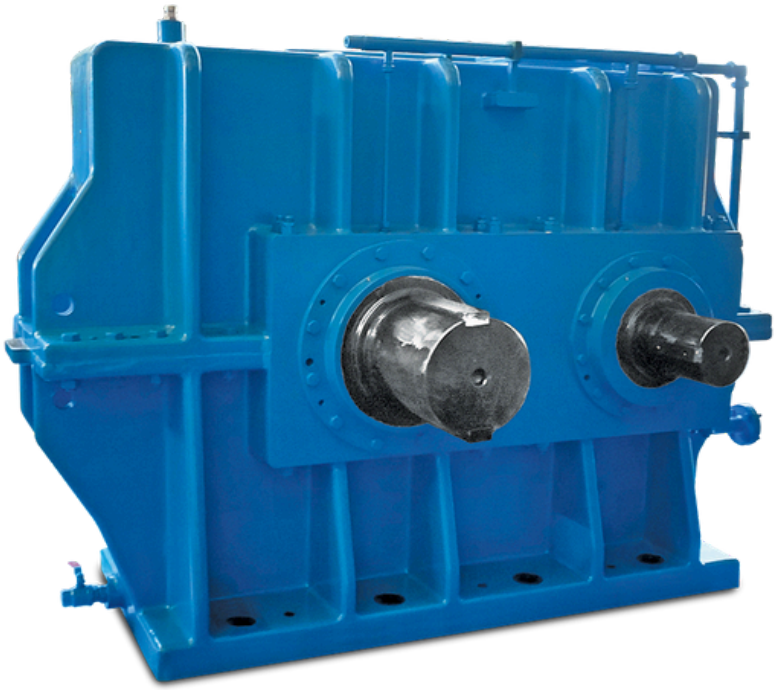
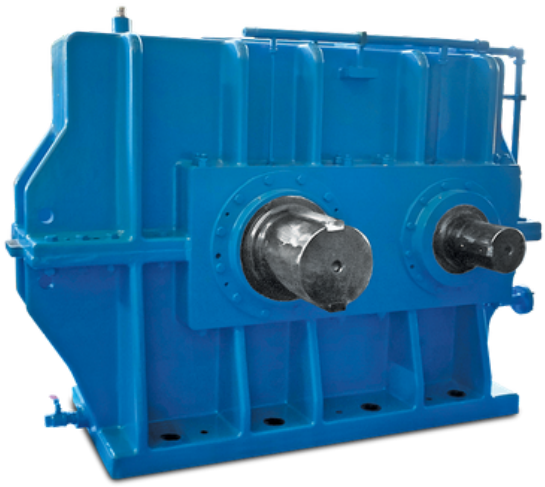
MOVICON

PINION DRIVE
FOR TUBE MILLS



SINGLE STAGE
HELICAL GEARBOX

INDEX



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01. DESCRIPTION

These gear units are specifically engineered for use in tube mill drives featuring the conventional external pinion and girth gear configuration.

A key advantage of this gear unit series is the adaptable center distance, which can be tailored to the required power rating - ensuring cost-effective solutions tailored to each application.

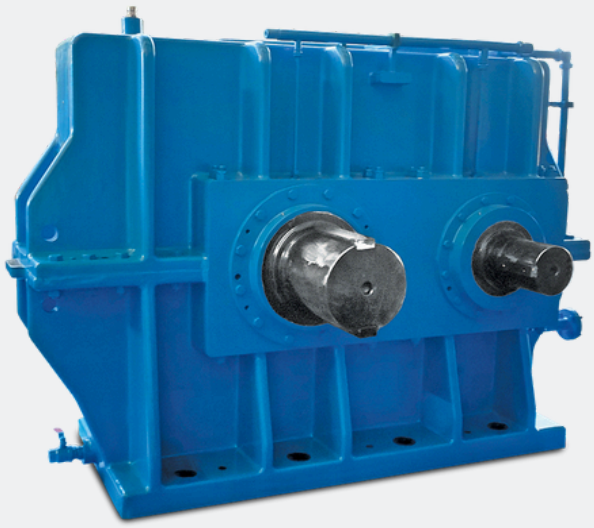
The gears are case-hardened with precision-ground tooth flanks for enhanced durability and performance.
All shafts are mounted in rolling bearings for reliable support and reduced friction.

