speed track (speed above 105 km/hr) track recording would be done at intervals of about 6 months. A comparison of the track recording for the test track with the track recording of the routes over which the high speeds are to be run would be an additional guidance to the CEs and CMEs in the formulation of their certificates.

In conclusion, it may be pointed out that the statutory obligation of certification of speeds is that of the CEs and CMEs/ and CAEs of the zonal railways. In discharging these functions, the CEs and CMEs/CAEs are assisted by the RDSO. The extent of such assistance would normally depend on the speeds involved and the facilities available with the RDSO [illegible]. The procedures, at present, followed are considered satisfactory for speeds upto 105 km/hr. For higher speeds, recording of characteristics of the test track would also be made available to the zonal railways for purpose of comparison with the actual track conditions prevailing from time to time.

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involve large number of labour working with the machine. Hence, extra care is necessary as detailed below, to ensure safety of workers.

(b) Hooters should be provided on the track machines. These hooters should be used to warn the staff working on/around the track machine about approaching train on adjoining track. Remote controlled hooters shall also be deployed as an added precaution by SSE/JE/P.Way so that lookout man standing around 150 m away from the track machine can also operate the hooter to warn the staff suitably. SSE/JE/TM shall also put on the flasher light on as an added precaution till the train on adjacent line has passed the site of work.

(c) Caution order of 30 to 50 kmph with instructions to whistle freely should be imposed on the adjacent line, during the duration of block, for the safety of workmen, depending upon the site conditions and visibility.

(8) **Checking Infringement After Work -** The vertical and lateral clearance for OHE, signal post and any other structure should be checked and adjusted before clearing the block. It shall be ensured by SSE/JE (P.Way) working with track machine that there should be no infringement to signal post, OHE and any other structure as per schedule of dimensions.

708 Failure and Accidents of Track Machines

(1) **Protection in case of Breakdown -** In the event of breakdown, the track machines shall be protected as per GR 6.03 and SR there to by the machine staff, as directed by machine in-charge.

(2) **Failures in Block Section -** Failures in block sections of the track machines will be treated as accident under class 'J – Equipment failure'.

(3) **Accidents involving Track Machine -** Accidents involving track machines shall be treated as train accidents under the appropriate class and action shall be taken as per the rules in force.

(4) **Action in case of Failure in Block -** In case of failure of track machine in block section, immediate information with details should be conveyed to the ADEN/DEN/Sr.DEN of the section and the AXEN/XEN/Dy.CE/Line/TM. SE/JE/TM should decide in consultation with SSE/JE (P. Way), the action to be taken to clear the section. They may decide to push the disabled unit to the nearest station provided the brake power is in good condition. Otherwise, intimation shall be sent to the nearest Station Master asking for a light engine to tow the unit.

(5) **Request for ART/Breakdown -** In case, SSE/JE (P. Way) and/or SSE/JE/TM feels clearance of section is going to take long time, the assistance of Road Break-down or Accident Relief Train shall be asked for immediately. Meanwhile SSE/JE/TM in-charge on the machine shall take necessary action to rectify the defect(s). SSE/JE (P. Way) shall provide all necessary assistance.