



Plate Mount Mixers

OWNERS MANUAL

Warranty

Our products are guaranteed against defective materials and workmanship, we will repair or replace such items as may prove defective at our option. Warranty period is one year on items manufactured by INDCO. On items not manufactured by INDCO, the manufactures warranty applies. All component parts of our products are covered by this warranty, except for normal wear items such as belts or impellers. We cannot be responsible for damage or abuse to equipment caused by improper installation or operation. Warranties can also be voided by unauthorized disassembly of equipment. For warranty repairs, equipment is returned to INDCO at the customer's expense; we will repair and return to customer at our expense. Under no circumstances will we allow labor charges or other expense to repair defective merchandise. This warranty is exclusive and is in lieu of all other warranties, whether express or implied. INDCO shall not be liable for any other damages, whether consequential, indirect, or incidental, arising from the sale or use of its products.



TMD SERIES MIXERS

Contents:	Page:
Model - Drawing Data	2
Safety, General & Receiving.	3
Installation	4
Operation	5
Maintenance	5
Parts List	6



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Plate Mount Mixer

Model: _____

Date: _____

Serial No.: _____

Order No.: _____

100 - Motor:

300 - Shaft:

Part No.: _____

Diameter _____

HP: _____ RPM: _____

• Total length _____

volts: _____ cycles: _____ phase: _____

• Length exposed _____

frame: _____ enclosure: _____

200 - Gear Box:

400 - Impellers:

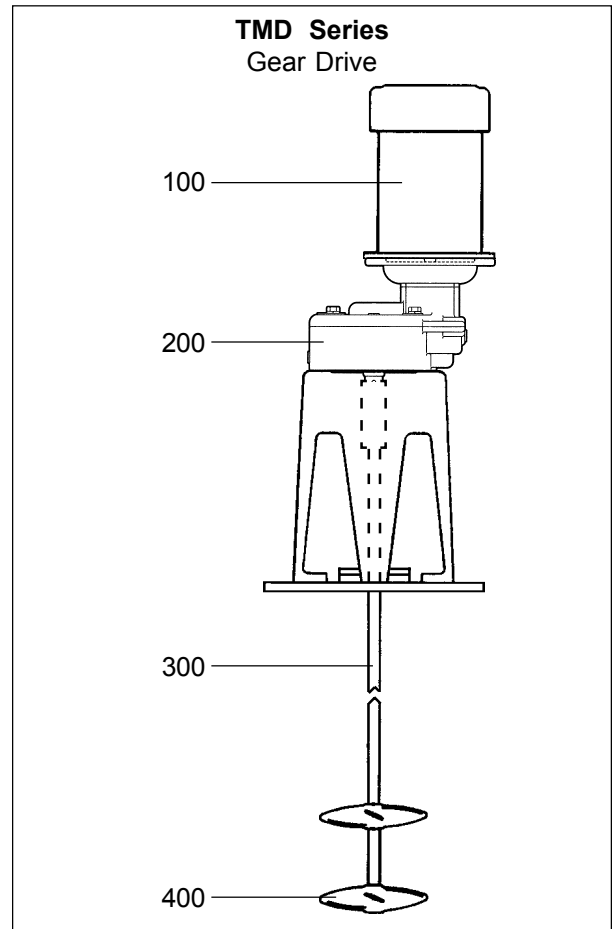
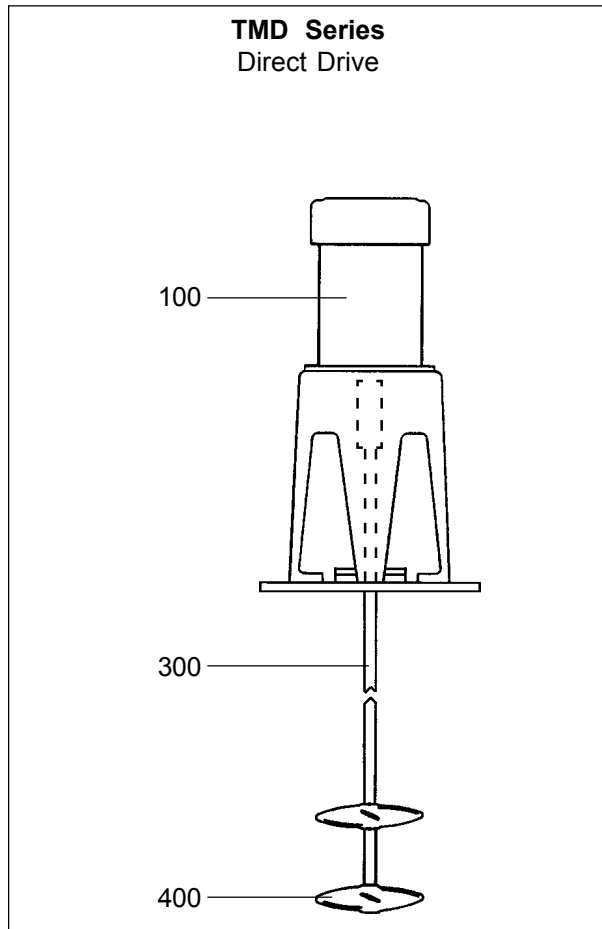
Part No.: _____

