

F : Transport, Winding, Conveying & Road Maintenance Equipment

FI TRANSPORT EQUIPMENT FOR OPENCAST MINES AND SURFACE

FI (1) Dumpers

(a) Rear Dumpers

Payload Capacity kg : 21000 to 30000

Manufacturer : M/s Hindusthan Motors Ltd.,
Earth Moving Equipment Division,
P. O. Melnallathur,
Tiruvallur - 602 004, Tamil Nadu.

Supplier : M/s GMMCO Limited,
9/1, R. N. Mukherjee Road,
Calcutta - 700 001.

	(i)	(ii)
Model	: 1025	1028
Cap Payload	kg : 25,410	25410
Struck	cum : 13.63	13.63
Heaped 2:1 (SAE)	cum : 16.97	16.97
Flywheel Power	: 303 HP (220 KW) @ 2100 rpm	303 HP (220 KW) @ 2100 rpm
Engine Make & Model	: Kirloskar Cummins NT-743-C	Kirloskar Cummins NT-743-C
Max Travel Speed	kmph :	
	F : 43.85	43.95
	R : 11.22	4.43
Overall H	mm : 3683	-
L	mm : 8065	-
W	mm : 3378	-
Loading H	mm : 2934	2780
Max Dumping Angle	: 65°	-

Payload Capacity kg : 31000 to 40000

1. **Manufacturer/Supplier** : M/s Bharat Earth Movers,
Unity Buildings, J. C. Road,
Bangalore - 560 002

Model : Haulpak-35

Cap Payload kg : 31752

Struck cum : 18.12

Heaped 2:1
(SAE) cum : 22.47

Flywheel Power : 355 HP @ 2100 rpm

Engine Make & Model : Kirloskar Cummins-855C-380

F : Transport, Winding, Conveying & Road Maintenance Equipment

Max Travel speed kmph :
 F : 39.97
 R : 4.11
 Turning Radius m : 7.16
 Overall H mm : 3630
 L mm : 7440
 W mm : 3760
 Loading H mm : 3200
 Max Dumping Angle : 55°
 Optional Attachment : 2800 Litres Water Tanker with sprinkling arrangement also available

2. Manufacturer : M/s Hindusthan Motors Ltd., Supplier : M/s GMMCO Limited,
 Earth Moving Equipment Division, 9/1, R. N. Mukherjee Road,
 P. O. Melnallathur, Calcutta - 700 001.
 Tiruvallur - 602 004, Tamil Nadu.

	(i)	(ii)
Model	: 1035	1040
Cap Payload	kg : 31752 & 32660	36300
Struck	cu m : 17.8	17.8
Heaped 2:1 (SAE)	cu m : 22.0 & 24.5	24.5
Flywheel power	HP : 351 & 372	436
	KW : 262 & 277	325
Engine Make & Model	: Cummins NTA-855C-380	Intac 3406
	INTAC 3406 DITA 4 Cycle Diesel	4 Cycle Diesel
Max Travel Speed	kmph :	
	F : 44	64.8
	R : 4.1	8.5
Overall H	mm : 3580 & 3520	3620
L	mm : 8460 & 8140	8140
W	mm : 3860 & 3660	3660
Loading H	mm : 3250 AND 3150	3250
Max Dumping Angle	: 50° & 55°	54°

Payload Capacity kg : 41000 to 50000

1. Manufacturer/Supplier : M/s Bharat Earth Movers,
 Unity Buildings, J. C. Road,
 Bangalore - 560 002

Model : Haulpak-50
 Cap Payload kg : 45360
 Struck cu m : 23.55
 Heaped 2:1 (SAE) cu m : 30.58
 Flywheel power : 600 HP @ 2100 rpm
 Engine make & model : Kirloskar Cummins VI-1710-C

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Max Travel Speed kmph :
 F : 64.86
 R : 8.43
 Turning Radius m : 8.84
 Overall H mm : 4140
 L mm : 8810
 W mm : 4140
 Loading H mm : 3610
 Max Dumping Angle : 50°

2. Manufacturer : M/s Hindusthan Motors Ltd.,
 Earth Moving Equipment Division,
 P. O. Melnallathur,
 Tiruvallur - 602 004, Tamil Nadu. Supplier : M/s GMMCO Limited,
 9/1, R. N. Mukherjee Road,
 Calcutta - 700 001.

Model : 773 B
 Cap Payload kg : 45400
 Struck cu m : 26
 Heaped 2:1 (SAE) cu m : 34.1
 Flywheel Power : 650 HP (485 KW) @ 2000 rpm
 Engine Make & Model : Caterpillar 3412
 Max Travel Speed kmph :
 F : 61
 R : 10
 Turning Radius m : 10.75
 Overall H mm : 4077
 L mm : 9120
 W mm : 4114
 Loading H mm : 3692

Payload Capacity kg : 50000 to 100000

1. Manufacturer/Supplier : M/s Bharat Earth Movers,
 Unity Buildings, J. C. Road,
 Bangalore - 560 002

	(i)	(ii)
Model	Haulpack- P 5 D	HD 785-2
Cap Payload kg	77100	78000
Struck cu m	36.16	37
Heaped 2:1 (SAE) cu m	51.26	52
Flywheel Power	858 HP @ 2100rpm	877 HP @ 2100 rpm
Engine Make & Model	Kirloskar Cummins KT - 2300 - C	Kirloskar Cummins KT - 2300 - C
Max Travel Speed kmph		
F	65.97	66
R	8.37	12.43

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Turning Radius	m	:	10.52	9.9
Overall H	mm	:	4960	4920
L	mm	:	11340	10130
W	mm	:	5000	5700
Loading H	mm	:	4240	4080
Max Dumping Angle		:	50°	65°

2. Manufacturer : M/s Hindusthan Motors Ltd.,
Earth Moving Equipment Division,
P. O. Melnallathur,
Tiruvallur - 602 004, Tamil Nadu.

Supplier : M/s GMMCO Limited,
9/1, R. N. Mukherjee Road,
Calcutta - 700 001.

