

# TRAVELLING MACHINERIES & WHEEL ASSEMBLIES



# REVA



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Reva offers one of the finest available selection of energy efficient Travelling Machineries with built in reliability, deriving product strength from making all the key components IN-HOUSE, optimally engineered & manufactured using the latest in designs, materials, manufacturing & quality assurance techniques. Keeping pace with technological advances in terms of modularisation & standardisation, Reva has developed a system of Travelling / Traversing and other mechanical engineering requirements divided into three independent modules viz:

1. Shaft mounted Gear Boxes in sizes TM 04, 06, 08, 10, 12, 16 to suit various motor rating & output speed requirements with added features given below.
  - The staggered & rationalized centre distances reduce the overall size apart from reduction in noise due to balancing of forces.
  - The arrangement for mounting a torque arm is an integral part of these gear machineries.
  - The free input-shaft is an option to suit any international IEC motor frame sizes or we can also provide standard crane duty brake motors as an integral part of the Travelling Machinery.
  - The output gear shaft is either hollow ground to be keyed or solid shaft to be shrink disc fitted with the required driven equipment.
2. Double flanged Rail Wheel assemblies of diameter 160mm to 500mm in R-10 series are suitable for Travelling / Traversing for varied sizes of rail and for different standardised speeds.
3. Squirrel cage motors from 0.18 to 25.0 KW are available. All squirrel cage motors are standard motors with built in disc brakes manufactured by an ISO:9001 company and having C.E marking also. The motor being supplied by us is mounted via a splined shaft simplifying its assembly & maintenance. However you have an option to use your own motor with our hollow input pinion supplied by us.
4. State of the art Variable voltage variable frequency A.C. drives are available for stepless speed control.

### MATERIAL OF CONSTRUCTION

#### GEAR CASES

Gear cases are cast iron FG 200 or cast aluminium LM-6 duly shot peened, stress relieved & machined on up-to-date CNC machining centres.

#### GEARS & PINIONS

Gear are designed in R-20 series. All Gears & Pinions, manufactured from low carbon alloy steels are 100% HELICAL, CASE HARDENED & PROFILE GROUND conforming to DIN-7 standard.

#### SHAFTS

Output shafts of Travelling Machinery are manufactured from medium Carbon Alloy Steel & are hardened & ground. All keys are as per DIN - 6885.

#### WHEELS

Wheels are manufactured from forged Medium Carbon alloy steel and are machined on up - to date CNC turning centres. The wheels are hardened to hardness of 36 - 42 HRC, axles shrunk fitted into the wheels are also hardened & ground. The Driving wheels have extended axle to fit into the hollow shaft of the travelling machinery with a key or shrink disc.

#### WHEEL BLOCKS

Wheel blocks are fabricated from IS:2062 steels. These Blocks are accurately fabricated & machined after fabrication to achieve

required parallelism & perpendicularity of the wheels. An adapter plate is provided for welding of distance pieces to obtain required wheel base. The distance pieces can be either standard rolled channel iron or fabricated box. After fixing the distance piece these wheel blocks become end-carriages for cranes or can be used for any other mechanical engineering usage.

#### ECCENTRIC BUSH

An eccentric bush is provided in the wheel block for the purpose of height adjustment of the wheel to the tune of 5mm. For example after fixing all the wheels if for some reason a particular wheel is not sitting properly on the rail then with the help of the eccentric bush the wheel can be lowered to be able to sit on the rail.

#### BEARINGS

The moving axle in the wheel assemblies are mounted on amply rated spherical roller bearings to give maintenance free service for a long time.

#### SURFACE FINISH

All Wheel Blocks & Travelling Machineries are epoxy coated suitable for both in-door & out-door application. All exposed machined components are suitably protected from corrosion.

## SELECTION OF TM MACHINERY

### SELECTION PROCEDURE

1. Select Wheel Dia as per wheel load requirement.
2. Compute motor power for the required speed.
3. Ref. chart from where with the selected wheel dia., required speed & computed motor power the TM can be directly selected as per example given in the chart.

