भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
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Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310

No. TM/HM/11

Date: 24.12. 2018

महा प्रबन्धक (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– 1100 01
4. पूर्वोत्तर रेलवे, गोरखपुर– 237 012
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, गार्डनरीच, कोलकाता– 700 043
9. पश्चिम रेलवे, चर्चगेट, मुम्बई– 400020
10. उत्तर मध्य रेलवे, इलाहाबाद– 211 001
11. उत्तर पश्चिम रेलवे, जयपुर– 302 006
12. पूर्व मध्य रेलवे, हाजीपुर– 844 101
13. पूर्व तटीय रेलवे, बी.डी.ए. रेन्टल कालोनी, चन्द्रशेखरपुर, भुवनेश्वर– 751 023
14. दक्षिण पश्चिम रेलवे, हुबली– 580 023
15. पश्चिम मध्य रेलवे, जबलपुर– 482 001
16. दक्षिण पूर्व मध्य रेलवे, आर. ई. आफिस काम्प्लेक्स, बिलासपुर–495 004

Sub: Final maximum permissible speed for Utility Track vehicle, Transportation Code 'CUTV/OEPL/H' supplied by M/s OEPL, Hyderabad.

Ref: i) This office provisional speed certificate No.TM/HM/11/14/UTV dt. 17.07.2015.

ii) CCRS letter No. Q17016/01/2017-18-TW dated 05.05.2017.

1.0 Utility Track Vehicle supplied by M/s OEPL, Hyderabad to their drawing Nos. 222 00 00 00 and 222 03 00 01 Rev.1 is a self propelled vehicle and is used for picking up released material behind track relaying train. Railway Board has allotted Transportation Code for the machine as CUTV/OEPL/H vide letter No. 87/M(C)/202/10 Vol (iv) pt (vii) dated 11.09.2018.

1.1 The vehicle is four wheeler having wheel diameter 915 mm, bogie rigid wheel base 6500 mm and maximum axle load 13.5t and having both axles powered. The design speed of the vehicle is 90 kmph when running on its own power and 80 kmph when running in train formation. The salient features of UTV track Machine supplied by M/s OEPL Hyderabad, are given in Annexure-I.

1.2 Utility Track Vehicle supplied by M/s OEPL, Hyderabad to their drawing Nos. 222 00 00 00 and 222 03 00 01 Rev.1 was permitted to run provisionally at maximum speed of 60 kmph when running on its own power and 50 kmph when running in train formation as a dead vehicle as per RDSO Provisional Speed Certificate No. TM/HM/11/14/UTV dt. 17.07.2015.

1.3 As per provision of policy circular no.6 governing procedure for issue of speed certificate, CCRS was requested vide letter No. TM/HM/11/7 dated 29.03.2017 to accord approval for dispensation with detailed oscillation trials for issue of final maximum permissible speed certificate. The dispensation has been granted vide CCRS letter No.Q.17016/01/2017-18-TW dated 05.05.2017.

2.0 Based on the above, it is certified that operation of the Utility Track Vehicle supplied by M/s OEPL, Hyderabad to their Drg. Nos. 222 00 00 00 and 222 03 00 01 Rev.1, Transportation Code 'CUTV/OEPL/H' may be permitted to run at a maximum speed of 60 kmph when running on its own power and 50 kmph when running in train formation as a dead vehicle with goods train/ passenger train subject to the following conditions:

2.1 **TRACK:**

2.1.1 The track shall be to a minimum standard of 52kg rails on sleepers laid to M+7 density and depth of ballast cushion below sleepers of 250mm, which may consist of at least 100mm clean and the rest in caked up condition, on compacted and stable formation.

2.1.2 For track maintained to lower standard than that mentioned above, the Chief Engineer concerned shall decide the lower maximum permissible speed. In this connection, Railway Board's letter No.65/WDO/SR/26, dt.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 shall suitably restrict the maximum permissible speed depending on the local conditions.

2.1.3 The maximum speed on curves shall be decided on the basis of the existing provisions of Indian Railways Permanent Way Manual Second Reprint 2004.

2.1.4 The welds shall be protected by joggled fish plates as per provisions of Para 6.4 and Para 8.14 of USFD Manual and Para 6.3 of AT welding manual and other policy instructions of Railway Board. The maintenance of Rails and Rail joints shall be ensured as per Para 250 & 251 of IRPWM. 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.

2.1.5 Zonal Railway 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 chapter-III of IRPWM-2004 regarding permanent way renewals.