Qty. _____

RPM output _____

Diameter _____

Type _____



Safety

Please follow the below safety precautions. If there are any questions, please call INDCO at 800-942-4383.

Please read this complete manual before trying to operate your mixer. Failure to follow these instructions could result in serious bodily injury or death.

- Do not touch moving parts while mixer is operating. Do not wear loose-fitting clothes or jewelry around an operating mixer. Keep all hands, feet, clothes, neckties, necklaces and other objects clear of moving parts.
- Never move the unit without a suitable lifting device.
- Have a qualified individual bring power to your unit.
- Always ground the unit. Never use an extension cord.
- Never run the unit in open air.
- Never adjust the speed without the unit running.
- Always lockout the power when working on the unit.

Electric Motor Safety:

Motors should be installed, protected and fused in accordance with latest issue of National Electrical Code, NEMA Standard Publication No. MG 2 and local codes.

Not all rotating parts are guarded. Keep hands and clothing away from moving parts.

Trained, qualified personnel should make electrical repairs and non-standard connections.

If environment has hazardous combustible fumes present, use only explosion-proof electric motors.

Air Motor Safety:

The air motor is designed to be driven by compressed air and under no circumstances be driven with any other gases. Fluids, particles, solids or any substance mixed with air, particularly combustible substances likely to cause explosions, must not drive air motor.

- Do not drive with flammable or explosive gases.
- Air motor is designed for air only. Do not allow corrosive gases or particulate material to enter motor. Water vapor, oil-based contaminants, or other liquids must be filtered out.
- Do not use a hammer or force coupling or drive pulley onto shaft when installing drive onto air motor. This causes end thrust that could damage air motor.
- Ambient temperature should not exceed 250°F.
- Beware of any exposed and/or movable parts. Proper guards should be in place to prevent personal and/or property damage.

General

- Single-phase TEFC models include cord, plug and switch.
- Three-phase models must be wired in the field by user.
- Ex-Proof models must be wired in the field by user.
- DC-Variable-Speed electric models have a controller mounted to the mixer and they are pre-wired.
- Air motors include exhaust muffler & speed control valve.

TMD - Plate Mount Series

These top entry tank mixers can be channel or beam mounted on open tanks, or mounted on closed tanks which are operated under atmospheric conditions. (non-sealed) Mounting is on a rugged flat steel plate supplied as standard equipment with predrilled holes. Carrier bearing offers maximum shaft support, reducing motor and gearbox wear and minimizing shaft wobble.

