



## Motorized Pulley 500L, 500M & 500H, Ø 19.72 in. (501 mm)

Our 19.72" diameter Motorized Pulley range offers three different performance levels for BULK applications:

- **L** for Light duty
- **M** for Medium duty
- **H** for Heavy duty

It is important to notice the product differences and choose the appropriate pulley based on estimated belt tension (radial load.) See page 78. The actual radial load must be less than the maximum allowable radial load shown in this catalog.

Be aware of increased belt tensions required to drive multi-ply thick heavy belts and/or larger belt widths.

If the 19.72" diameter model is not strong enough to resist estimated belt tension, then select 24.80" diameter model.

### L for Light duty

500L is designed for tough and irregular operating conditions. 500L is typically used in heavy mobile crushing & screening applications as well as in crushed stone, ore, cement, steel, and fertilizer handling. 500L uses motor and gearbox from 400M. Note that 500L outer dimensions do not match 500H (Former models TM500 and TM501).

### M for Medium duty

A solid 3-stage gearbox enables the 500M to provide low speed at high torque and handle irregular loadings in harsh operating conditions. 500M uses motor and gearbox from 400H. Note that 500M outer dimensions do not match 500H (Former models TM500 and TM501).

### H for Heavy duty

500H has strongest internal components in this diameter with gearbox, shaft, and bearings designed for tough, irregular, and extreme operating conditions.

### STANDARD SPECIFICATION of Motorized Pulley

- Crowned mild steel 19.72" diameter steel shell painted yellow at a minimum thickness of 2.4 mils
- Bolted powder coated cast iron bearing housings and covers, all painted yellow at a minimum thickness of 2.4 mils
- Mild steel shafts
- Shaft sealing system - degree of protection IP66/67 (EN60034-5.) See page 88.
- Cast iron terminal box for painted yellow at min.thickness of 2.4 mils
- 3-phase induction motors with thermal protector
- Voltage: All common voltages available. Please specify.
- Motor winding insulation Class F
- Dynamically balanced rotor
- Two oil plugs each fitted with a magnet to filter the oil
- Black painted mounting brackets (KL60) for 500L and 500M available on request
- Yellow painted mounting brackets (AL65 & ALO65) included with 500H
- Oil change recommended every 10,000 operational hours
- Minimum RL. Refer to pages 53 & 58
- Maximum RL - Please inquire
- Non standard RL's available
- To be used in horizontal positions  $\pm 5$  degree only

### Please note:

- **Noise-sensitive Areas:** High speed 2-pole motors can cause higher noise levels and are not recommended for noise-sensitive areas
- **Technical Precautions for Design, Installation, and Maintenance:** pages 76-86
- **Environmental Considerations:** page 72
- **Optional Extras:** page 51 and back cover
- **Electrical Connection Diagrams:** pages 94-96.

### SEMI-RUST-FREE options

#### TS11 – (500L & 500M)

- Painted mild steel shell at minimum thickness of 4.7 mils
- Stainless steel shafts – AISI 303/4 range
- Painted cast iron end housings at minimum thickness of 4.7 mils
- Stainless steel bearing covers with labyrinth grooves and grease nipples – AISI 304 range
- Zinc plated oil plugs each with magnet
- Zinc plated exterior bolts
- Shaft sealing system – degree of protection IP66/67 (EN60034-5.) See page 88.
- Painted terminal box at minimum thickness of 4.7 mils
- Nickel plated mounting brackets are available

#### TS11 – (500H)

- Painted mild steel shell at minimum thickness of 4.7 mils
- Painted cast iron end housings at minimum thickness of 4.7 mils
- Stainless steel covers with labyrinth grooves – AISI 304 range
- Nitrided shaft sleeves
- Zinc-plated oil plugs - each with magnet
- Zinc-plated exterior bolts
- Shaft sealing system – degree of protection P66/67 (EN60034-5) See pg 88.
- Painted terminal box at minimum thickness of 4.7 mils
- Nickel plated mounting brackets with labyrinth grooves

#### TS12

- As TS11, but without regreasable seals.
- Covers - standard

### Please note:

- FDA & USDA food grade recognized oil and grease are not included in TS11 & TS12, but available on request

**Please specify required TS-number when ordering Stainless Steel options.**



## OPTIONAL EXTRAS

### Motorized Pulley 500L, 500M & 500H

Specification		Availability
Semi-rust-free option	TS11 with regreasable labyrinth seals	x
Semi-rust-free option	TS12 with standard seals	x
Regreasable labyrinth seals		x
Dust explosion proof Motorized Pulleys - ATEX 95 - Zone 22 - for applications handling of dusty grain etc. According to European Directive 94/9/EC.		x
Standard black rubber lagging (See page 80.)		
3/8" full smooth lagging - Hardness 60 ±5 Shore A		o
3/8" full diamond lagging - Hardness 60 ±5 Shore A		o
3/8" partial smooth lagging - Hardness 60 ±5 Shore A		o
White smooth rubber lagging (FDA listed) - Oil, fat & grease resistant		o
Special lagging - e.g. hot vulcanized, partial, and ceramic (See page 80.)		o
Internal electromagnetic brake (not available in 500H)	Min. RL increases by 3.94" for 500L and 500M	x
External brake shaft (for mechanical brake by others)	Only available in 500H	x
Mechanical backstop	Min. RL = 29.53" for 500L	x
	Min. RL = 31.50" for 500M	x
	Min. RL = 29.53" for 500H	x
Insulation class F with standard oil: (allowable ambient temperature: -13°F/+104°F)		Std.
Insulation class H with synthetic oil: (allowable ambient temperature: -13°F/+120°F)		x
Parallel shell		x
Thermal protector		Std.
Voltage: Single voltage (460) stator (Y winding) wired for 460v/3ph/60 Hz at terminal box		Std.
IP66/67 Standard yellow powder coated cast iron terminal box		Std.
Special voltage motors		x
CSA approved motors		x