2.2 **BRIDGES:**

2.2.1 The clearance refers to bridges "standard spans" with standard design of girders, slabs, pipe culverts, piers and abutments etc. issued by RDSO for BGML, RBG and MBG-1987 standard loadings. However, the bearings of span 76.2m (clear) designed for BGML standard loading as per RDSO's Drg. No. BA-11154 shall be strengthened by providing two additional anchor bolts.

2.2.2 Superstructures and Bearings of "Special Spans" (designed and constructed by Zonal Railways based on site requirements) including all arches and substructure of all bridges (all Standard Spans & Special Spans) are to be examined under the directions of the Chief Bridge Engineer concerned and certified safe with respect to current Indian Railway Standard Codes with up to-date correction slips.

2.2.3 The clearance is subject to following parameters of vehicle:

i) Maximum axle load : 13.5t
ii) Maximum tractive effort at rail level per axle : 3.45t
iii) Maximum braking force at rail level per axle : 2.332t
iv) C.G. height from rail level : Not exceeding 1830 mm

2.2.4 In train formation, specific restrictions are applicable as indicated in relevant speed certificates of hauling locomotives/attached wagons, issued by RDSO.

2.2.5 The above clause have been arrived considering bridges are in physically sound condition. In case the bridges are not in satisfactory physical condition, necessary speed restriction to be imposed by concern Chief Bridge Engineer of Zonal Railway.

2.2.6 Location of bridges on which speed restrictions are imposed shall be notified by the Railways and incorporated in the working time table.

## 2.3 SIGNALLING:

2.3.1 Provisions of GR, SR, SEM and all extant instructions issued from time to time, shall be complied with.

2.3.2 The speed of vehicle while running through the station shall be decided by the Zonal Railways depending upon type of Track relay used, type of route release circuit adopted, length of FVT track circuit provided ahead of last stop signal and standard of interlocking existing at the station.

2.3.3 The condonation regarding infringements in schedule of dimensions shall be obtained in accordance with local conditions, before movements.

2.3.4 The condemning (worn out) wheel dia shall not be below 700mm for proper operation of axle counter.

## 2.4 ROLLING STOCK:

2.4.1 Before starting operation of the machine, Engineering Department of the Railway shall arrange to certify the safety and proper maintenance of the rolling stock and ensure the track worthiness.

2.4.2 Brakes of the vehicle shall be in perfect working condition during the operation.

## 2.5 TRACTION INSTALLATION:

2.5.1 In 25kv AC traction area, the CEE of the Railway shall have to ensure that the minimum height of Contact Wire and electrical clearances as stipulated in provision of Chapter-V and V-A, Electrical Traction 'Schedule of Dimensions of 1676mm Gauge (BG) revised 2004' with latest Addendum & Corrigendum Slips is not violated and strictly followed to ensure its safe running.

2.5.2 In addition to above, the 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.

2.5.3 Any parts which are meant for operation/ movement during operation/ maintenance provided on the vehicle shall be in closed and locked down condition during movement and while standing under 25 KV AC OHE such that no parts of the vehicle extended beyond the MMD envelop & also to ensure minimum electrical clearance as per SOD.

2.6 **GENERAL:**

2.6.1 Maximum speed on point and crossings shall be as per item (6) of para 1227 of Indian Railways permanent way Manual-1986 (reprinted in 1999).

2.6.2 The design of the 'Utility Track Vehicle supplied by M/s OEPL Hyderabad, infringes clause 5,15,19(a) ,20(a) and 21(a) of Chapter IV(A) of BG metric Schedule of Dimensions (SOD) - 1973. However, the profile of the vehicle is within maximum moving dimension of Schedule of Dimensions-1929. Railway Board has condoned the infringements vide their letter No. 2004/CEDO/SR/20 dated 04.01.2005.

2.6.3 All the permanent and temporary speed restrictions in force and those that may be imposed from time to time due to track, bridges, curves, signalling and interlocking etc. shall also be observed.

2.6.4 When the vehicle is being moved either on its own power or hauled in a train formation as a dead vehicle, 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.

2.6.5 Competent track machine staff who can apply the vehicle brakes in case of train parting shall escort the vehicle while running in train formation as a dead vehicle.