Receiving

Before removing any packing, visually inspect the exterior of the shipment for any sign of damage. Should there be any damage, bring it to the attention of the delivering UPS or truck line and note the same on the receiving ticket. Should there be damage you must place a claim with the truck line. *They are the only ones who will pay for the damage done and you are the only one who can place that claim.*

Installation

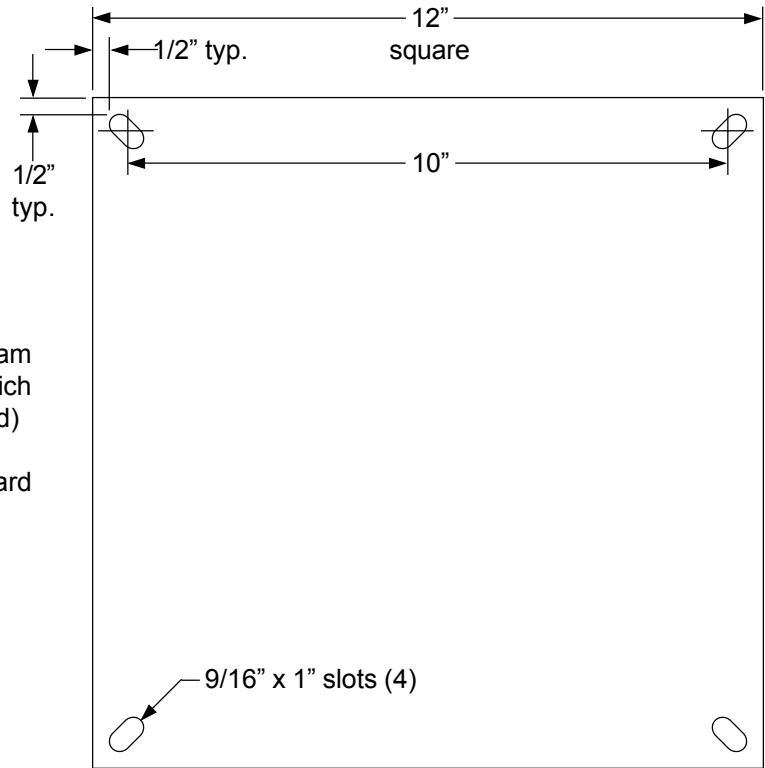
Your new mixer is supplied assembled complete except for the impeller-shaft and impeller(s) which have to be fitted to the machine before it's operational. See Shaft & Coupler installation section on next page for details.

Mounting Plate

Mounting plate dimensional data shown at right.

These top entry plate mount mixers can be channel or beam mounted on open tanks, or mounted on closed tanks which are operated under atmospheric conditions. (non-sealed)

Plate is rugged flat carbon steel and is supplied as standard equipment with predrilled holes per drawing.



carbon steel plate - 1/4" thick

Gear Drive (set-up)

Mixers with gear reducer drives require the installation of the Vent-Plug before operation. This allows heat to vent to atmosphere during operation. After mixer has been mounted in its final position, install Filler-Vent Plug per the following instructions.

Models: TMD-16, 17, 18, 19, 23, 24, 26, 27, 28, 29.

gear box p/n HDW-GB-56C (RPQ1)

- The gear box is filled with oil.
- The brass plug supplied loose is a Filler-Vent Plug. After mounting the mixer, install the Filler-Vent Plug in the highest filler point as shown.

Models: TMD-20, 21, 30.

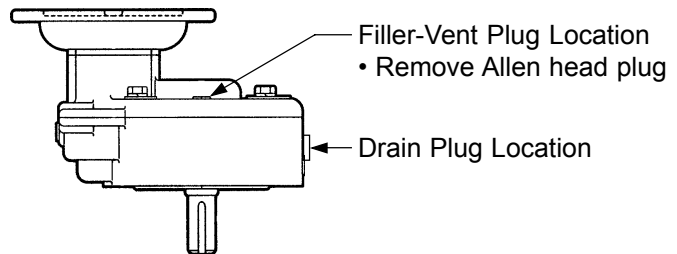
gear box p/n HDW-GB-56C-LG (RPQ2)

- The gear box is filled with oil.
- The brass plug supplied loose is a Filler-Vent Plug. After mounting the mixer, install the Filler-Vent Plug in the highest filler point as shown.