Model	:	777C
Cap Payload	kg	77000
Struck	cu m	36.3
Heaped 2:1 (SAE)	cu m	51.3
Flywheel Power	:	870 HP (649 KW) @ 1750 rpm
Engine Make & Model	:	Caterpillar 3508
Max Travel speed	kmph	:
F	:	60
R	:	7
Turning Radius	m	12.25
Overall H	mm	4900
L	mm	9780
W	mm	5064
Loading H	mm	4140

Payload Capacity kg : 101000 TO 200000

Manufacturer/Supplier : M/s Bharat Earth Movers,
Unity Buildings, J. C. Road,
Bangalore - 560 002

	(i)	(ii)	(iii)
Model	Haulpak-120 (Electric)	Haulpak-140 (Mechanical)	Haulpak-170 (Electric)
Cap Payload	kg : 108864	127008	154222
Struck	cu m : 39	54.3	54
Heaped 2:1 (SAE)	cu m : 59	76.5	84
Flywheel Power	1072 HP @ 2100 rpm (Standard Cummins) 937 HP @ 2100 rpm (Optional Cummins)	1242 HP @ 2100 rpm	1470 HP @ 2100 rpm
Engine Make & Model	Standard Cummins KTA-38-C-1200 Optional Cummins	Cummins KTA-2300C	Cummins KTA-50-C
Transmission	Electric Drive with GE Alternator GTA-25		Electric Drive with GE Alternator GIA-22

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Max Travel speed	kmph	:			
	F	:	51.5	48.59	56.8
	R	:	-	12.05	-
Turning Radius	m	:	12.35	-	12
Overall	H	mm	5740	5920	6370
	L	mm	11380	11630	11890
	W	mm	6270	6400	7010
Maximum Dumping Angle	:		45°	45°	45°
Loading	H	mm	-	5050	5440

(b) Bottom Dumper

Payload Capacity kg : 50000 to 100000

1. Manufacturer/Supplier : M/s Bharat Earth Movers,
Unity Buildings, J. C. Road,
Bangalore - 560 002

			(i)	(ii)
Model	:		GB60C Coal Hauler	GB60-1 Earth Hauler
Cap Payload	kg	:	55000	55000
Struck	cu m	:	30	30
Heaped 2:1				
(SAE)	cu m	:	37	37
Flywheel Power	:		414 HP @ 2100 rpm	414 HP @ 2100 rpm
Engine Make & Model	:		Kirloskar Cummins KT 1150-C	Kirloskar Cummins KT 1150-C
Max Travel speed	kmph	:	59.5	66.8
Loading	H mm	:	3300	3300

2. Manufacturer : M/s Hindusthan Motors Ltd.,
Earth Moving Equipment Division,
P. O. Melnallathur,
Tiruvallur - 602 004, Tamil Nadu.

Supplier : M/s GMMCO Limited,
9/1, R. N. Mukherjee Road,
Calcutta - 700 001.

Model	:		1160
Cap Payload	kg	:	55000
Struck	cu m	:	43.5
Heaped 2:1	:		52.5
Flywheel Power	:		650 HP @ 2100
Engine Make & Model	:		Kirloskar Cummins KT 1150-C-4
Max Travel speed	kmph	:	61.28
Loading	H mm	:	3575

Fl (2) Tipper

Manufacturer/Supplier : M/s Tata Engineering & Locomotive Co. Ltd.,
Mumbai House, 24 Homi Modi Street,
Mumbai - 400 001

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Models	:	SK 1210, SK 1210A, SK 12108, SK 1210C Tipper Range
Cap	kg	: 8000
Engine	:	Inline 6 Cylinder, Water Cooled Direct Injection Engine Model - 192 DI
Taxable	HP	: 31.5
Fuel Tank Cap	Lit	: 160
Electrical System	V	: 12
Tipping Time	sec	: 12
Lowering Time	:	7

FI (3) Haulage Trucks

Capacity kg : Up to 10000

Manufacturer/Supplier : M/s Ashok Leyland Ltd.,
480, Anna Salai, Nandanam,
Chennai - 600 035

Model	:	Beaver 4 X 4 Oil Field Truck
Payload Cap	kg	: 10000
Engine	:	Ashok Leyland Ltd., 680, Six Cylinders, Diesel
Max Power	:	180 bhp @ 2200 rpm
Platform Body		
Size W x L	m	: 2.15 x 3.75
Wheel Base	mm	: 5000
Overall L	:	8495
Gross Vehcile Wt	kg	: 19000

Capacity kg : Uo to 10,001 to 20000.

Manufacturer/Supplier : M/s Ashok Leyland Ltd.,
480, Anna Salai, Nandanam,
Chennai - 600 035

		(i)	(ii)	(iii)
Model	:	Hippo 6 x 4 Oil Field Truck	Hippo ALWS-16 (Water Sprinkler)	Beaver Haulage Chasis
Payload cap	kg	: 15000	16000	16260
Engine	:	Ashok Leyland 680 NA, Six Cylinders, Diesel	Ashok Leyland 680, Six Cylinders, Diesel	Ashok Leyland AL 680, Six Cylinders, Diesel
Max Power	:	180 bhp @ 2800 rpm	180 bhp @ 2200 rpm	180 bhp @ 2200 rpm
Platform Body				
Size W x L	m	: 2.15 x 4.715		
Max Speed	kmph	:		55.7
Max Gradeability	:			1 IN 2.8
Wheel Base	mm	: 5182	3581	
Overall L	mm	: 8582	7000	
Gross Vehcile WT	kg	: 26700	27500	

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Capacity	kg	: 20,001 to 30,000
Manufacturer/Supplier	:	M/s Ashok Leyland Ltd., 480, Anna Salai, Nandanam, Chennai - 600 035
Models	:	Hippo Haulage Chasis
Cap	kg	: 26420
Engine	:	Ashok Leyland AL 680, Six Cylinders, Diesel
Max BHP	:	180 HP @ 220 rpm
Max Speed	kmph	: 49.5
Max Gradeability	:	1 in 4.12