2.6.6 The working of Maintenance Machine shall be as per provision of para 1227 of IRPWM reprint 2004.

संलग्नक:

i. Annexure-I
ii. M/s OEPL,Hyderabad Drg. Nos. 222 00 00 00 and 222 03 00 01 Rev.1
iii. Railway Board's letter No. 2004/CEDO/SR/20 dated 04.01.2005.
iv. Railway Board's letter No. 87/M(C)/202/10 Vol (iv) pt (vii) dated 11.09.2018.
v. CCRS letter No.Q.17016/01/2017-18-TW dated 05.05.2017.
vi. Railway Board's letter No.65/WDO/SR/26, dt.19/20.10.1966.
vii. Para 6.4 and Para 8.14 of USFD Manual
viii. Para 6.3 of AT welding manual
ix. Para 250, 251& Ch III of IRPWM-2004
x. Maintenance Manual for Utility Track vehicle Supplied by M/s OEPL, Hyderabad.

(सी. मधुसूधन राव)
कार्यकारी निदेशक मानक / चालन शक्ति

प्रतिलिपि:

1. सचिव (मेकैनिकल/इंजीनियरिंग (जी.), रेलवे बोर्ड, रेल भवन, नई दिल्ली–110 001
2. मुख्य रेल संरक्षा आयुक्त, अशोक मार्ग, लखनऊ–226001
3. महा प्रबन्धक (मेकैनिकल/परिचालन/संकेत एवं दूर संचार)

i. मध्य रेलवे, छत्रपति शिवाजी टर्मिनस, मुम्बई– 400 001
ii. पूर्व रेलवे, फेयरली प्लेस, कोलकाता– 700 001
iii. उत्तर रेलवे, बडौदा हाऊस, नई दिल्ली– 1100 01
iv. पूर्वोत्तर रेलवे, गोरखपुर– 237 012
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, गार्डनरीच, कोलकाता– 700 043
ix. पश्चिम रेलवे, चर्चगेट, मुम्बई– 400020
x. उत्तर मध्य रेलवे, इलाहाबाद– 211 001
xi. उत्तर पश्चिम रेलवे, जयपुर– 302 006
xii. पूर्व मध्य रेलवे, हाजीपुर– 844 101
xiii. पूर्व तटीय रेलवे, बी.डी.ए. रेन्टल कालोनी, चन्द्रशेखरपुर, भुवनेश्वर– 751 023
xiv. दक्षिण पश्चिम रेलवे, हुबली– 580 023
xv. पश्चिम मध्य रेलवे, जबलपुर– 482 001
xvi. दक्षिण पूर्व मध्य रेलवे, आर. ई. आफिस काम्प्लेक्स, बिलासपुर–495 004

संलग्नक:

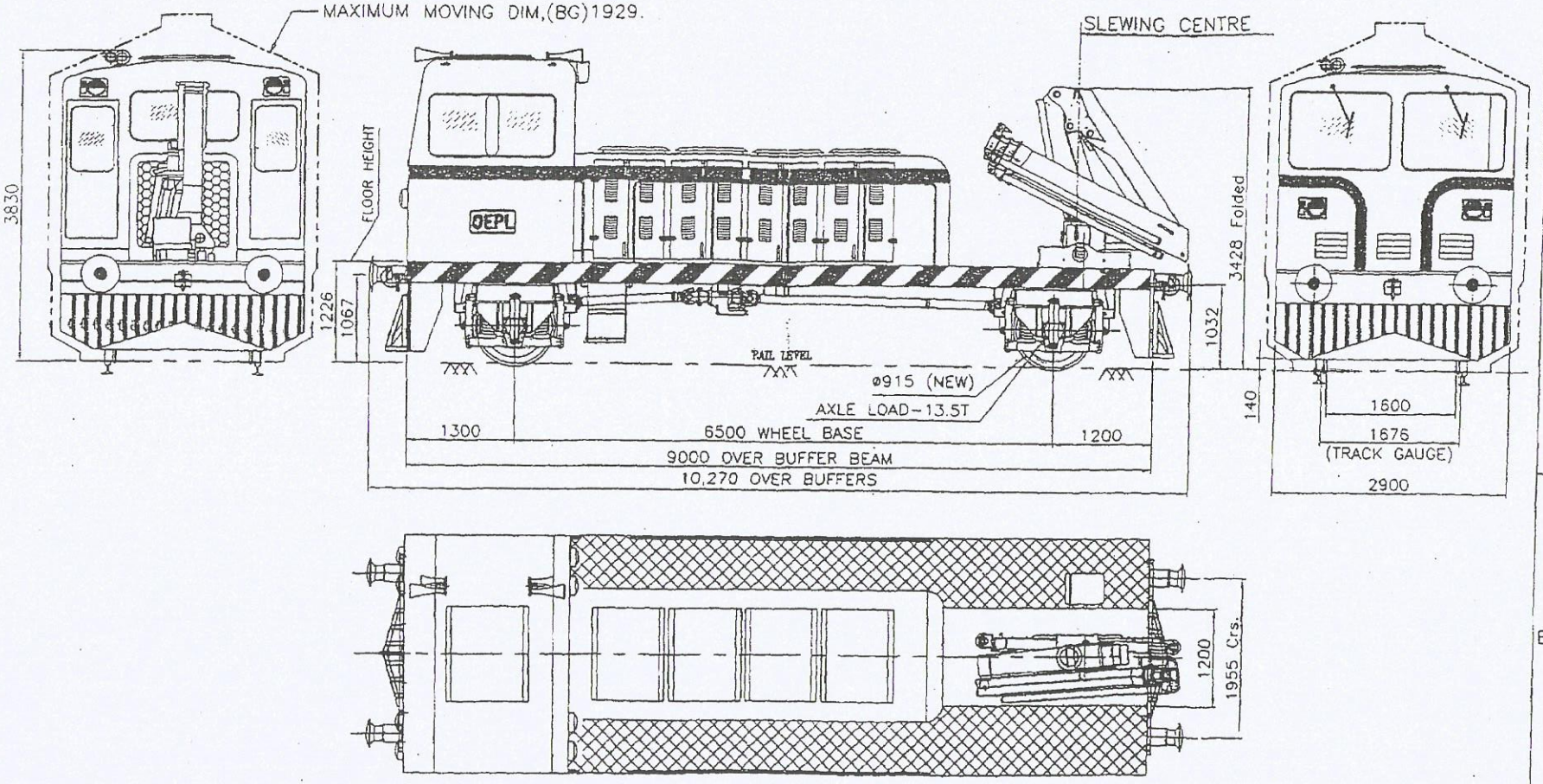
i. Annexure-I
ii. M/s OEPL,Hyderabad Drg. Nos. 222 00 00 00 and 222 03 00 01 Rev.1
iii. Railway Board's letter No. 2004/CEDO/SR/20 dated 04.01.2005.
iv. Railway Board's letter No. 87/M(C)/202/10 Vol (iv) pt (vii) dated 11.09.2018.
v. CCRS letter No.Q.17016/01/2017-18-TW dated 05.05.2017.
vi. Railway Board's letter No.65/WDO/SR/26, dt.19/20.10.1966.
vii. Para 6.4 and Para 8.14 of USFD Manual
viii. Para 6.3 of AT welding manual
ix. Para 250, 251& Ch III of IRPWM-2004
x. Maintenance Manual for Utility Track vehicle Supplied by M/s OEPL, Hyderabad.

(सी. मधुसूधन राव)
कार्यकारी निदेशक मानक/चालन शक्ति

**Annexure-I**

## Salient features of Utility Track Vehicle supplied by M/s OEPL, Hyderabad.

| S.No. | Description | Details |
|---|---|---|
| 1 | Principal dimensions of rolling stock | a) Drg. Nos. 222 00 00 00 and 222 03 00 01 Rev.1<br>b) Length over buffers : 10270mm<br>c) Wheel base : 6500mm<br>d) Max. axle load : 13.5t<br>e) Wheel dia. : 915mm<br>f) Max. design speed-<br>i) Own power : 90kmph<br>ii) In train formation : 80kmph<br>g) Weight : 27t approx. |
| 2 | Brake system details | Pneumatic block brake |
| 3 | Details of coupler and buffer | Coupling : Hook type to RDSO Sketch No.79061 & 79067. |
| 4. | Safety items | a) Fire extinguisher : One<br>b) Hooter (manual) : two<br>c) jack (10t) : two<br>d) Wooden Blocks : four<br>e) Crow Bars : four<br>f) Hydraulic hand pump : one<br>g) Emergency pneumatic/ hydraulic hose with end fittings : one |




RAILWAY BOARD, INDIAN RAILWAYS (NEW DELHI)
ORDER No.: 2002/TRACK-III/MC/16(II) DATED: 28/07/2003

OVIS EQUIPMENTS Pvt.Ltd.,
SHED NO.43, IDA PHASE II, CHERLAPALLY,
HYDERABAD - 500 051 A.P. INDIA.