### AN EXAMPLE

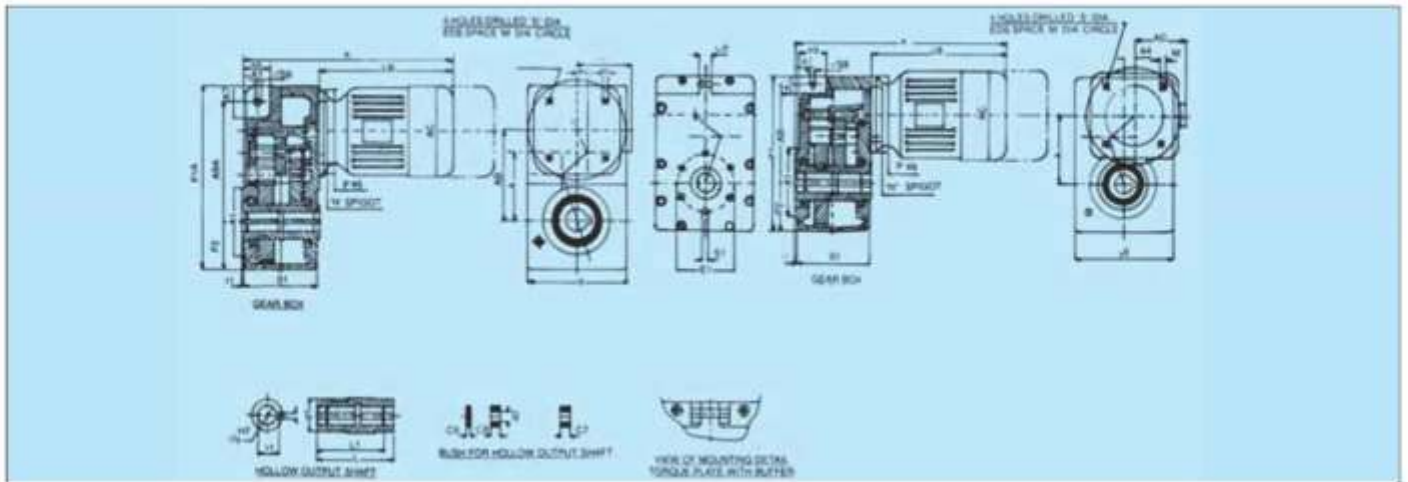


ORDER DETAILS  
TM 10 22

1. In case you don't want motor from us please furnish us motor details, its fram-size proposed to be used by you. We will make the TM suitable for accepting your motors.
2. As given overleaf we can supply TM output, with anyone of the following version as per (ISO-496-73 & ISO/R273)

Please specify:      Solid Shaft  
                                 Hollow Shaft  
                                 Output Flange.

| Travelling Speed m/min |       |       |       |       |       |       |       |       | Wheel D mm.         |                  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------|------------------|
| 8                      | 10    | 12.5  | 16    | 20    | 25    | 31.5  | 40    | 50    | 160                 |                  |
| 10                     | 12.5  | 16    | 20    | 25    | 31.5  | 40    | 50    | 63    | 200                 |                  |
| 12.5                   | 16    | 20    | 25    | 31.5  | 40    | 50    | 63    | 80    | 250                 |                  |
| 16                     | 20    | 25    | 31.5  | 40    | 50    | 63    | 80    | 100   | 315                 |                  |
| 20                     | 25    | 31.5  | 40    | 50    | 63    | 80    | 100   | 125   | 400                 |                  |
| 25                     | 31.5  | 40    | 50    | 63    | 80    | 100   | 125   | 160   | 500                 |                  |
| 06 90                  | 06 71 | 06 56 | 06 45 | 06 36 | 06 28 | 06 22 | 06 18 | 06 14 | 4 P<br>SCR<br>MOTOR | GEAR BOX         |
| 0.37                   | 0.55  | 0.75  | 0.90  | 1.1   | 1.5   | 1.6   | 2.2   | 3.0   |                     |                  |
| 08 90                  | 08 71 | 08 56 | 08 45 | 08 36 | 08 28 | 08 22 | 08 18 | 08 14 |                     |                  |
| 0.8                    | 1.0   | 1.1   | 1.5   | 2.0   | 2.55  | 3.2   | 4.0   | 5.5   |                     |                  |
| 10 90                  | 10 71 | 10 56 | 10 45 | 10.36 | 10 28 | 10 22 | 10 18 | 10 14 |                     |                  |
| 1.80                   | 2.2   | 3.0   | 3.2   | 4.0   | 5.5   | 7.5   | 8.0   | 12.0  |                     |                  |
| 12 90                  | 12 71 | 12 56 | 12 45 | 12 36 | 12 28 | 12 22 | 12 18 | 12 14 |                     |                  |
| 3.7                    | 5.0   | 6.3   | 7.5   | 9.3   | 12.0  | 16.0  | 18.0  | 25.0  |                     |                  |
|                        |       | 06 40 | 06 32 | 06 25 | 06.20 | 06 16 | 06 12 | 06 10 |                     |                  |
|                        |       | 0.6   | 0.75  | 0.9   | 1.2   | 1.5   | 2.2   | 2.6   |                     |                  |
|                        |       | 08 04 | 08 32 | 08 25 | 08 20 | 08 16 | 08 12 | 08 10 |                     |                  |
|                        |       | 1.2   | 1.6   | 1.9   | 2.2   | 3.0   | 4.0   | 4.5   |                     |                  |
|                        |       | 10 40 | 10 32 | 10 25 | 10 20 | 10 16 | 10 12 | 10 10 |                     |                  |
|                        |       | 2.6   | 3.7   | 4.5   | 5.5   | 7.5   | 9.0   | 11.0  |                     |                  |
|                        |       | 12 40 | 12 32 | 12 25 | 12 20 | 12 16 | 12 12 | 12 10 |                     |                  |
|                        |       | 5.5   | 6.7   | 9.0   | 11.0  | 13.2  | 6.0   | 17.8  |                     |                  |
|                        |       |       |       |       |       |       |       |       | 6 P<br>SR<br>MOTOR  | MOTOR POWER (KW) |