Designed and calculated in accordance with international standards, these gear units meet the demanding performance and reliability requirements of the minerals industry.

- An independent oil supply system ensures efficient cooling and lubrication.
- A low-pressure lubrication system delivers oil directly to the gear teeth and bearings, guaranteeing optimal operating conditions.

KEY FEATURES

- Optimized tooth mesh
- Dual input shaft design
- Main motor connection
- Auxiliary drive connection



Durability • Efficiency • Reliability • Flexibility

02. GENERAL INFORMATION

The following items are absolutely to be observed!

1. The weights of the gearboxes are mean values and not strictly binding.
2. Prior to commissioning, the operating instructions must be observed. The gear units are delivered ready for operation but without oil filling.
3. Oil quantities given are guide values only. The exact quantity of oil depends on the marks on the oil level dipstick.
4. The oil viscosity has to correspond to the data given on the name plate.
5. Approved lubricants should be used only. (Refer operating instruction manual)
6. The Gear case housings are protected against corrosion.
7. Foundation bolts are minimum property class-8.8.
8. Modification of dimensions reserved.
9. Shaft ends with keys according to DIN 6885, part 1, Shape A.
10. Shaft centering according to DIN 332, shape DS (with thread).
11. Tolerance fields for shaft ends ISO fits, details refer to separate page.
11. Shaft extension keys are supplied with gear units. (excluding hollow shaft key)
12. All dimensions are in millimeters unless indicated otherwise.

SYMBOLS USED IN DIMENSION DRAWINGS:

Oil dipstick 

Breather 

Drain plug 

Oil filling 

03. GEAR UNIT SELECTION

GEAR UNITS

TYPE MTMS1
Size 1, 2, 3

The gear unit size is selected based on power rating and torque tables. The service factor 2 is included in power rating of table-1 on the following page.

MTMS1 Gear Units
The MTMS1 is a standardized gear unit, carefully optimized to meet the high-performance requirements of tube mill applications in the cement industry.

EXAMPLE

Mill Power Rating:	8000 kW
Input Speed:	1000 RPM
Output Speed:	178 RPM

RESULTS

Required Output Torque:	429 kNm
Suitable Gear Unit:	MTMS1-968, E= 968, Ratio - 5.6
Service Factor:	2.0 (Minimum)

03.1 MAXIMUM MILL POWER RATING

TABLE - 1

RATIO; iN	INPUT SPEED, n1 (RPM)	OUTPUT SPEED, n2 (RPM)	MAX. MILL POWER RATING					
			MTMS1-716	MTMS1-875	MTMS1-968	MTMS1-1070	MTMS1-1120	MTMS1-1340
			P2 (kW) with Minimum S.F.-2					
3.15	1000	317.5	7150	-	-	-	-	-
	750	238.1	-	-	-	-	-	-
3.55	1000	281.7	5650	8300	-	-	-	-
	750	211.3	-	-	-	-	-	-
4	1000	250	4700	7450	13750	-	-	-
	750	187.5	-	-	-	-	18300	-
4.5	1000	222.2	4250	6150	11590	14150	-	-
	750	166.7	-	-	-	-	15250	21550
5	1000	200	3900	5000	10210	12120	-	-
	750	150	-	-	-	-	13400	18920
5.6	1000	178.6	3150	4380	8550	10150	-	-
	750	133.9	-	-	-	-	11750	16000
6.3	1000	158.7	-	3950	6700	8600	-	-
	750	119	-	-	-	-	9600	13400
7.1	1000	140.8	-	3350	-	6500	-	-
	750	105.6	-	-	-	-	7580	11100