**OEPL**

| | | | |
|---|---|---|---|
| CUSTOMER: RAILWAY BOARD, INDIAN RAILWAYS (NEW DELHI) | | | EQUIPMENT: UTILITY VEHICLE |
| DATE: 05/03/04 | SCALE: | NTS | TITLE : GENERAL ARRANGEMENT |
| ALL DIMN IN mm | Drn: | RKKG | DRG.No: 222 00 00 00 |
| DO NOT SCALE | Chkd: | UJD | ASLY. No:222 00 00 00 |
| IF IN DOUBT ASK | Appd: | UJD | SHEET: 1 OF 3 REV: |

| REV. | DESCRIPTION | AUTH. | DATE | DRN | ZONE |
|---|---|---|---|---|---|

This drawing is the sole property of OEPL. it should not be copied or communicated including extracts to any person without approval of proprietor.

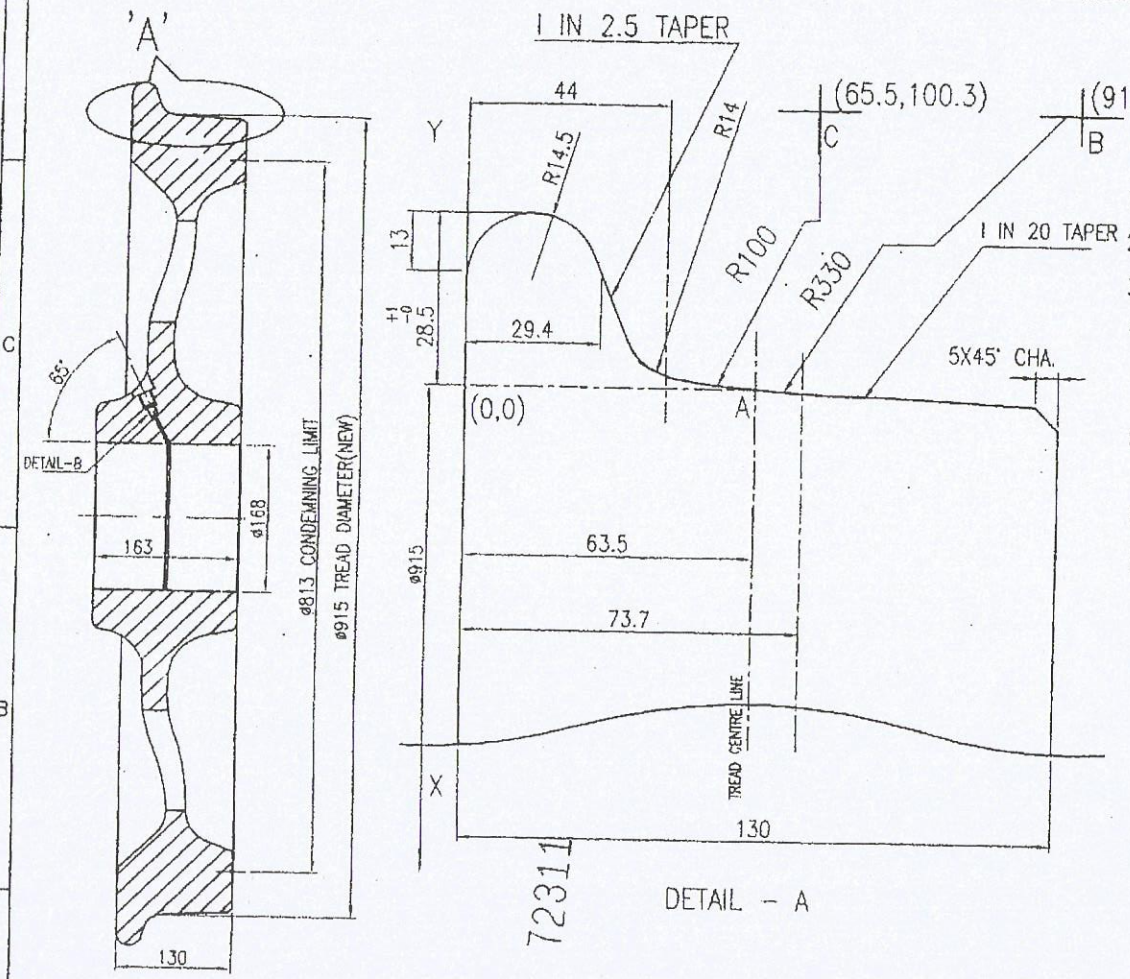
CAD FILE: NODE3/D/(UTV)RAILWAY BOARD/GENERAL ARRANGEMENT.dwg

A3

This drawing is the sole property of OEPL. it should not be or communicated including extracts to any person without approval of proprietor.