= Optional extras

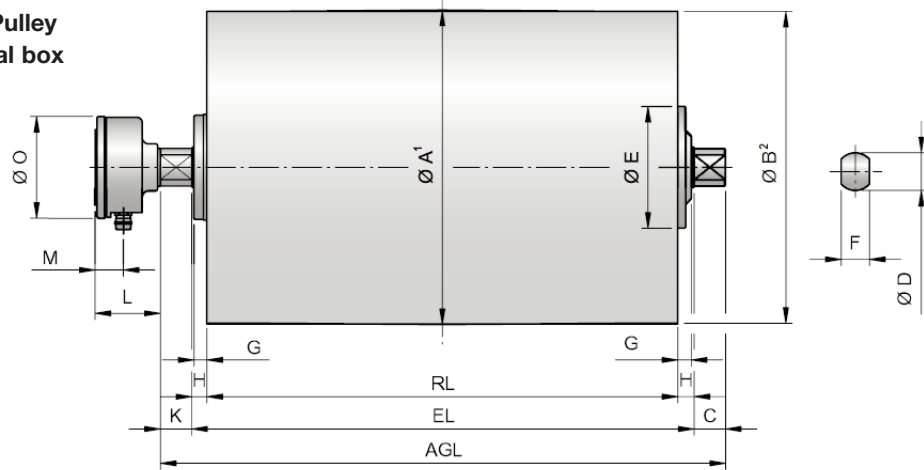
= An option with certain limitations. Please refer to Technical precautions pages 76-86.

= Fitted as standard

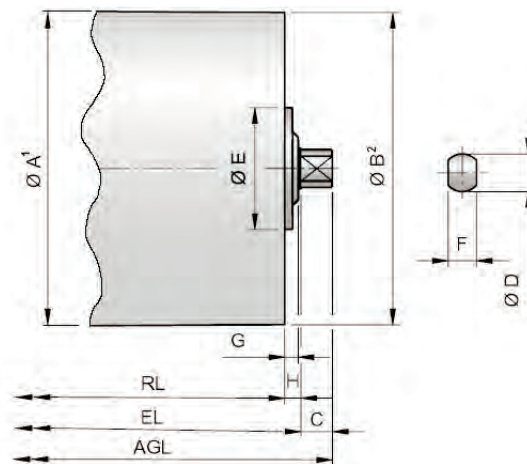


# Motorized Pulley 500L & 500M, Ø 19.72 in. (501 mm)

**Motorized Pulley with terminal box**

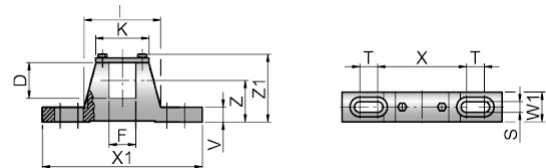


**Idler Pulley<sup>3</sup> UT400M & UT400H**



Model	Motorized Pulley or Idler Pulley										Standard terminal box			
	A in	B in	C in	D in	E in	F in	G in	H in	K in	L in	M in	N in	O in	
500L & 500M	19.72	19.57	1.97	2.36	7.64	1.77	0.91	0.98	1.97	3.94	1.44	-	6.14	
UT400M & UT400H	15.91	15.91	1.97	2.36	6.61	1.77	0.79	0.98	-					

- 1 A dimension is outer diameter of unlagged pulley shell at pulley centerline.
- 2 B dimension is outer diameter of unlagged pulley shell at each end of shell.
- 3 .noisrev denworc-non si nwohs yellup reldl



Motorized Pulleys & Idlers	Material	Bracket Size	Part Number	Dimensions												Weight
				D in	F in	I in	K in	S in	T in	V in	W1 in	X in	X1 in	Z in	Z1 in	
500L, 500M, UT400M, & UT400H	Steel painted Steel Ni plated	KL60	6YA09 6YA0D	2.36	1.77	5.12	3.54	0.71	1.18	0.98	1.97	5.91	10.63	2.76	4.53	10.58