TABLE - 2

RATIO; iN	INPUT SPEED, n1 (RPM)	OUTPUT SPEED, n2 (RPM)	MAX. MILL POWER RATING					
			MTMS1-716	MTMS1-875	MTMS1-968	MTMS1-1070	MTMS1-1120	MTMS1-1340
			T2 (kNm) with Minimum S.F.-2					
3.15	1000	317.5	208	-	-	-	-	-
	750	238.1	-	-	-	-	-	-
3.55	1000	281.7	190	275	-	-	-	-
	750	211.3	-	-	-	-	-	-
4	1000	250	185	281	525	-	-	-
	750	187.5	-	-	-	-	920	-
4.5	1000	222.2	185	266	501	612	-	-
	750	166.7	-	-	-	-	864	1228
5	1000	200	180	250	499	592	-	-
	750	150	-	-	-	-	863	1218
5.6	1000	178.6	171	239	454	564	-	-
	750	133.9	-	-	-	-	810	1143
6.3	1000	158.7	-	233	394	516	-	-
	750	119	-	-	-	-	748	1071
7.1	1000	140.8	-	222	-	428	-	-
	750	105.6	-	-	-	-	681	1016

04. GEARBOX TYPE MTMS1

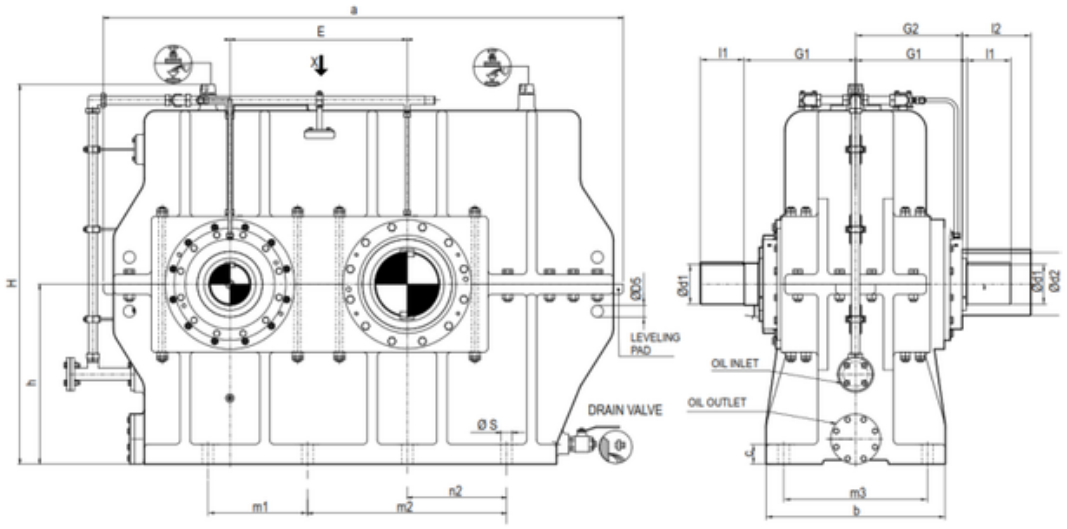
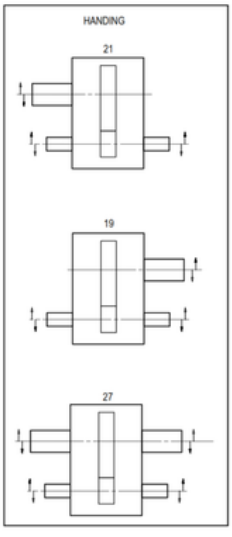