Models: TMD-22, 25, 31, 32.

gear box p/n HDW-GB-140TC-LG (RPQ2)

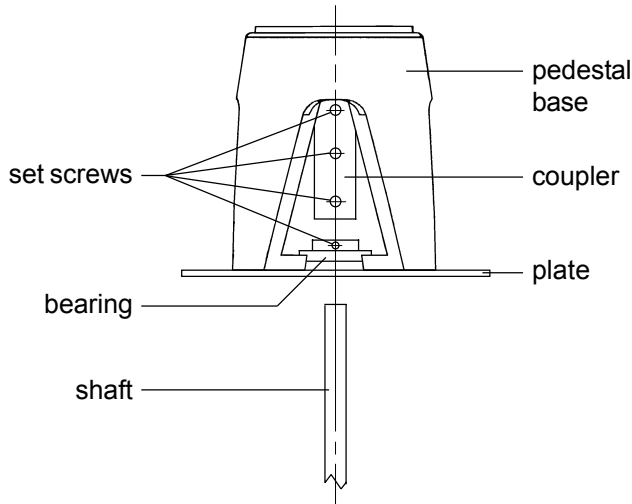
- The gear box is filled with oil.
- The brass plug supplied loose is a Filler-Vent Plug. After mounting the mixer, install the Filler-Vent Plug in the highest filler point as shown.



Installation (continued)

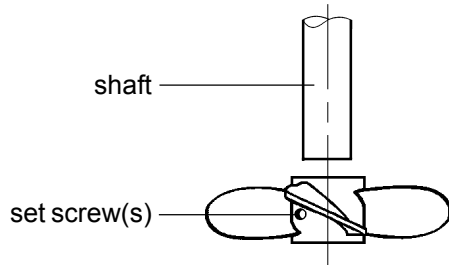
Shaft & Coupler

To install impeller shaft, back off set-screws in the coupler and bearing as far as possible without removing them. Install the shaft by sliding it through the bearing and into the coupler. Approximately 5.5" of the shaft will slide into the coupler. Tighten the set-screws to secure the shaft into the coupler. Next, tighten the set-screws on the bearing retaining ring to secure shaft to the bearing.



Impellers

The standard impellers are 3-bladed marine style. To install the propeller, back off the set screw(s) as far as possible without removing them. Insert mixing shaft into the bore and tighten the set screw(s) firmly to secure the shaft to the propeller.



Impeller Placement

- Mixers with ONE impeller, mount it 1 to 2 impeller diameters distance off the bottom of mixing container.
- Mixers with TWO or more impellers, mount the lowest impeller 1 to 2 impeller diameters distance off the bottom of mixing container. Mount the other impellers 1 to 2 impeller diameters apart. The uppermost impeller should be positioned approximately 1 impeller diameter under the surface of the liquid.

The above guide-lines are "rules of thumb" and may not be the best for your situation. Experimenting with impeller placement may provide your best results.

Operation

Electric Power: Once the electric motor has been wired, check rotation to be sure the mixer shaft is rotating in a clock-wise direction, looking downward into the container.

Air Power: Check to ensure the air valve is in the closed position, then connect air supply. Check rotation to be sure the mixer shaft is rotating in a clock-wise direction, looking downward into the container.

Once the mixer is in the container, it is now safe to operate.

CAUTION:

- ✓ **Never run mixer without a propeller.**
- ✓ **Never run the propeller in open air.**
- ✓ **Never run propeller outside a container.**

Maintenance

Maintaining your mixer is not difficult if you follow these guidelines:

- Keep the mixer clean.
- Check all set-screws and fasteners, tighten as needed.
- Check all wiring on a regular basis and repair as needed.
- Air motor powered units:
 - Keep air supply dry and oil in the lubricator.

Lubrication:

Gear Drive Models:

The gear box contains oil from the factory. The recommended replacement oil is:

- Gearbox models #RPQ1 and RPQ2:
 - Mobil Extra Hecla
 - Shell Oil Omala 680
 - Texaco Meropa 680
 - or equivalent to above
 - For 50°F to 125°F ambient.
 - RPQ1 Oil capacity is 11 ounces.
 - RPQ2 Oil capacity is 14 ounces.