FI (4) Trailers

Capacity	kg	: Up to 50000
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Manufacturer/Supplier	:	M/s Bharat Earth Movers Ltd., Unity Buildings, J. C. Road, Bangalore - 560 002
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		(i)	(ii)	(iii)
Model	:	Container Trailer	Container Trailer	Heavy Duty Full Trailer
		20 FT	40 FT	Trailer 50 Tonnes
Payload Cap	kg	: 20320	40640	50000
Container Size	m	: 6.095 X 2.438 X 2.438/ 2.591	12.191 x 2.438 x 2.438 (1 No) OR 6.095 x 2.438 x 2.438 (2 Nos)	
Bed Area	m	: -	-	6.70 x 3.42
Max Speed	kmph	: 40	40	50
Frame	:	All Steel	All Steel	All Steel
Loading Arrangement	:	-	-	Loading Ramps & Lashing arrangements provided
Dimensions	H mm	: 1390	1500	1296
	L mm	: 7783	12265	12705
	W mm	: 2440	2440	3420
Unladen wt	kg	: 4500	7000	20000
Prime Mover	:	Ashok Leyland Comet or Equivalent	Ashok Leyland Hippo or Equivalent	Kolos Tatra or Equivalent
Model	:	(iv) Low Deck Semi Trailer	(v) Low Deck Full Trailer	(vi) Low Deck Semi Trailer
		20 Tonnes	20 Tonnes	30 Tonnes
Payload Cap	kg	: 20000	20000	30000
Bed Area	m	: 6.1 x 2.6	6.00 x 3.10	6.1 x 2.6
Max Speed	kmph	: 50	55	50
Frame	:	All Steel	All Steel	All Steel
Loading Arrangement	:	Loading Ramps & Lashing arrangement provided	Loading Ramps & Lashing arrangement provided	Loading Ramps & Lashing arrangement provided

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Dimensions	H	mm	: 1234	1100	1306
	L	mm	: 11693	12800	13460
	W	mm	: 2600	3100	3000
Unladen wt		kg	: 7000	12050	10000
Prime Mover			: Ashok Leyland Comet or Equivalent	Kolos Tatra or Equivalent	Ashok Leyland Hippo ALH 4 or Equivalent

FI (5) Water Sprinklers

Tank Capacity Lit : 28000

Manufacturer/Supplier : M/s Bharat Earth Movers Ltd.,
Unity Buildings, J. C. Road,
Bangalore - 560 002

Model : WS-28
Tank Cap Lit : 28000
Spreading Width mm : 10000
Flywheel Power : 355 HP @ 2100 rpm
Engine Make & Model : Kirloskar-Cummins
NTA-855-C-380

Max Travel Speed kmph

F : 39.97
R : 4.11

Turning Radius m : 7.16

Overall H mm : 3900

L mm : 7280

W mm : 3760

Water System Pump Cap : Centrifugal/600 lit/min @ 70 m head
& 1200 lit/min @ 50 m head

FII TRANSPORT EQUIPMENT FOR UNDERGROUND MINES

FII (1) Mine Locomotives

1. **Manufacturer/Supplier** : M/s Bharat Gold Mines Ltd.,
Suvarana Bhavan, Orgaum Post,
Kolar Gold Fields - 563 120, Karnataka

		(i)	(ii)
Model		Midget 2 T Battery Operated	Midget 4 T Battery Operated
Track Gauge		460/610 mm	610 mm
Adhesive wt	t	2	4
Speed (Loaded)	kmph	6.4	6.4
Power Rating	KW	4	8
Battery	V	48	80
Min Radius of Curvature-Negotiable	m	3.5	6.0
H Over Rails			
With Canopy	mm	1920	1450
Hauling Cap	t	12	24

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2. Manufacturer/Supplier : M/s Mining & Allied Machinery Corporation Ltd.,
Commercial Department,
Durgapur - 713 210, West Bengal.

		(i)	(ii)
Model	:	LB 5*	LB 8
		Flame Proof	Flame Proof
Track Gauge	mm :	600/762/900/1000	600/762/900/1000/1067
Adhesive wt	t :	4.5	8
Axle Load	t :	-	-
Wheel Base	mm :	950	1200
Wheel Dia	mm :	540	680
Min Radius of Curvature-			
Negotiable	m :	6	9
Max Speed	kmph :	6.44	6.8
Coupling H			
Over Rails	mm :	195; 295	270; 380
H Without Canopy			
Over Rails	mm :	1365	1400
Starting System	:	Electric	Electric
Battery	V :	80	120
Braking System	:	Mechanical	Mechanical

		(iii)	(iv)
Model	:	LB - 13	LD - 7
			(Non Flame Proof)
Track Gauge	mm :	900/1000/1067	600/762/900/1000/1067
Adhesive wt	t :	13	7
Axle Load	t :	-	3.5
Wheel Base	mm :	1500	1100
Wheel Dia	mm :	680	540
Min Radius of Curvature -			
Negotiable	m :	10	9
Max Speed	kmph :	12	14
Coupling H			
Over Rails	mm :	310	300; 410
H Without Canopy			
Over Rails	mm :	1520	-
Starting System	:	Electric	Electric
Battery	V :	160	12
Braking System	:	Pneumatic & Mechanical Pneumatic	Mechanical Model LDF - 7 Flame Proof is also available

* Under Development

FII (2) Mine Cars

Capacity t : Up to 10

(a) Granby Cars

1. Manufacturer/Supplier : M/s Friends Engineering Works,
8-9/A, Industrial Estate, Pratapnagar,
Udaipur - 313 001.

Cap t : 5
Dumping System : Double Side

2. Manufacturer/Supplier : M/s Mining & Allied Machinery Corporation Ltd.,
Durgapur - 713 210, West Bengal.

		(i)	(ii)	(iii)
Model		MG-4	MG-2	MG-1
Cap	cu m	1.7	1.9	3
Payload	t	3.6	4	5
Railgauge	mm	600	1000	600
Wheel Base	mm	900	900	950
L Over Buffer	mm	2870	2680	3200
Overall W	mm	1525	1980	1600
H Over Rail	mm	1495	1335	1366/1391
Coupling H	mm	350	380	210/235
Buffer		Non-Rotating	Non-Rotating	Non-Rotating
Dumping Angle		45°	45°	50°
Tare	t	1.975	2.04	2.77
Dumping System		Mechanical By Camel Back	Mechanical By Camel Back	By Pneumatic Pusher

(b) Hog Back Cars

1. Manufacturer/Supplier : M/s Friends Engineering Works,
8-9/A, Industrial Estate, Pratapnagar,
Udaipur - 313 001.

Cap : 5
Dumping System : Double Side

2. Manufacturer/Supplier : M/s Mining & Allied Machinery Corporation Ltd.,
Durgapur - 713 210,
West Bengal.

Model		MH-2
Cap	cu m	1.4
Payload	t	2
Rail Gauge	mm	600
Wheel Base	mm	700
Wheel Dia	mm	350
L Over Buffer	mm	2240

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Overall W	mm	:	1160
H Over Rail	mm	:	1240
Coupling H	mm	:	230
Buffer		:	Non-Rotating
Dumping Angle		:	45°
Dumping System		:	Both side discharge, by manual lever

(c) Solid Bottom Cars

Manufacturer/Supplier : M/s Mining & Allied Machinery Corporation Ltd.,
Durgapur - 713 210, West Bengal.