# Motorized Pulley 500L & 500M, Ø 19.72 in. (501 mm) 60

Motor		No. Gear Stages	Model	Nominal belt speed <sup>1</sup> at Full Load 60 Hz fpm	Actual belt speed <sup>1</sup> at Full Load 60 Hz fpm	Belt Pull <sup>2</sup> lbs	Max. Radial Load <sup>3</sup> T1 + T2 lbs	Min. RL in	RL Dimension inches (RL>78.74" available on request) Weight in lbs <sup>5</sup>										Type of Bracket
Power HP	No. of Poles								23.62	25.59	27.56	29.53	31.50	33.46	35.43	37.40	39.37	longer than 39.37	
3	8	3	500M	48 60 76	55 67 80	1696 1380 1154	9487	25.59	-	593	610	628	645	663	680	697	715	See Foot-note <sup>4</sup> KL60 6YA09	
		2	500L	96 120 150 192 240	102 126 151 190 247	905 736 616 487 375	7868	23.62	498	516	533	550	568	585	603	620	638		
5.5	8	3	500M	76 96 120	80 101 126	2098 1663 1338	9487	25.59	-	613	630	647	665	682	699	717	735		
		2	500L	150 192 240 300 384 480	151 190 247 311 383 487	1119 887 681 540 439 346	7868	23.62	518	535	553	570	588	605	623	640	657		
7.5	4	3	500M	120 150 192	134 160 202	1725 1442 1144	9487	25.59	-	593	610	628	645	663	680	697	715		
		2	500L	240 300 384 480 600 768	251 301 379 494 622 766	920 770 610 468 372 302	7868	23.62	498	516	533	550	568	585	603	620	638		
10	6	3	500M	150 192 240	175 221 272	1795 1425 1157	9487	29.53	-	-	-	641	658	676	693	711	728		
	4	2	500L	300 384 480 600 768	301 379 494 622 766	1049 831 639 507 411	7868	23.62	511	529	546	564	581	599	616	633	651		
15	4	3	500M	240 300 384	251 301 379	1840 1538 1220	9487	29.53	-	-	-	667	685	702	720	737	755		
		2	500L	480 600 768	494 622 766	936 743 604	7868	27.56	-	-	573*	590	608	625	642	660	677		
20	2	3	500M	300 384 480	321 405 527	1967 1560 1196	9487	29.53	-	-	-	667	685	702	720	737	755		
		2	500L	600 768	601 759	1049 831	7868	27.56	-	-	573*	590	608	625	642	660	677		

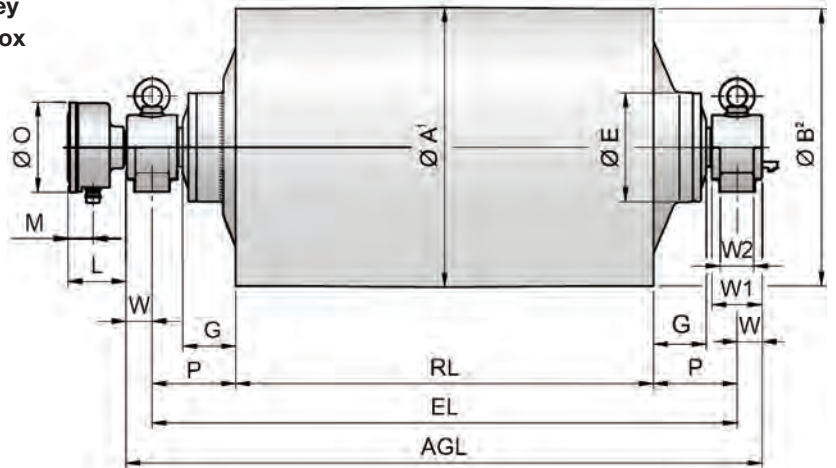
Idler Pulley	UT400M	9,100	23.62	271	286	304	319	334	345	360	376	391	See Foot-note <sup>4</sup>	KL60 6YA09
	UT400H	11,250	25.59	-	295	315	330	345	356	371	387	402		

- 1 Use "nominal belt speed" to specify pulley. "Actual belt speed" is presented (for pulley lagged with 3/8" thick rubber) to assist with process design calculations. See Technical Precautions page 77. Note that "actual belt speed" decreases when lagging is not used due to decreased pulley diameter.
- 2 Belt pull value allows for gearbox loss.
- 3 Pulley must not be subjected to radial load exceeding "Maximum radial load" defined above. See "Belt Tension" section in Technical Precautions, page 78.
- 4 Additional Motorized Pulley weight, specified per Roller Length: 39.37" ≤ RL ≤ 78.749" Wt = 8.7 lbs/in. Pulley weight: 39.37" ≤ RL ≤ 78.74" Wt = 7.6 lbs/in.
- 5 All weights shown above are for pulleys "fully lagged" with 3/8" thick rubber. To calculate unlagged pulley weight subtract 0.9 lbs/in of Roller Length from above.
- \* Special "Short Roller Length" Option