TABLE - 3

GEARBOX TYPE / SIZE	DIMENSIONS IN MM										WEIGHT (kg)
	E	INPUT							OUPTUT			
		d1	l1	d1	l1	d1	l1	G1	d2	l2	G2	
MTMS1-716	716	iN=3.15 - 4.5		iN= 5-5.6		-		540	300n6	500	440	9000
		200n6	310	180n6	310	-	-					
MTMS1-875	875	iN=3.55 - 5.6		iN= 6.3-7.1		-		540	300n6	500	440	10900
		200n6	310	-	-	-	-					
MTMS1-968	968	iN= 4 - 6.3		-		-		640	360n6	590	560	17000
		220n6	380	-	-	-	-					
MTMS1-1070	1070	iN=4.5 - 7.1		-		-		640	360n6	590	560	18500
		220n6	380	-	-	-	-					
MTMS1-1120	1120	iN=4 - 4.5		iN= 5-5.6		iN= 6.3-7.1		880	480n6	790	700	32000
		320n6	500	290n6	470	230n6	400					
MTMS1-1340	1340	iN=4.5 - 5.6		iN= 6.3 - 7.1		-		880	480n6	790	700	40500
		320n6	500	260n6	400	-	-					

TABLE - 4

GEARBOX TYPE / SIZE	DIMENSIONS IN MM										
	E	a	b	c	D5	h	H	m1	m2	m3	n2	S
MTMS1-716	716	2480	900	100	70	900	1880	500	1000	720	500	56
MTMS1-875	875	2480	900	100	70	900	1880	500	1000	720	500	56
MTMS1-968	968	2950	1000	120	70	1100	2230	575	1175	800	600	74
MTMS1-1070	1070	2950	1000	120	70	1100	2230	575	1175	800	600	74
MTMS1-1120	1120	3750	1280	200	80	1345	2840	770	1650	1060	870	82
MTMS1-1340	1340	3750	1280	200	80	1345	2840	770	1650	1060	870	82



05. ACTUAL RATIOS

TABLE - 5

TYPE	GEARBOX SIZE	716	875	968	1070	1120	1340
	CD	716	875	968	1070	1120	1340
	NOMINAL RATIO	ACTUAL RATIO	ACTUAL RATIO	ACTUAL RATIO	ACTUAL RATIO	ACTUAL RATIO	ACTUAL RATIO
MTMS1	3.15	3.053	-	-	-	-	-
	3.55	3.529	3.474	-	-	-	-
	4	4.118	3.947	4.000	-	3.950	-
	4.5	4.556	4.529	4.529	4.529	4.450	4.474
	5	4.824	5.235	5.118	5.118	5.056	6.056
	5.6	5.684	5.722	5.556	5.824	5.412	5.611
	6.3	-	6.176	6.158	6.278	6.118	6.278
	7.1	-	6.944	-	6.895	7.059	7.188

06. OIL SUPPLY SYSTEMS

TABLE - 6

OIL SUPPLY SYSTEMUNIT SIZE			
GEARBOX TYPE / SIZE	MIN. QUANTITY OF OIL REQUIRED (LPM)	PRESSURE CONNECTION	OIL RETURN CONNECTION
MTMS1-716	150	DN 50	DN 150
MTMS1-875	150	DN 50	DN 150
MTMS1-968	150	DN 65	DN 150
MTMS1-1070	150	DN 65	DN 150
MTMS1-1120	150	DN 80	DN 200
MTMS1-1340	150	DN 80	DN 200

ADDITIONAL NOTES

- Max. starting torque = 2.3 x T2
- Oil Supply system required with tank
- Heater, if required, to be in the tank of the oil supply system
- Oil supply system always to be located below gear unit level

STANDARD DELIVERY

- Coarse filter at oil inlet
- Pressure monitor
- Pressure gauge
- Oil drain
- Oil level indicator
- Taconite seal at input and output
- Grease lubrication points at input and output cover