			(i)	(ii)	(iii)
Model		:	MSC-1	MC-3	MC-6
Cap	cu m	:	1.1	2.83	5.4
Payload	t	:	2	2.5	5
Rail Gauge	mm	:	762; 900; 1000; 1067	1067	1067
Wheel Base	mm	:	560	765	1370
Wheel Dia	mm	:	350	350	350
L Over Buffer	mm	:	1565	2775	4360
Overall W	mm	:	Gauge + 164	1575	1530
H Over Rail	mm	:	1205	1088	1220
Coupling H	mm	:	247	405	350
Buffer		:	Non-Rotating	Non-Rotating	Rotating
Tare	t	:	0.74	1.193	1.98
Dumping System		:	Tipper	Tipper	Tipper

(d) Flat Bottom Bogies

Manufacturer/Supplier : M/s Mining & Allied Machinery Corporation Ltd.,
Durgapur - 713 210, West Bengal.

			(i)	(ii)
Model		:	FB-1	FB-2
Cap	cu m	:	1.81	1.15
Payload	t	:	2	2
Rail Gauge	mm	:	600	600
Wheel Base	mm	:	1000	700
Wheel Dia	mm	:	350	350
L Over Buffer	mm	:	3290	2240
Overall W	mm	:	950	950
H Over Rail	mm	:	1125	1200
Coupling H	mm	:	230	230
Buffer		:	Non-Rotating	Non-Rotating
Tare	t	:	0.75	0.70

(e) Side Tipping Tubs

1. Manufacturer/Supplier : M/s Friends Engineering Works,
8-9/A, Industrial Estate, Pratapnagar,
Udaipur - 313 001.

Cap	t	:	0.5
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F : Transport, Winding, Conveying & Road Maintenance Equipment

Manufacturer/Supplier : M/s Mining & Allied Machinery Corporation Ltd.,
Durgapur - 713 210, West Bengal.

		(i)	(ii)
Model		MT-1C	MTT-2
Cap	cu m	1.25	0.80
Payload	t	1	2
Rail Gauge	mm	600	600
Wheel Base	mm	508	600
Wheel Dia	mm	305	305
L Over Buffer	mm	1576	2000
Overall W	mm	932	1100
H Over Rail	mm	1280	1200
Coupling H	mm	-	400
Buffer		Non-Rotating	Non-Rotating
Tare	t	0.432	0.573
Dumping System		-	Both Sides Dumping

FIII CONVEYING EQUIPMENTS

FIII (1) Belt Conveyors

Manufacturer/Supplier : M/s Mechanical Movements Pvt. Ltd.,
3, Netaji Subhash Marg,
New Delhi - 110 002.

Type		Portable
Cap	tph	60
Belt W	mm	400
Speed	m/min	60
Motor	HP	34
	rpm	1440
Type		Squirrel Cage
Wheels	mm	500 (Steel Wheel)
H Adjustment		By Hand Winch

FIII (2) Chain Conveyors

1. Manufacturer/Supplier : M/s Krupp Industries India Ltd.,
Pimpri,
Pune - 411 018.

		(i)	(ii)	(iii)
Type		Multi Bucket	Deep Cutting	Multi Bucket
Cap	tph	425	600	1060
Digging Depth	m	52	43.5	43
Service wt	t	700	673	-

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2. Manufacturer/Supplier : M/s Mechanical Movements Pvt. Ltd.,
3, Netaji Subhash Marg,
New Delhi - 110 002.

Type : Mobile
Unit Load kg : 100
Max Distributed Load kg : 250
Boom Operation : Manual Crank
Power Unit : 1 HP Motor
Speed m/min : 15
Control Equipment : Push Button Stop/Start/Rev Starter
Wheels : 200 mm Dia, CI Ball Bearing Castor
(Front Fixed, Rear Swivel Type)

3. Manufacturer/Supplier : M/s Standard Materials Agencies,
45/46, Podar Chambers,
P. B. No. 1660, S. A. Brelvi Road,
Mumbai - 400 023.

Hollow Pin Type Conveyor Chains

	(i)	(ii)	(iii)	(iv)
Chain Nos.	: 10024 to 10031	10040 to 10045	10050 to 10055	10060 to 10067
Pitch mm	: 50.8 to 152.4	76.2 to 152.4	101.6 to 103.2	125.0 to 304.8
Breaking Load kg	: 2727	5454	10909	16363

Solid Pin Type Conveyor Chains

	(i)	(ii)	(iii)
Chain Nos.	: 10250 to 10255	10264 to 10271	10280 to 10286
Pitch mm	: 38.10 to 101.6	50.8 to 152.4	76.2 to 152.4
Breaking Load kg	: 1363	3409	6818

	(iv)	(v)
Chain Nos.	: 10294 to 10299	10308 to 10315
Pitch mm	: 101.6 to 103.2	125.0 to 304.8
Breaking Load kg	: 13636	20454

4. Manufacturer/Supplier : M/s Voltas Ltd.,
Mining & Construction Equipment Division,
16, J. N. Heredia Marg, Ballard Estate,
Mumbai - 440 039.

Double Chain Conveyor

Model : Volcon
Cap tph : 90
L m : 100
Chain Speed m/min : 48
Motor KW : 2 x 5

F : Transport, Winding, Conveying & Road Maintenance Equipment

FIII (3) Screw Conveyor

Manufacturer/Supplier : M/s Mechanical Movements Pvt. Ltd.,
3, Netaji Subhash Marg,
New Delhi - 110 002.