| RATING & DIMENSIONS |              |                 |     |     |     |     |    |           |      |     |     |     |     |     |    |    |             |
|---------------------|--------------|-----------------|-----|-----|-----|-----|----|-----------|------|-----|-----|-----|-----|-----|----|----|-------------|
| GEAR                | Rating da Nm | d <sub>H7</sub> | A   | AB  | A1  | E1  | F1 | s1        | A4   | O   | O1  | P1  | P1A | P2  | K8 | C6 | K           |
| TM 06               | 25           | 30-35           | 110 | 148 | 118 | 100 | 4  | M - 8x15  | 18.5 | 165 | 130 | 250 | 300 | 80  | 45 | 16 | 360,375,425 |
| TM 08               | 55           | 40-45           | 140 | 185 | 140 | 120 | 4  | M - 10x16 | 22.5 | 205 | 150 | 315 | 375 | 100 | 55 | 20 | 472,497     |
| TM 10               | 125          | 50-55           | 180 | 231 | 165 | 140 | 5  | M - 12x18 | 28   | 255 | 180 | 385 | 450 | 120 | 70 | 25 | 590,630     |
| TM 12               | 250          | 60-70           | 225 | 290 | 205 | 175 | 6  | M - 16x24 | 38   | 320 | 240 | 485 | 560 | 150 | 75 | 32 | 830,880     |

| RUBBER BUFFER |     |           |
|---------------|-----|-----------|
| Bore          | O.D | Thickness |
| 11            | 30  | 15        |
| 13            | 40  | 15        |
| 17            | 50  | 27        |
| 20            | 60  | 27        |

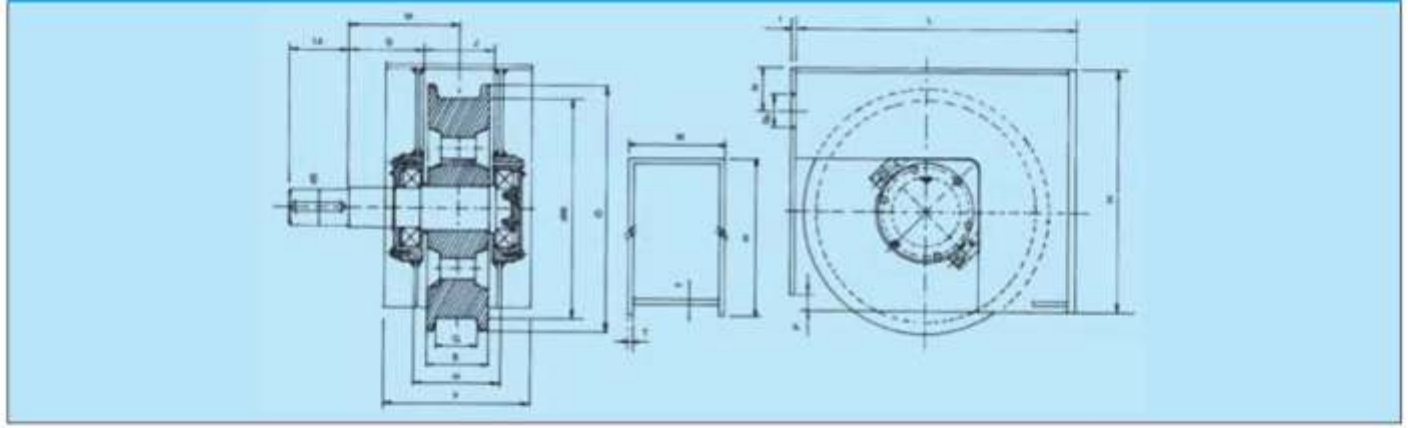
| MOTOR/SCR |        |     |     |     |     |                 |     |     |    |
|-----------|--------|-----|-----|-----|-----|-----------------|-----|-----|----|
| Framesize | ShaftØ | LB  | P   | AC  | AD  | P <sub>90</sub> | M   | N   | S  |
| AD71D     | Ø14    | 220 | 160 | 140 | 105 | 145             | 130 | 110 | 10 |
| AD80      | Ø19    | 234 | 200 | 162 | 116 | 180             | 165 | 130 | 12 |
| AD90LD    | Ø24    | 310 | 200 | 178 | 131 | 180             | 165 | 130 | 12 |
| ND100LC   | Ø28    | 320 | 250 | 210 | 160 |                 |     |     |    |
| ND112MC   | Ø28    | 345 | 250 | 230 | 170 | 222             | 215 | 180 | 15 |
| ND132SC   | Ø38    | 390 |     |     |     |                 |     |     |    |
| ND132MC   | Ø38    | 430 | 300 | 270 | 190 | 265             | 265 | 230 | 15 |
| ND180MD   | Ø48    | 598 |     |     |     |                 |     |     |    |
| ND180LD   | Ø48    | 636 | 350 | 352 | 275 | 307             | 300 | 250 | 19 |