ADDITIONAL OPTIONS

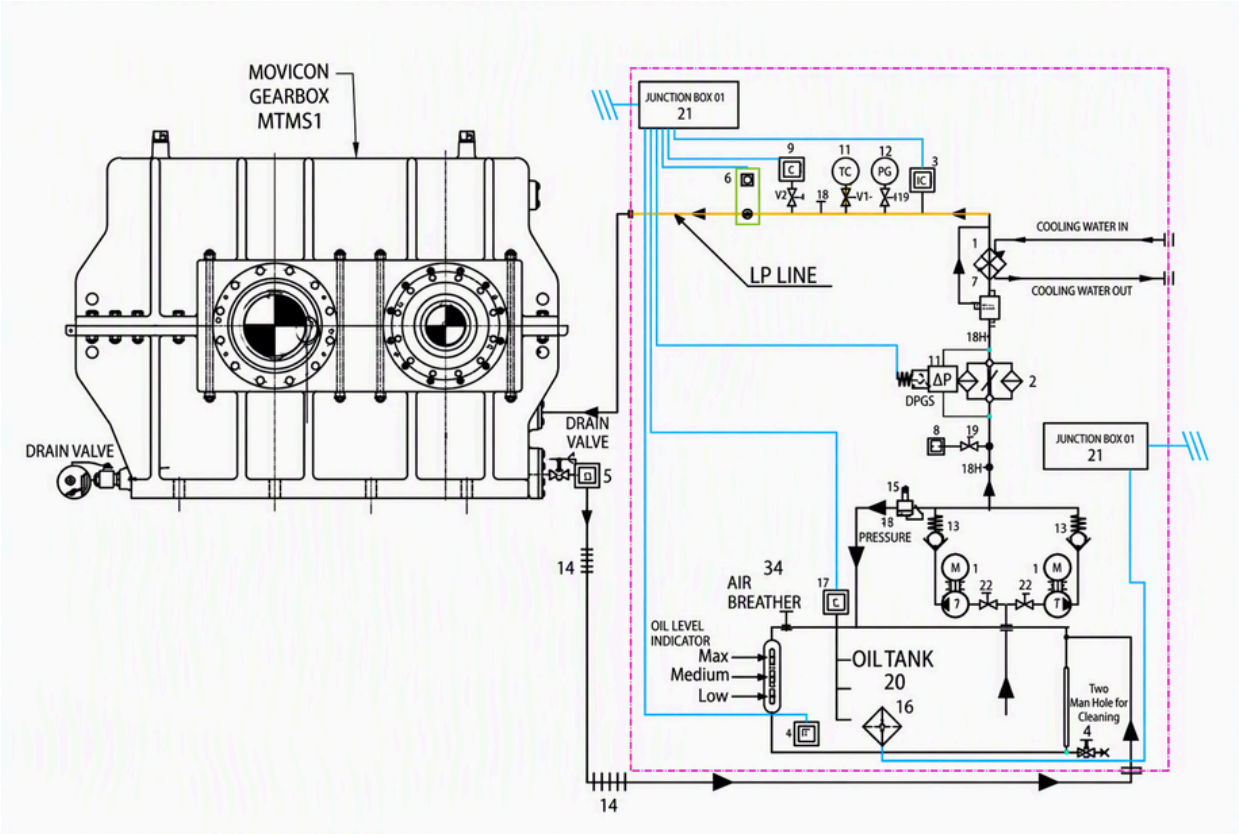
- RTD in the oil
- RTD for all bearings
- Provisions for vibration sensors mounting
- Protection covers on shafts

06.1 OIL SUPPLY LINE DIAGRAM

MOVICON also provides the complete oil supply system.

A single system supplies oil to both the gear unit and the girth gear, eliminating the need for grease. This not only reduces maintenance time and costs but also avoids the unpleasant and costly disposal of grease.

To enhance reliability, two pump groups are installed, with one functioning as a standby, ensuring increased protection against system failure.



6		FLOW SWITCH	12		PRESSURE GAUGE	18		MEASURING PIONT	22		BALL VALVE
5		SUCTION STRAINER	11		TEMP. GAUGE	17		LEVEL SENSOR	21		JUNCTION BOX
4		DRAIN VALVE	10		DPGS	16		HEATER	20		OIL TANK
3		OIL COOLER	9		PRESSURE SWITCH	15		PRESSURE RELIFE VALVE	19		ISOLATION VALVE
2		DUPLEX FILTER	8		RTD	14		COMPENSATOR			
1		PUMP-MOTOR SET	7		TEMPERATURE CONTROL VALVE	13		NON RETURN VALVE			



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Details and dimensions are subject to change without prior notice.