		(i)	(ii)	(iii)	(iv)	(v)
Model		S-125	S-160	S-200	S-250A	S-250B
Cap cu m/hr	max	3.25	6.1	10.5	21.0	21.0
	min	2.0	4.0	6.8	11.5	11.5
Pitch		125	160	200	250	250
	Speed rpm	max	125	110	100	100
Hp	min	70	70	60	55	55
	max	3.1	4.6	6.4	6.4	10.0
	min	1.7	2.9	3.8	3.5	5.5
Model		(vi) S-315A	(vii) S-315B	(viii) S-400	(ix) S-500	(x) S-630
Cap cu m/hr	max	37	37	62	95	150
	min	29	20	35	55	98
Pitch		300	300	350	400	500
	Speed rpm	max	90	90	80	70
Hp	min	50	50	45	40	35
	max	9	11	10	17.5	13.7
	min	5	5	5.6	10	8.7

Note : The Conveyor Model Numbers indicate the diameter of the screw in mm.

FIII (4) Conveying Belting

Capacity Belt Width mm : Up to 1500

1. Manufacturer/Supplier : M/s Anil Rubber Mills Pvt. Ltd.,
2140-41, Pan Mandi, Sadar Bazar,
Delhi - 110 006

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Type	200/2	250/2	315/2	315/3	400/2	400/3	500/3
Max Working Tension							
kn/m	200	250	315	315	400	400	500
Nominal Carcass							
Thickness mm	2.6	2.6	2.7	3.7	2.8	3.7	3.5
Nominal Carcass							
wt/kg/sqcm	0.022	0.023	0.024	0.029	0.025	0.030	0.030
Material Density							
Uto 1.0 t/cu m mm	650	650	800	900	800	900	1200
Uto 1.5 t/cu m mm	-	-	600	-	600	-	800
Uto 2.5 t/cu m mm	-	-	500	600	500	600	800

2. Manufacturer/Supplier : M/s Dunlop India Ltd.,
57 B, Mirza Ghalib Street,
Calcutta - 700 016.

F : Transport, Winding, Conveying & Road Maintenance Equipment

(a) Starlon Fire Resistant Plied P V C

	(i)	(ii)	(iii)	(iv)	(v)
Type	3	4	5	6	8
Tensile Strength (min)kn/m :					
Longitudinal	580	700	875	1140	1400
Transvers	245	265	280	350	350
Elongation Percentage(min):					
Longitudinal	17	17	15	Open	Open
Transvers	18	18	18	18	18
Blet Thickness min mm :	7.5	8.0	8.5	9.0	9.0
Tear Strength KN :	1.00	1.09	1.18	1.54	1.54

Applicable for Handling ROM Coal, approved by DGMS for Use in Underground Mines.

(b) Starflex-Synthetic-General Duty

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
Type	250/2	315/3	400/3	500/3	630/3	250/2	312/3	400/3	500/3	650/3
Max Working Tension										
Kn/m	25	31	40	50	63	25	31	40	50	63
Nominal Carcass Thickness mm :	3.2	4.2	4.4	4.7	4.9	2.1	3.1	3.3	3.7	3.9
Nominal Carcass wt/kg/sqcm :	3.4	4.5	4.7	5.1	5.5	2.1	3.2	3.4	3.8	4.2
Material Density :										
Uto 1.0 t/cu m mm :	900	1200	1200	1400	1400	650	1000	1050	1200	1200
Uto 1.5 t/cu m mm :	650	1000	1000	1200	1200	600	800	900	900	1000
Uto 2.5 t/cu m mm :	500	800	800	900	1000	400	650	650	800	800

(c) Starflex-Synthetic-Heavy Duty

	(i)	(ii)	(iii)	(iv)	(v)
Type	250/2	315/3	400/3	500/3	630/3
Max Working Tension					
Kn/m	25	31	40	50	63
Nominal Carcass Thickness mm :	3.2	4.2	4.4	4.7	4.9
Nominal Carcass wt/kg/sqcm :	3.4	4.5	4.7	5.1	5.5
Material Density :					
Uto 1.0 t/cu m mm :	900	1200	1200	1400	1400
Uto 1.5 t/cu m mm :	650	1000	1000	1200	1200
Uto 2.5 t/cu m mm :	500	800	800	900	1000

Capacity Belt Width mm : Above 1500

1. Manufacturer/Supplier : M/s Anil Rubber Mills Pvt. Ltd.,
2140-41 Pan Mandi, Sadar Bazar,
Delhi - 110 006

F : Transport, Winding, Conveying & Road Maintenance Equipment

Type		(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Max Working Tension		500/4	630/3	630/4	800/3	800/4	1000/4	1000/4
Max Working Tension	Kn/m	500	630	630	800	800	1000	1000
Nominal Carcass Thickness	mm	5.2	4.0	5.4	4.6	5.6	6.4	7.2
Nominal Carcass								
	wt/kg/sqcm	0.046	0.036	0.049	0.038	0.051	0.054	0.066
Material Density								
Uto 1.0 t/cu m	mm	1600	1400	1600	1400	1600	1600	1600
Uto 1.5 t/cu m	mm	1400	1200	1500	1200	1600	1600	1600
Uto 2.5 t/cu m	mm	1200	1050	1400	1050	1400	1400	1500
Type		(viii)	(ix)	(x)	(xi)	(xii)	(xii)	
Max Working Tension		1250/4	1250/5	1400/4	1400/5	1600/4	1600/5	
Max Working Tension	Kn/m	1250	1250	1400	1400	1600	1600	
Nominal Carcass Thickness	mm	8.4	9.0	9.6	9.8	9.6	12.3	
Nominal Carcass								
	wt/kg/sqcm	0.062	0.080	0.077	0.089	0.081	0.100	
Material Density								
Uto 1.0 t/cu m	mm	1600	1600	1600	1600	1600	1600	
Uto 1.5 t/cu m	mm	1600	1600	1600	1600	1600	1600	
Uto 2.5 t/cu m	mm	1500	1600	1600	1600	1600	1600	

2. Manufacturer/Supplier : M/s Dunlop India Ltd.,
57 B, Mirza Ghalib Street,
Calcutta - 700 016.

(a) **Starflex-Synthetic-Heavy Duty**

Type		(i)	(ii)
Max Working Tension		630/4	800/4
Max Working Tension	Kn/m	70	90
Nominal Carcass Thickness	mm	6.7	7.1
Nominal Carcass			
	wt/kg/sqcm	7.2	7.7
Material Density			
Uto 1.0 t/cu m	mm	1800	1800
Uto 1.5 t/cu m	mm	1400	1600
Uto 2.5 t/cu m	mm	1200	1400