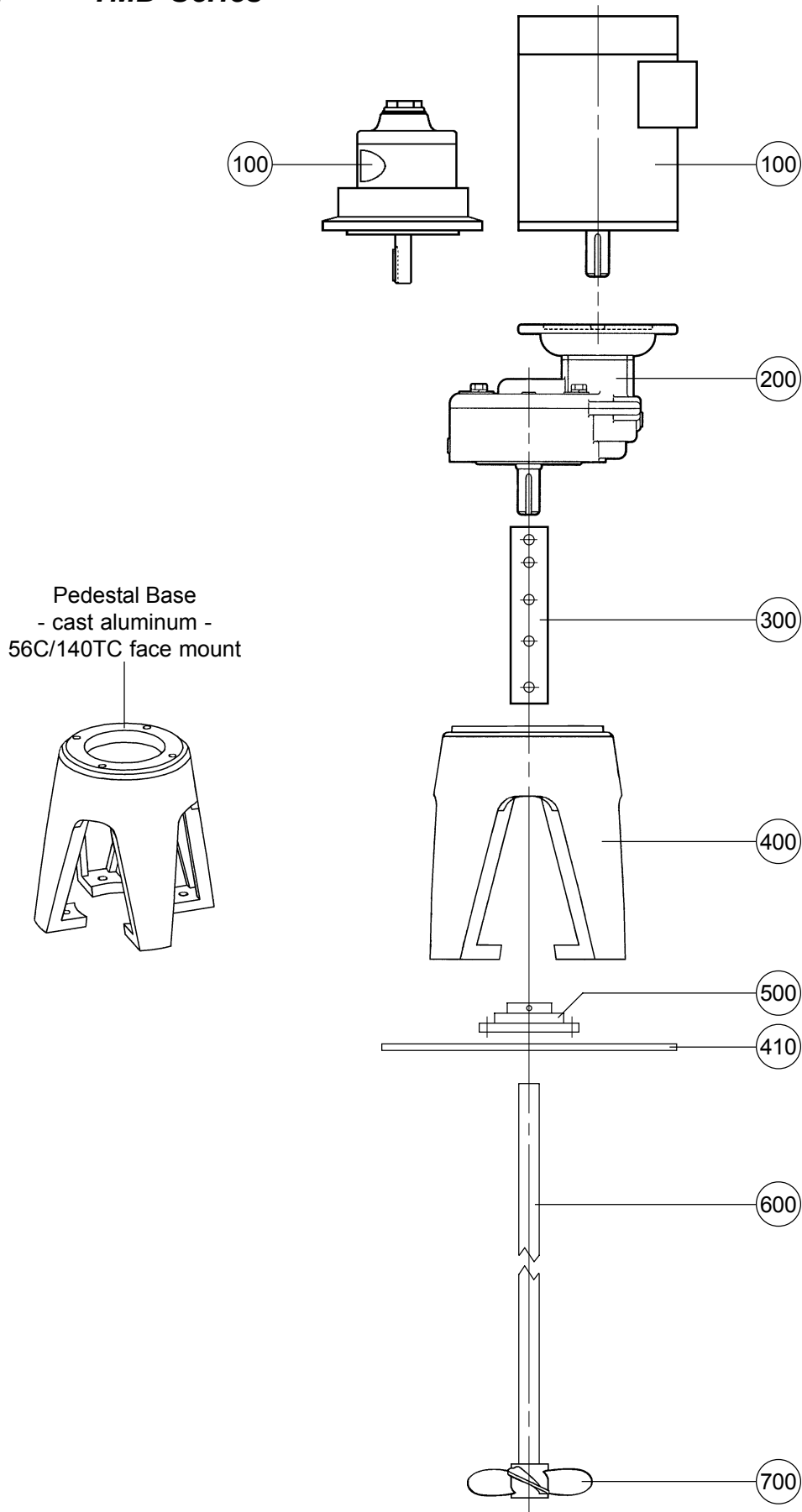
Parts List - Drive Motors

Item 100	Part No.	Description			
Air Motors	3/4 HP	MTR-3/4-56C-AIR N-K510 HDW-1/4-VALVE HDW-2502-SNB N-AL445 N-AC980	56C Mount - 3/4-HP (2AM-NRV-90) bi-rotational Repair Kit* (2AM-NRV-90) Needle valve, brass - 1/4" Pipe nipple, steel - 1/4" X 2" Muffler, plastic Muffler, metal		
		1 1/2 HP	MTR-1.5-56C-AIR N-K206A HDW-1/4-VALVE HDW-25-CNG N-AL445 N-AC980	56C Mount - 1.5-HP (4AM-NRV-50C) bi-rotational Repair Kit* (4AM-NRV-50C) Needle valve, brass - 1/4" Pipe nipple, steel - 1/4" X 7/8" Muffler, plastic Muffler, metal	
			4 HP	MTR-4-56C-AIR N-K208 HDW-1/2-VALVE HDW-50-CNG N-AC990	56C Mount - 4 HP (6AM-NRV-11A) bi-rotational Repair Kit* (6AM-NRV-11A) Needle valve, brass - 1/2" Pipe nipple, steel - 1/2" X 1-1/8" Muffler, metal * Repair Kits include: Vanes, shaft seal, o-rings, DE & NDE bearings, body & end cap gaskets.
				1/4 HP	MTR-1/4-56C-1-EP MTR-1/4-56C-1-TEFC CPG-INLINE-18/3
		1/3 HP	MTR-1/3-56C-1-EP MTR-1/3-56C-1-TEFC CPG-INLINE-18/3 MTR-098004 MTR-DC-CONTROL CPG-18/3 MET-VSO-BRACKET		56C, fixed speed 1/3-HP Explosion-Proof 115/230VAC 1-phase 56C, fixed speed 1/3-HP TEFC 115/230VAC 1-phase Cord 18/3 - 6', plug and in-line ON-OFF switch 56C, variable speed 1/3-HP TEFC 115VAC to 90VDC 1-phase DC motor controller, variable speed - 1/3 thru 2HP Cord 18/3 - 6' with plug Angle brackets, mounts v.s. controller to motor (2 req'd)
			1/2 HP		MTR-1/2-56C-1-EP MTR-1/2-56C-1-TEFC CPG-INLINE-18/3 MTR-098000 MTR-DC-CONTROL CPG-18/3 MET-VSO-BRACKET

Parts List - Drive Motors (continued)