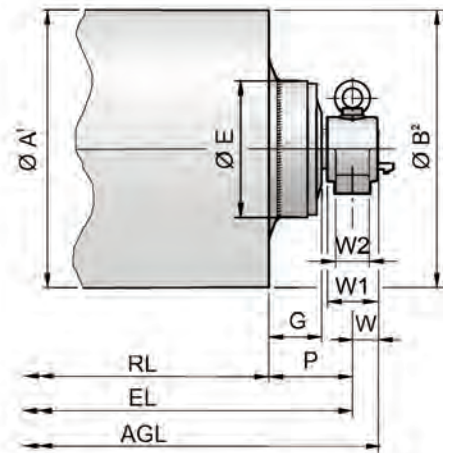


# Motorized Pulley 500H, Ø 19.72 in. (501 mm)

**Motorized Pulley with terminal box**



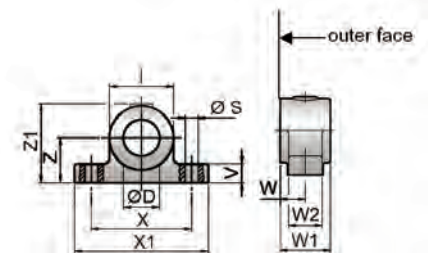
**Idler Pulley<sup>3</sup> UT500H**



**Motorized Pulley or Idler Pulley**

Model	A in	B in	C in	D <sup>4</sup> in	E in	G in	L in	M in	O in	P in
500H	19.72	19.57	-	2.56	7.56	3.74	3.94	1.44	6.14	5.91
UT500H	19.72	19.72	-	2.56	9.25	3.74	-	-	-	5.91

- 1 A dimension is outer diameter of unlagged pulley shell at pulley centerline.
- 2 B dimension is outer diameter of unlagged pulley shell at each end of shell.
- 3 Idler pulley shown is non-crowned version.
- 4 D dimension is shaft diameter.



**Mounting bracket\***

Motorized Pulleys & Idler Pulleys Model	Material	Bracket Size*	Dimensions											Weight lbs
			D in	I in	S in	V in	W in	W1 in	W2 in	X in	X1 in	Z in	Z1 in	
500H & UT500H	Cast iron	AL65 / ALO65	2.56	4.53	0.91	1.34	1.85	3.54	2.36	7.09	9.45	3.15	5.55	17.64

\* Type AL bracket has gib key. Type ALO has no gib key. See position 69 on page 56.



# Motorized Pulley 500H, Ø 19.72 in. (501 mm) 60 Hz

(Design based on former TM500/TM501)

Motor		No. Gear Stages	Model	Nominal belt speed <sup>1</sup> at Full Load 60 Hz fpm	Actual belt speed <sup>1</sup> at Full Load 60 Hz fpm	Belt Pull <sup>2</sup> lbs	Max. Radial Load <sup>3</sup> T1 + T2 lbs	Min. RL in	RL Dimension inches (RL>78.74" available on request)											Type of Bracket		
Power HP	No. of Poles								Weight in lbs <sup>5</sup>													
									29.53	31.50	33.46	35.43	37.40	39.37	41.34	43.31	45.28	longer than 45.28				
7.5	8	2	500H	120* 150* 192	126 161 211	1839 1442 1097	10,340	29.53													See Foot-note <sup>4</sup> AL65& ALO65	
	6	2	500H	240 300 384 480 600	281 313 390 476 626	823 739 592 486 369			775	797	819	839	861	878	897	916	936					
10	8	2	500H	120* 150 192	126 161 211	2509 1966 1496																
	6	2	500H	240 300 384 480 600	281 313 390 476 626	1122 1007 807 662 504			797	819	841	861	883	898	917	936	956					
15	6	2	500H	192 240 300 384 480 600	214 281 313 390 476 626	2163 1645 1477 1185 970 739																
				240* 300 384 480 600 760	251 321 421 469 585 715	2509 1966 1496 1343 1077 882			819	841	863	883	905	920	939	958	978					
20	4	2	500H	240* 300 384 480 600 760	251 321 421 469 585 715	2509 1966 1496 1343 1077 882																
				300 384 480 600 760	321 421 469 585 715	2425 1845 1656 1328 1089			844	863	881	900	918	940	959	978	999					
25	4	2	500H	300 384 480 600 760	321 421 469 585 715	2425 1845 1656 1328 1089																
				300 384	321 421	2877 2210			33.46	-	-											
30	4	2	500H	300 384	321 421	2877 2210																
	2			480* 600* 760	502 642 843	1839 1442 1097			29.53	866	885	903	922	940	959	978	997	1017				
40	4	2	500H	384 480 600 760	421 469 585 715	2925 2626 2105 1722																
									33.46	-	-	1090	1109	1127	1146	1165	1184	1204				

Standard RL →

Idler Pulley				Model UT500H	10,340	23.62	495	515	537	556	578	600	619	638	658	See Foot-note <sup>4</sup>	AL65 & ALO65
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1 Use "nominal belt speed" to specify pulley. "Actual belt speed" is presented (for pulley lagged with 3/8" thick material) to assist with process design calculations. See Technical Precautions page 79. Note that "actual belt speed" decreases when lagging is not used due to decreased pulley diameter.

2 Belt pull value allows for gearbox loss.

3 Pulley must not be subjected to radial load exceeding "Maximum radial load" defined above. See "Belt Tension" section in Technical Precautions, page 80.

4 Additional Motorized Pulley and Idler weight, specified per Roller Length: 45.28" ≤ RL ≤ 78.74" Wt = 9.8 lbs/in.

5 All weights shown above include mounting brackets and are for pulleys "fully lagged" with 3/8" thick material (i.e. rubber for 7.5 - 30 HP and solid ceramic for 40 HP). For "partially lagged" pulleys add 6% to 10% to the weights shown above. See page 47, 82, & 83 for "partial lagging." To calculate unlagged pulley weight subtract 0.9 lbs/in of Roller Length from above.