(b) **Steel Cord**

Type		(i)	(ii)	(iii)	(iv)	(v)
Min Top Cover Thickness		ST 500	ST 630	ST 800	ST 900	ST 1000
Min Top Cover Thickness	mm	5	5	5	5	5
Min Bottom Cover Thickness	mm	5	5	5	5	5
Total Belt Thickness						
With Min covers	mm	12.5	12.5	13.2	13.8	13.8

F : Transport, Winding, Conveying & Road Maintenance Equipment

Belt Wt with Min Covers 'Standard' kg/sqm	:	16.40	16.92	18.37	19.39	19.79
Type	:	(vi) ST 1150	(vii) ST 1250	(viii) ST 1400	(ix) ST 1600	(x) ST 1800
Min Top Cover Thickness mm	:	5	5	5	5	5
Min Bottom Cover Thickness mm	:	5	5	5	5	5
Total Belt Thickness With Min covers mm	:	13.9	13.9	14.7	15.3	15.3
Belt Wt with Min Covers 'Standard' kg/sqm	:	20.45	20.98	22.16	23.48	24.01
Type	:	(xi) ST 2000	(xii) ST 2250	(xiii) ST 2500	(xiv) ST 2750	(xv) ST 3150
Min Top Cover Thickness mm	:	5	5	5	6	6
Min Bottom Cover Thickness mm	:	5	5	5	6	6
Total Belt Thickness With Min covers mm	:	15.3	16.4	16.8	19.0	19.6
Belt Wt with Min Covers 'Standard' kg/sqm	:	24.63	27.98	29.38	32.29	34.81
Type	:	(xvi) ST 3500	(xvii) ST 3750	(xviii) ST 4000	(xix) ST 4250	(xx) ST 4500
Min Top Cover Thickness mm	:	7	7	7	8	8
Min Bottom Cover Thickness mm	:	7	7	7	8	8
Total Belt Thickness With Min covers mm	:	22.0	22.4	22.8	25.6	26.2
Belt Wt with Min Covers 'Standard' kg/sqm	:	39.05	41.14	42.61	46.51	48.50
Type	:	(xxi) ST 4750	(xxii) ST 5000	(xxiii) ST 6000		
Min Top Cover Thickness mm	:	8	9	9		
Min Bottom Cover Thickness mm	:	8	9	9		
Total Belt Thickness With Min covers mm	:	26.6	29.0	30.4		
Belt Wt with Min Covers 'Standard' kg/sqm	:	50.05	54.08	60.69		

FIII (5) Accessories of Conveying Equipment

(a) Idlers

1. Manufacturer/Supplier : M/s International Combustion (India) Ltd.,
101, Park Street,
Calcutta - 700 016.

Troughing Idlers

Type	:	(i) Standard Duty	(ii) Heavy Duty
Belt Width mm	:	400 to 1800	650 to 1800

F : Transport, Winding, Conveying & Road Maintenance Equipment

2. Manufacturer/Supplier : M/s Kali Material Handling System,
318, Mount Road, IInd Floor,
Teynampet,
Chennai - 600 018.

Model : (i) Troughing Idlers/Sets (ii) Flat Carrying Idlers/Sets (iii) Festoon/ Garland/ Catenary/ Sets (iv) Self Aligning Troughing Idlers/Sets

Model : (v) Self Aligning Return Idlers/ Sets (vi) Return Idlers/Sets (vii) Impact Troughing Idlers/Sets (viii) Flat Impact Idlers/Sets

Model : (ix) Self Cleaning Return Idlers/Sets (x) Idlers/Sets For Belts (xi) Non-Magnetic Idlers/Sets

(b) Conveyor Drum

Manufacturer/Supplier : M/s Manoj Industries,
20/21 B, Kandra Industrial Area,
P. O. Govindpur, Dist. Dhanbad
Conveyor Drum With Keywayed Bosses.
Heavy Duty Conveyors Drum with Rubber Laging.
Self Cleaning Self Lubricant Conveyor Drums.
Return Drums and Rollers.

(c) Conveyor Pulleys

1. Manufacturer/Supplier : M/s Kali Material Handling System.
318, Mount Road, IInd Floor,
Teynampet,
Chennai - 600 018.

Model : (i) Drive Pulleys (ii) Tail Pulleys (iii) Snub Pulleys (iv) Bend Pulleys (v) Take up Pulleys

2. Manufacturer/Supplier : M/s Mechanical Movements Pvt. Ltd.,
3, Netaji Subhash Marg,
New Delhi - 110 002.

Dia of Pulley mm : 200 to 900
Pace Width : 300 to 2000

(d) Belt Fasteners

Manufacturer/Supplier : M/s Chanda & Co.(Engg.) Pvt. Ltd.,
3/18, Mahendra Road,
Calcutta - 700 025.

F : Transport, Winding, Conveying & Road Maintenance Equipment

Type	:	(i) Strong Hold Place	(ii) Strong Hold Hook	(iii) Strong Hold Staple Type - A	(iv) Strong Hold Staple Type - B
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(e) Belt Vulcanizers

Manufacturer/Supplier : M/s Chanda & Co.(Engg.) Pvt. Ltd.,
3/18, Mahendra Road,
Calcutta - 700 025.