CAD FILE: NODES/D/UTV/WHEEL AXLE ASSEMBLY & PARTS

TOTAL WEIGHT ~370.56 Kgs.




## PROCEDURE OF DRAWING:

1. DRAW A VERTICAL LINE X-Y.
2. DRAW SEMI-CIRCLE OF 14.5R TANGENTIAL TO LINE X-Y.
3. DRAW LINE 1:2.5 TANGENTIALLY TO 14.5R SEMI-CIRCLE.
4. DRAW A HORIZONTAL LINE AT 28.5mm FROM THE TOP OF THE FLANGE AND LOCATE POINT 'A' AT 63.5mm FROM THE LINE X-Y.
5. FROM PONT A LOCATE CENTRE 'B' OF ARC OF 330R ON VERTICAL LINE AT 91mm FROM X-Y.
6. DRAW ARC OF 330R FROM CENTRE 'B'.
7. LOCATE CENTRE 'C' ON VERTICAL LINE AT A HORIZONTAL DISTANCE OF 65.5mm FROM THE LINE X-Y SUCH THAT BC=(330-100) i.e 230mm.
8. DRAW ARC OF 100R WITH CENTRE AS 'C'.
9. DRAW ARC OF RADIUS 14mm TANGENTIALLY TO 100R ARC AND LINE 1:2.5.
10. DRAW LINE 1:20 TANGENTIALLY TO 330R ARC.
11. DRAW A VERTICAL LINE AT A DISTANCE OF 130mm FROM THE FLANGE END.

ROLLED STEEL WHEEL
TO IRS R-19/93

NOTE:
FOR DETAIL 'B' REFER Drg. No. 222 03 00 02

| REV. | DESCRIPTION | AUTH. | DATE | DRN | ZONE |
|---|---|---|---|---|---|
| 1. | DIMENSION 28.5 ADDED | UJD | 13/08/04 | RKKG | 4,C |

OVIS EQUIPMENTS Pvt.Ltd.,
SHED NO.43, IDA PHASE II, CHERLAPALLY, HYDERABAD - 500 051 A.P. INDIA.
OEPL

| | | | |
|---|---|---|---|
| CUSTOMER: RAILWAY BOARD INDIAN RAILWAYS (NEW DELHI) | | | EQUIPMENT: UTILITY VEHICLE |
| DATE: 8/04/04 | SCALE: | NTS | TITLE : WHEEL (DIA 915) |
| ALL DIMN IN mm | Drn: | RSK | DRG.No: 222 03 00 01 |
| DO NOT SCALE | Chkd: | UJD | ASLY. No:222 03 00 00 |
| IF IN DOUBT ASK | Appd: | UJD | SHEET: OF REV: 1 |

A3

# GOVERNMENT OF INDIA
# MINISTRY OF RAILWAYS
# RAILWAY BOARD

No. 2004/CEDO/SR/20. New Delhi, dated 04-01-2005

The Director General/Track,
R.D.S.O.,
Manak Nagar,
Lucknow – 226 011.

**Sub: Infringement of Schedule of Dimensions by Utility Track Vehicle (UTV) supplied by M/s OEPL, Hyderabad, design condonation thereof.**

.....

With reference to your application No. CT/TMM/GENL dated 03.11.2004, sent through the Chief Commissioner of Railway Safety, Lucknow, The sanction of Ministry of Railways is hereby communicated for condonation of infringements to item 5, 15, 19(a), 20(a) and 21(a), Chapter-IV (A) of B.G. Schedule of Dimensions 1973 (Reprint) as shown in Annexure-I ~~(enclosed)~~ and drawings enclosed with your above mentioned letter referred to above.

( Parmod Kumar )
Executive Director Civil Engg.(G)
Railway Board.

7228

2004/CEDO/SR/20. New Delhi, dated 04-01-2005

Copy forwarded for information action to the Chief Commissioner of Railway Safety, Lucknow w.r.t. his endorsement No. Q.17014/1/2004-RS-(I) dated 07.12. 2004.

( Parmod Kumar )
For Secretary,Railway Board.