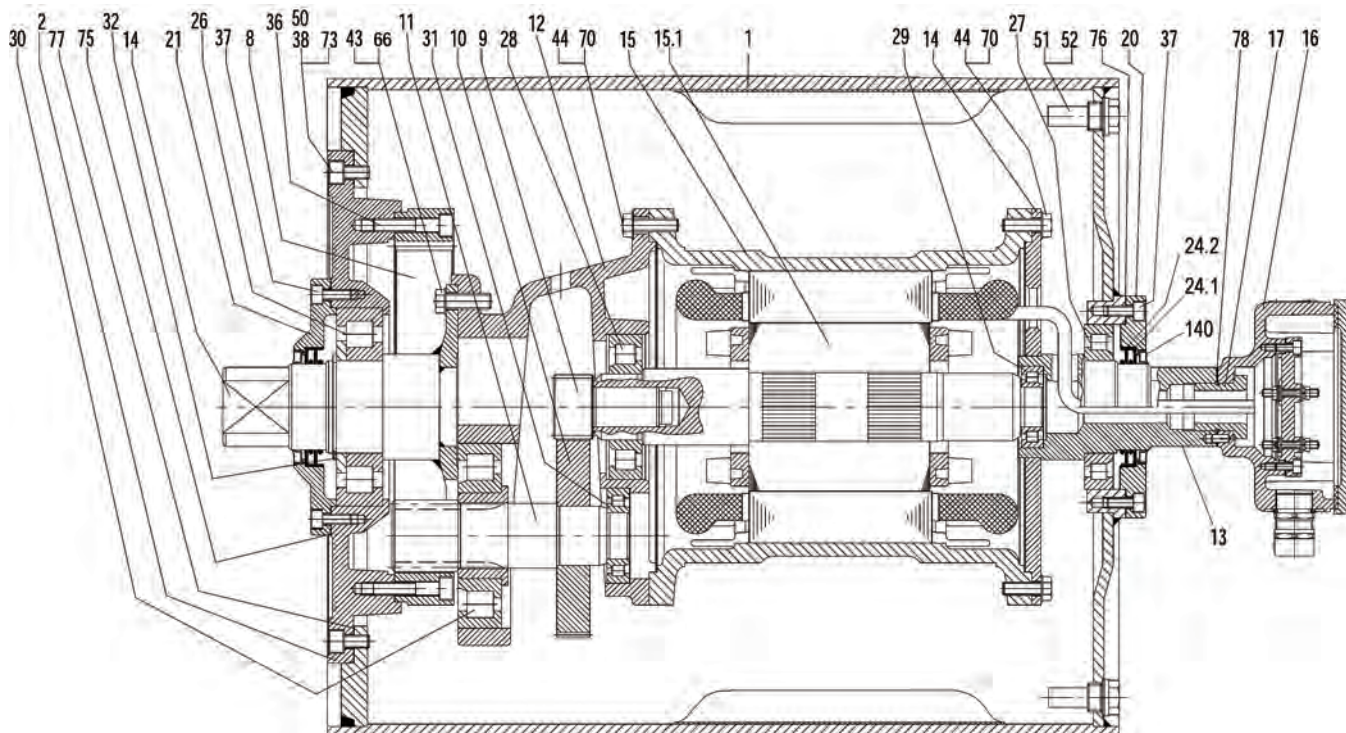
\* External brake shaft option is not available in these belt speeds.



# Motorized Pulley 500L, Ø 19.72 in. (501 mm)

## Spare parts list and sectional drawings

Pos.	Description	Pos.	Description	Pos.	Description
1	Shell	27	Bearing	90	Backstop
2	End housing with geared rim	28	Bearing	91	Electromagnetic brake
8	Geared rim	29	Bearing	93	Retaining ring
9	Rotor pinion	30	Bearing	94	Hexagon head screw
10	Input wheel	31	Bearing	99	Waved spring washer
11	Output pinion	32	Retaining ring	101	Key
12	Gear box – cast aluminum	36	Hexagon socket screw	104	Distance washer
13	Front shaft	37	Hexagon socket screw	120	Labyrinth cover
13.1	Front shaft (ss option)	38	Hexagon socket screw	121	Fixing bolt
14	Rear shaft	43	Hexagon screw	122	O-ring
14.1	Rear shaft (ss option)	44	Hexagon screw	123	Grease nipple
15	Stator complete	45	Hexagon screw	140	Deflection seal (future)
15.1	Rotor	50	Waved spring washer	180	Intermediate pinion shaft
16	Terminal box complete	51	Gasket	181	Intermediate pinion
17	Nipple	52	Magnetic oil plug	182	Distance washer
20	Cover – front side	53	Distance washer	183	Distance washer
20.1	Cover with labyrinth groove	66	Waved spring washer	184	Roller bearing
21	Cover – rear side	67	Waved spring washer	185	Roller bearing
21.1	Cover with labyrinth groove	70	Waved spring washer	186	Key
23	Rear flange	73	Set screw	187	Key
24.1	Shaft oil seal outer	75	Gasket	188	Retaining ring
24.2	Shaft oil seal inner	76	Gasket	190	Retaining ring
24.3	Shaft oil seal outer (lab option)	77	Gasket	191	Retaining ring
24.4	Shaft oil seal inner (lab option)	78	Gasket	194	Set screw
26	Bearing	85	Intermediate flange	196	Key
				197	Retaining ring