Range	:	(i) Vulcanizer for Slicing of Conveyor Belt 135° to 155° c	(ii) Spot Vulcanizer for Repairing Conveyor Belt 135° to 155° C
Belt Width	mm :	-	600 to 1200

(f) Roller Chains

Manufacturer/Supplier : M/s Standard Materials Agencies,
45/46 Podar Chambers,
P. B. No. 1660, S. A. Brelvil Road,
Mumbai - 400 023

Pitch	mm :	9.525 to 76.2
Breaking Load	kg :	950 to 170000

FIV WINCHES, HOISTS AND ROPE HAULAGES

FIV (1) Winches

(a) Air Winches

1. Manufacturer/Supplier : M/s Holman-Climax Manufacturing Ltd.,
Dolphin Court, 71 Middleton Street,
Calcutta - 700 071.

Model	:	HJA
Cap	t :	1
Air PR	kg/sq cm :	4.2 & 5.6
Rope Pull	kg min :	400
	max :	1079
Rope Speed m/min	min :	12.2
	max :	53.3

2. Manufacturer/Supplier : M/s IEC Dusterloh Pvt. Ltd.,
603, Sadashivpeth,
Laxmi Road, Pune - 411 030.

Model	:	(i) IDMW-06-1000	(ii) PLL-10-2200	(iii) IDMW-06-3500
Capacity	t :	1	1	3.5

F : Transport, Winding, Conveying & Road Maintenance Equipment

Pull 1 Layer	kg	:	1200	1500	3500
Speed	m/sec	:	0.23	0.23	-
Pull 6 Layer	kg	:	800	1000	-
Speed	m/sec	:	0.32	0.34	-
Brake		:	Lever Operated Brand Brake	Caliper Brake/ Disc Brake/ Exhaust Brake	-
Rope Dia	mm	:	12/13	12/13	19
Length	mm	:	80	80	-
Capacity	m	:	-	-	200
Weight	kg	:	190	400	1000 (Weight Without Rope)
		:	Air Operated Material Handling Winch	Air Operated Personal Winch	Air Operated Material Handling Winch
Model		:	(iv) IDMW-06-3500	(v) IDMW-06-4400	(vi) IDMW-06-5000
Capacity	t	:	3.5	4.5	5
Pull 1 Layer	kg	:	3500	4500	5000
Speed	m/sec	:	-	-	-
Rope Dia	mm	:	19	19	17 - 20/24
Length	mm	:	-	-	22
Capacity	m	:	200	200	200/125
Weight	kg	:	1000	1200	1350
		:	(Weight Without Rope) Air Operated Personnel Winch	(Weight Without Rope) Air Operated Material Handling Winch	(Weight Without Rope) Air Operated Material Handling Winch
		:	(vii) IDMW-06-7000		
		:	7		4700 - 7000
		:	-		0.22 - 0.34
		:	-		130
		:	-		-

(b) Electric Winches

1. Manufacturer/Supplier : M/s International Combustion (India) Ltd.,
101, Park Street,
Calcutta - 700 016.

Single Speed haulage

Type	:	Endless	Endless	Single Drum
Motive Power	:	Electric	Electric	Electric
H P	:	20	20	20
Rope Dia	mm	:	15	15
Rope Speed	m/min	:	50	80

2. Manufacturer/Supplier : M/s Pullman Engineering Co. Pvt. Ltd.,
32, Ganesh Chandra Avenue,
Calcutta - 700 013.

Model	:	Single, Double and Triple Drum Models available	
Cap	t	:	1 to 100

F : Transport, Winding, Conveying & Road Maintenance Equipment

Direct and Endless Haulage

Capacity KW : Up to 100

3. **Manufacturer/Supplier** : M/s Voltas Ltd.,
Mining & Construction Equipment Division,
16, J. N. Heredia Marg, Ballard Estate,
Mumbai - 440 039.

		(i)	(ii)	(iii)	(iv)	(v)*	(vi)
Model	:	4000 H	4000 H	50 HD	50 HD	100 HD	100 HD
Type	:	Direct	Endless	Direct	Endless	Direct	Endless
Rating	KW :	37	30	50	50	100	75
Rope Speed	m/min :	76 to 102	58 to 76	133.3	60	150	63.3
Rope Cap	m :	822	-	950	-	1220	-
Rope Dia	mm :	16	16	22	25	25	25
Overall Dimensions							
L	mm :	1930	1930	3750	3650	4670	4200
W	mm :	1080	1080	2200	2040	4670	2100
H	mm :	1035	1035	1550	1483	2200	2120
Wt Without Motor	kg :	1050	1250	7184	5986	8982	8500

* The party informed in Nov'89 that the product has since been discontinued from production.

(c) Electric/Diesel Winches

1. **Manufacturer/Supplier** : M/s Mechanical Movements Pvt. Ltd.,
3, Netaji Subhash Marg,
New Delhi - 110 002.

		(i)	(ii)	(iii)	(iv)	(v)	(vi)
Model	:	EW 01	EW 02	EW 03	EW 05	EW 75	EW 100
Cap	:	1	2	3	5	7.5	10
Max Speed	m/min :	25	25	20	10	8	6
Motor	HP :	7.5	15	20	20	25	25
Rope Dia	mm :	11	15	19	24	32	35
Drum Dia	mm :	220	300	400	480	640	700
Min Rope Cap of Drum	m :	80	80	75	65	60	60

FIV (2) Mine Hoists

Manufacturer/Supplier : M/s Bharat Gold Mines Ltd.,
Suvarana Bhavan, Oorgaum Post,
Kolar Gold Fields - 563 120, Karnataka.

		(i)	(ii)
Type	:	Single or Double Drum	Single or Double Drum
Cap	HP :	Upto 1000	Upto 1000
Drum Dia	m :	1.6 to 4.0	1.6 to 4.87
Power	:	AC with Dynamic Breaking Or DC Thyristor Drives	AC with Liquid Controller/Grid Resistance DC With Digital Thyristor Controller

F : Transport, Winding, Conveying & Road Maintenance Equipment

FIV (3) Wire Ropes

Manufacturer/Supplier	:	M/s The Fort William Co. Ltd., (Steel Wire & Rope Division), 14, Netaji Subhas Road, Calcutta - 700 001.	
Type	:	(i) Haulage, Winding & Aerial Ropeway Ropes	(ii) Shipping Ropes
Construction	:	6 x 7	6 x 7, 6 x 19, 6 x 37, 6 x 12, 6 x 24 ETC. Galvanised Wires
Wt	kg/100 m	:	22.9 to 572
Dia	mm	:	8 to 40

FIV (4) Head Gears, Skips, Gages and Attachments

(a) Head Frames

Manufacturer/Supplier	:	M/s Bharat Gold Mines Ltd., Suvarana Bhavan, Oorgaum Post, Kolar Gold Fields - 563 120, Karnataka State.
Type	:	'A'
Range	m	: From 3.6 to 24 Height