| HOLLOW OUTPUT SHAFT |    |     |     |      |       |
|---------------------|----|-----|-----|------|-------|
| d <sub>H7</sub>     | d1 | L   | L1  | t1   | U     |
| 30-35               | 50 | 140 | 125 | 33.3 | 8,10  |
| 40-45               | 65 | 160 | 140 | 43.3 | 12,14 |
| 50-55               | 75 | 200 | 180 | 53.8 | 14,16 |
| 60-70               | 95 | 250 | 200 | 64.4 | 18,20 |

| BUSH FOR HOLLOW OUTPUT SHAFT |    |    |      |
|------------------------------|----|----|------|
| C7                           | C8 | C9 | d2   |
| 6.3                          | 12 | 3  | M-12 |
| 8                            | 14 | 4  | M-16 |
| 10                           | 16 | 5  | M-20 |
| 12                           | 18 | 5  | M-24 |

| TORQUE PLATE |     |     |    |    |         |
|--------------|-----|-----|----|----|---------|
| A7           | A8  | A8A | K6 | K7 | S6      |
| 30           | 155 | 205 | 38 | 38 | M12x75  |
| 35           | 195 | 245 | 45 | 45 | M16x80  |
| 45           | 240 | 300 | 55 | 55 | M20x100 |
| 50           | 300 | 375 | 70 | 70 | M24x110 |

## WHEEL ASSEMBLY



| WHEEL ASSEMBLY |     |    |     |     |     |     |                |     |     |                |   |     |     |   |     |                |    |     |
|----------------|-----|----|-----|-----|-----|-----|----------------|-----|-----|----------------|---|-----|-----|---|-----|----------------|----|-----|
| d <sub>w</sub> | D   | a  | B   | E   | F   | G   | L <sub>s</sub> | L   | J   | d <sub>s</sub> | I | M   | H   | T | N   | S <sub>b</sub> | P  | W   |
| 160            | 190 | 60 | 90  | 200 | 230 | 105 | 70             | 105 | 110 | 40             | 6 | 160 | 280 | 8 | 63  | M16            | 15 | 160 |
| 200            | 230 | 80 | 110 | 200 | 230 | 130 | 70             | 130 | 140 | 55             | 6 | 200 | 280 | 8 | 80  | M16            | 15 | 180 |
| 250            | 280 | 80 | 110 | 250 | 285 | 130 | 100            | 130 | 140 | 55             | 6 | 200 | 300 | 8 | 100 | M16            | 20 | 225 |
| 315            | 355 | 90 | 120 | 280 | 320 | 170 | 100            | 170 | 160 | 70             | 6 | 250 | 350 | 8 | 125 | M16            | 20 | 250 |
| 400            | 450 | 90 | 120 | 300 | 345 | 170 | 100            | 170 | 160 | 70             | 6 | 250 | 500 | 8 | 140 | M16            | 20 | 280 |

| WheelBase<br>Wheel Dia(mm) | 1.6                  | 2.0  | 2.5  | 3.15 | 4    |
|----------------------------|----------------------|------|------|------|------|
|                            | Wheel Load in Tonnes |      |      |      |      |
| 160                        | 4.5                  | 4.5  | 4.5  | 4    | 3.2  |
| 200                        | 5.6                  | 5.6  | 5.1  | 4    | 3.2  |
| 250                        | 9.5                  | 9.1  | 7.22 | 5.73 | 4.5  |
| 315                        | 14.1                 | 11.8 | 9.47 | 7.5  | 5.9  |
| 400                        | 17.9                 | 17.9 | 17.0 | 13.5 | 10.6 |



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