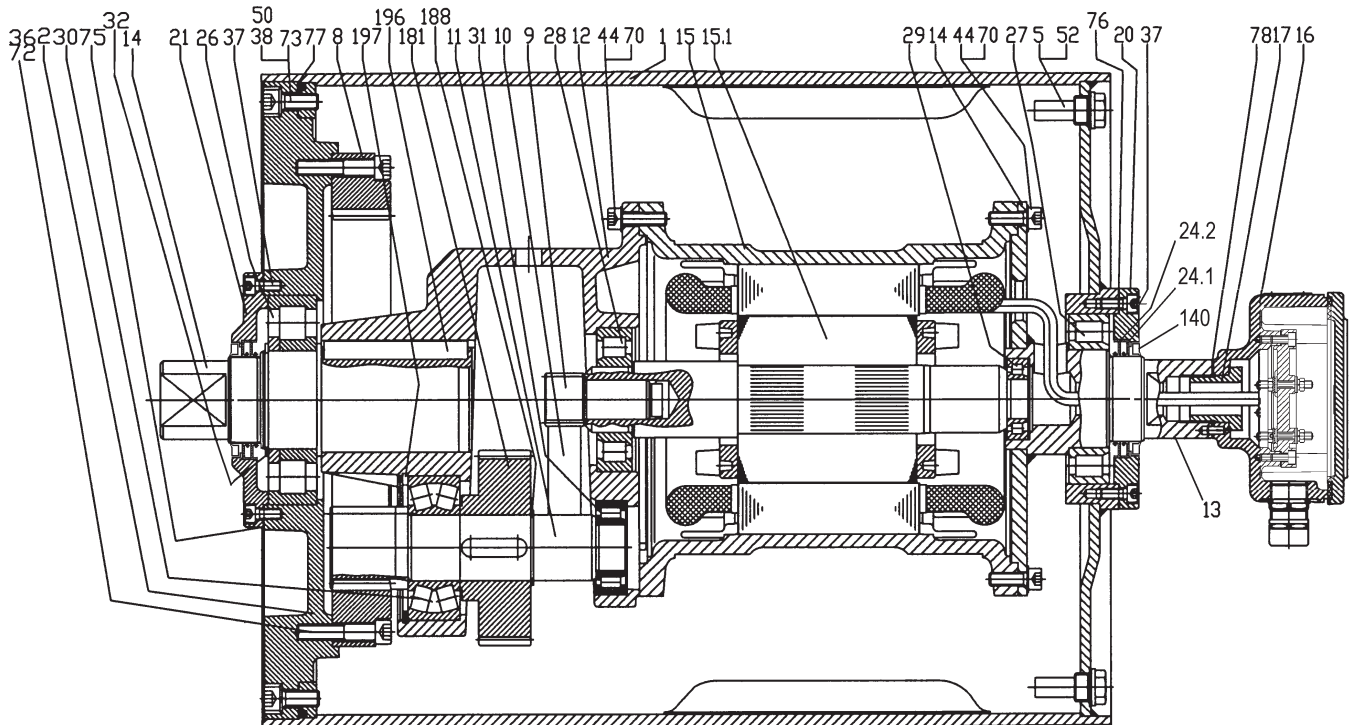




# Motorized Pulley 500M, Ø 19.72 in. (501 mm)

## Spare parts list and sectional drawings

Pos.	Description	Pos.	Description	Pos.	Description
1	Shell	26	Bearing	90	Backstop
2	End housing with geared rim	27	Bearing	91	Electromagnetic brake
3	End housing	28	Bearing	93	Retaining ring
8	Geared rim	29	Bearing	94	Hexagon head screw
9	Rotor pinion	30	Bearing	99	Waved spring washer
10	Input wheel	31	Bearing	100	Key
11	Output pinion	32	Retaining ring	104	Distance washer
12	Gear box – cast iron	36	Hexagon socket screw	120	Labyrinth cover
13	Front shaft	37	Hexagon socket screw	121	Fixing bolt
13.1	Front shaft (ss option)	38	Hexagon socket screw	122	O-ring
14	Rear shaft	43	Hexagon head screw	123	Grease nipple
14.1	Rear shaft (ss option)	44	Hexagon head screw	140	Deflection seal (future)
15	Stator complete	45	Hexagon head screw	180	Intermediate pinion shaft
15.1	Rotor	50	Waved spring washer	181	Intermediate pinion
16	Terminal box complete	51	Gasket	182	Distance washer
17	Nipple	52	Magnetic oil plug	183	Distance washer
20	Cover – front side	53	Distance washer	184	Roller bearing
20.1	Cover with labyrinth groove	66	Waved spring washer	185	Roller bearing
21	Cover – rear side	70	Waved spring washer	186	Key
21.1	Cover with labyrinth groove	73	Set screw	187	Key
23	Rear flange	75	Gasket	188	Retaining ring
24.1	Shaft oil seal outer	76	Gasket	191	Retaining ring
24.2	Shaft oil seal inner	77	Gasket	194	Set screw
24.3	Shaft oil seal outer (lab option)	78	Gasket	196	Key
24.4	Shaft oil seal inner (lab option)	85	Intermediate flange	197	Retaining ring