(b) Cages and Skips

Manufacturer/Supplier	:	M/s Bharat Gold Mines Ltd., Suvarana Bhavan, Oorgaum Post, Kolar Gold Fields - 563 120, Karnataka State.	
Cage	Type	:	Single Deck/Double Deck
	Capacity	:	25 Men/Deck
	Material Used	:	Mild Steel; Structural Steel
Skips	Type of Discharge	:	Self Dumping; Bottom Discharge & Side Discharge
	Material to be Hoisted	:	Coal; Quartz, etc.
	Capacity	t	: 0.5 to 7.50
	Material Used	:	Mild Steel; Structural Steel with Tiscral Add Stainless Steel Liners

(c) Cage Suspension Gears

1. Manufacturer/Supplier	:	M/s Bharat Gold Mines Ltd., Suvarana Bhavan, Oorgaum Post, Kolar Gold Fields - 563 120, Karnataka State.
Model	:	Components made from 1.5 percent Mn Steel for Ropes of 19, 22, 25 & 32 mm Dia Chase Block Cap : Upto 5 tonnes 'D' Shackles, Distribution Plate, Safety Hook, Swivelling System with Clivy Hook : All upto 10 T Cap
2. Manufacturer/Supplier	:	M/s Nanda Manufacturing Co., 32, A.C.R. Avenue, Calcutta - 700 012.
Items	:	(a) Friction Wedge Rope Cappel (b) Safety hook (c) Cage Bridels Chain Assembly

F : Transport, Winding, Conveying & Road Maintenance Equipment

- (d) Shackless & Pins
- (e) White metal Rope cappel
- (f) Clivy Hook
- (g) Hydraulic cappel banding Machine for Banding & Disbanding of cappels

(d) Sheave Wheel

Manufacturer/Supplier : M/s Bharat Gold Mines Ltd.,
Suvarana Bhavan, Oorgaum Post,
Kolar Gold Fields - 563 120, Karnataka State.

Type : Integral Type up to 1000 mm Dia
Split Type up to 3600 mm Dia

Dia mm : 1600 to 3600

(e) Storage Bins

Manufacturer/Supplier : M/s Bharat Gold Mines Ltd.,
Suvarana Bhavan, Oorgaum Post,
Kolar Gold Fields - 563 120, Karnataka State.

Cap : Various Capacities with Either Flat or Inclined Bottom to Specification

FIV (5) Accessories of Winding Engines, Hoists and Rope Haulages

(a) Air Motor

Manufacturer/Supplier : M/s IEC Dusterloh Pvt. Ltd.,
603, Sadashiv Peth,
Laxmi Road, Pune - 411 030.

	(i)	(ii)	(iii)	(iv)
Type	IPM 250	IPM 400	IPM 250	IPM 400
Speed rpm	max : 3000	3000	3000	3000
	min : 1500	1500	-	-
Torque nm	min : 16	22	25	38
	max : 19	28	-	-
Power kw	max : 4.75	6.8	8	11.3
	min : 3	4.3	-	-
Air Consumption				
	cum/in max : 6	8.4	10	14
	min : 3.7	4.9		

(b) Haulage Protection Device

Manufacturer/Supplier : M/s International Combustion (India) Ltd.,
101, Park Street, Calcutta - 700 016.

Pulley Size mm : 250 & 370

Angle Deflection of Rope : 3° if used without Speed Control Unit
6° if used without Speed Control Unit

(c) Rope Sockets, Clips, Testers, Rope Cutters

Manufacturer/Supplier : M/s Nanda Manufacturing Co.,
32 A.C.R. Avenue,
Calcutta - 700 012.

i) Haulage Rope Socket
Zinc Cone Tail Strand Type, Open & Closed
Rope Sockets

F : Transport, Winding, Conveying & Road Maintenance Equipment

- ii) Endless Haulage Clips
Screw ('Hadfield')
Smallman
Wedge (Bull Dog)
Cam for Overhead
- iii) Slip Load Tester to Determine the Slip Load Test of Endless Haulage Clips
- iv) Wire Ropes Cutter
'NMC' Wire Rope/Cable Cutter
Model - HC 1 can cut 32 mm Dia Wire/Cable
Model - HC 2 can Cut 50 mm Dia Wire/Rope

FV Road Maintenance Equipment

Road Rollers

1. Manufacturer/Supplier : M/s Escorts Limited,
Sector 13,
Faridabad - 121 077, Haryana
- | Model | (i) | (ii) | (iii) | (iv) | (v) | (vi) | (vii) |
|----------------------|--------------|---------|-------|---------|---------|------|----------|
| Operating wt | kg : 9100 | 9400 | 10300 | 10600 | 10900 | 2400 | 6750 |
| Vibrating Frequency | hz : 30 | - | 29 | 30 | 30 | 50 | 48 |
| Dual Amplitude | mm : 1.7/0.8 | 1.7/0.8 | 1.6 | 1.7/0.8 | 1.7/0.8 | 0.6 | 0.7/0.35 |
| Drum w | mm : 2130 | 2130 | - | - | 2130 | 1070 | 1450 |
| Drum Shell Thickness | mm : - | - | - | 38 | 38 | - | - |
| Total Applied Force | mm : 25100 | 25400 | 29700 | 31600 | 31900 | - | - |
2. Manufacturer/Supplier : M/s Larsen & Toubro Ltd.,
L & T House, Ballard Estate,
Mumbai - 400 038.
- | Model | (i) | (ii) | (iii) |
|-------------------|---------------------|------|-------------------|
| Operating wt | kg : 8500 | | |
| Wt On Front Rolls | kg : 7400 | | |
| Engine | : Leyland ALU - 400 | | |
| No. of Cylinders | : 6 | | |
| Speed | rpm : 2100 | | |
| Electrical System | V : 24 | | |
| Fuel Tank Cap | Lit : 150 | | |
| Model | : 1104 Smooth Drum | | 752 Tandem Roller |
| Horse Power | : 112 | | 74 |
| Weight | t : 10.43 | | 8.8 |
| Amplitude | mm : 1.6/0.6 | | 1.0/0.4 |
| Frequency | hz : 28/36 | | 33.3/50 |
| Options | : PD Version | | - |
3. Manufacturer/Supplier : M/s Sayaji Iron & Engineering Co. Pvt. Ltd.,
Channi Road,
Baroda - 390002, Gujarat.
- | Model | (i) | (ii) |
|-------|-------------------------|-----------------------|
| Cap | t : 3 Wheel Road Roller | Vibratory Road Roller |
| | t : 2 to 10 | 8 to 10 |