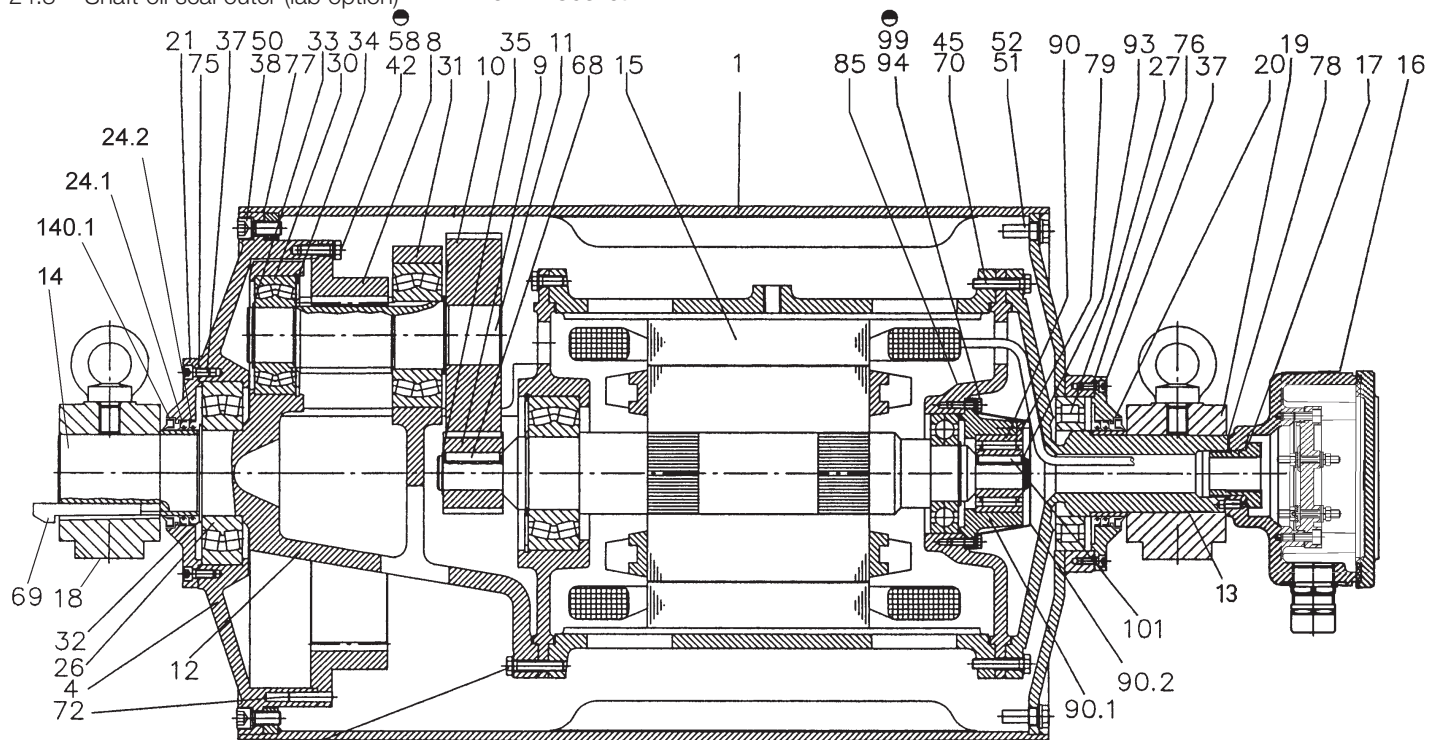




# Motorized Pulley 500H, Ø 19.72 in. (501 mm)

## Spare parts list and sectional drawings

Pos.	Description	Pos.	Description	Pos.	Description
1	Shell	24.4	Shaft oil seal inner (lab option)	77	Gasket
4	End housing with geared rim	26	Bearing	78	Gasket
8	Geared rim	27	Bearing	79	Holding plate
9	Rotor pinion	30	Bearing	85	Motor flange for backstop/brake
10	Input wheel	31	Bearing	90	Backstop
11	Output pinion	32	Retaining ring	90.1	Backstop housing
12	Gear box including rear shaft	33	Retaining ring	90.2	Backstop cover
13	Front shaft	34	Retaining ring	93	Backstop retaining ring
14	Rear shaft	35	Retaining ring	94	Backstop hex head screw
15	Stator complete	37	Hexagon socket screw	99	Backstop spring washer
15.1	Rotor	38	Hexagon socket screw	101	Backstop key
16	Terminal box complete	42	Hexagon head screw	123	Grease nipple
17	Nipple	44	Hexagon head screw	130	Brake shaft
18	Mounting brackets rear side	45	Hexagon head screw	131	Mounting bracket bearing cover
18.1	Mounting bracket w/lab rear side	50	Washer	132	Roller bearing
19	Mounting bracket front side	51	Gasket	133	Brake shaft seal
19.1	Mounting brackets w/lab front side	52	Magnetic oil plug	134	Brake shaft seal
20	Cover – front side	58	Spring washer	135	Retaining ring
20.1	Cover with labyrinth groove	68	Key	136	Bolts - bearing cover
21	Cover – rear side	69	Gib key	137	Spring lock washer
22.1	Cover with labyrinth groove	70	Waved spring washer	138	Key
23	Rear flange	72	Grooved pin	139	Retaining ring
24.1	Shaft oil seal outer	73	Set screw	140	Key
24.2	Shaft oil seal inner	75	Gasket	140.1	Deflection seal (future)
24.3	Shaft oil seal outer (lab option)	76	Gasket		



● 44, 70

● bolt fitted with glue  
Omnifit or Loctite

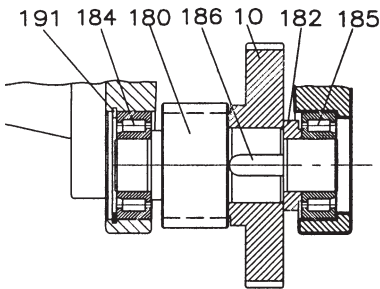
Cross sectional drawing shows optional backstop.



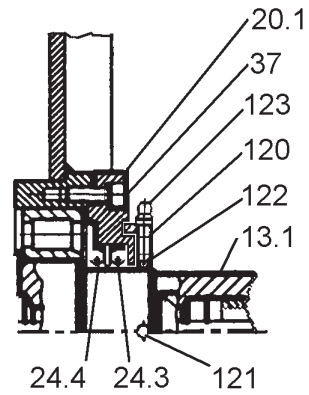
# Motorized Pulley 500L & 500M, Ø 19.72 in. (501 mm)

Sectional drawings (See parts list on pages 54 & 55.)

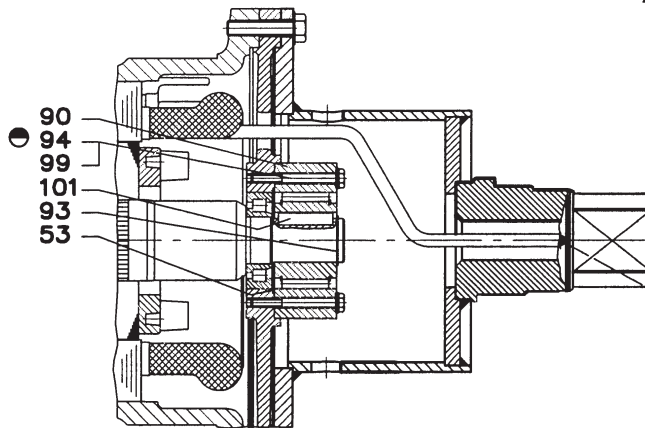
Intermediate Shaft (valid for 500M)



Labyrinth Option

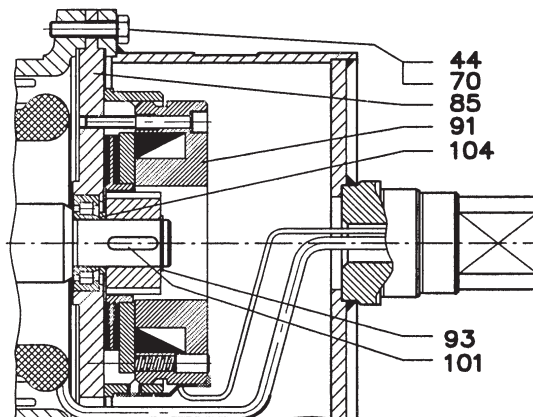


Backstop Option



● fitted with glue

Electromagnetic Brake Option

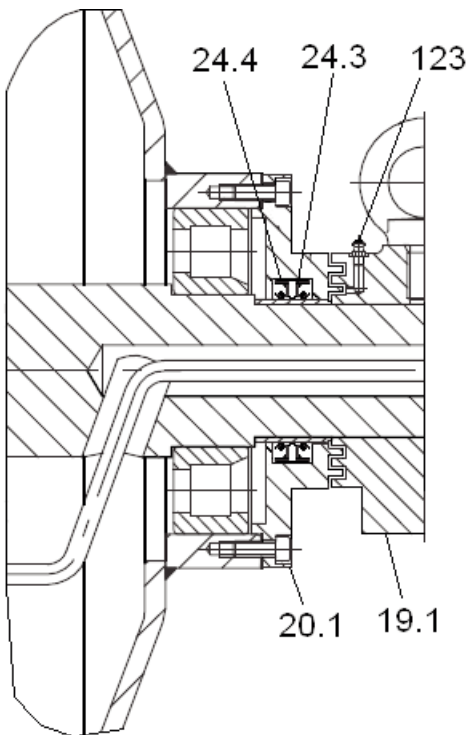




# Motorized Pulley 500H, Ø 19.72 in. (501 mm)

Sectional drawings (See parts list on page 56.)

Labyrinth Seal Option



External Brake Shaft Option