Item 100	Part No.	Description				
Electric Motors	3/4 HP	MTR-3/4-56C-1-EP	56C, fixed speed	3/4-HP Explosion-Proof	115/230VAC	1-phase
		MTR-3/4-56C-1-TEFC	56C, fixed speed	3/4-HP TEFC	115/230VAC	1-phase
		CPG-14/3	Cord 14/3 - 5' with plug			
		SWT-TOGGLE	ON - OFF switch			
		SWT-GUARD	Switch guard			
		MTR-108018	56C, variable speed	3/4-HP TEFC	115VAC to 90VDC	1-phase
		MTR-DC-CONTROL	DC motor controller, variable speed - 1/3 thru 2HP			
		CPG-14/3	Cord 14/3 - 5' with plug			
	MET-VSO-BRACKET	Angle brackets, mounts v.s. controller to motor (2 req'd)				
	1 HP	MTR-1-56C-1-EP	56C, fixed speed	1 HP Explosion-Proof	115/230VAC	1-phase
		MTR-1-56C-1-TEFC	56C, fixed speed	1 HP TEFC	115/230VAC	1-phase
		CPG-14/3	Cord 14/3 - 5' with plug			
		SWT-DP-TOGGLE	ON - OFF switch			
		SWT-GUARD	Switch guard			
		MTR-108022	56C, variable speed	1 HP TEFC	115VAC to 90VDC	1-phase
		MTR-DC-CONTROL	DC motor controller, variable speed - 1/3 thru 2HP			
		CPG-14/3	Cord 14/3 - 5' with plug			
	MET-VSO-BRACKET	Angle brackets, mounts v.s. controller to motor (2 req'd)				
	1 1/2 HP	MTR-1.5-56C-1-EP	56C, fixed speed	1.5-HP Explosion-Proof	115/230VAC	1-phase
		MTR-1.5-56C-1-TEFC	56C, fixed speed	1.5-HP TEFC	115/230VAC	1-phase
CPG-14/3		Cord 14/3 - 5' with plug				
SWT-DP-TOGGLE		ON - OFF switch				
SWT-GUARD		Switch guard				
MTR-108092		56C, variable speed	1.5-HP TEFC	230VAC to 180VDC	1-phase	
MTR-DC-CONTROL		DC motor controller, variable speed - 1/3 thru 2HP				
CRD-CORD		Cord 12/3 - 4' no plug				
MET-VSO-BRACKET	Angle brackets, mounts v.s. controller to motor (2 req'd)					
2 HP	MTR-2-56C-3-EP	56C, fixed speed	2 HP Explosion-Proof	230/460VAC	3-phase	
	MTR-2-56C-3-TEFC	56C, fixed speed	2 HP TEFC	230/460VAC	3-phase	
	MTR-128001	145TC, variable speed	2 HP TEFC	230VAC to 180VDC	1-phase	
	MTR-DC-CONTROL	DC motor controller, variable speed - 1/3 thru 2HP				
	CRD-CORD	Cord 12/3 - 4' no plug				
	MET-VSO-BRACKET	Angle brackets, mounts v.s. controller to motor (2 req'd)				
3 HP	MTR-3-140TC-3-EP	140TC, fixed speed	3 HP Explosion-Proof	230/460VAC	3-phase	
	MTR-3-56C-3-TEFC	56C, fixed speed	3 HP TEFC	230/460VAC	3-phase	
	MTR-108502	145TC, variable speed	3 HP TEFC	230VAC to 180VDC	1-phase	
	MTR-DC-CONTROL-3HP	DC motor controller, variable speed - 3HP				
	CRD-CORD	Cord 12/3 - 4' no plug				
	MET-VSO-BRACKET	Angle brackets, mounts v.s. controller to motor (2 req'd)				

Parts List: TMD Series



Parts List: TMD Series

Item	Description	Part No.	Qty.
100.	Motor, air	see 'Parts List - Drive Motors'	1
100.	Motor, electric	see 'Parts List - Drive Motors'	1
200.	Gear Box, 5:1 ratio - 56C in x 56C out (up to 1 HP input) Mixer models: TMD-16, 17, 18, 19, 23, 24, 26, 27, 28, 29 (mfg. model # RPQ1)	HDW-GB-56C	1
200.	Gear Box, 5:1 ratio - 56C in x 56C out (up to 5 HP input) Mixer models: TMD-22, 25, 31, 32 (mfg. model # RPQ2)	HDW-GB-56C-LG	1
200.	Gear Box, 5:1 ratio - 140TC in x 140TC out (up to 5 HP input) Mixer models: TMD-20, 21, 30 (mfg. model # 254)	HDW-GB-140TC-LG	1
210.	Adapter bushing, 56C (5/8" dia.ID) -to- 140TC (7/8" dia.OD) not shown	HDW-SHF-ADAPT-8762	1
300.	Coupling, 5/8" bore x 5/8" bore w/ set-screws	CPL-TMD-6262	1
300.	Coupling, 5/8" bore x 3/4" bore w/ set-screws	CPL-TMD-6275	1
300.	Coupling, 5/8" bore x 1" bore w/ set-screws	CPL-TMD-6210	1
300.	Coupling, 7/8" bore x 1" bore w/ set-screws & 3/16" keyway	CPL-TMD-8710	1
300.	Coupling, 7/8" bore x 1.25" bore w/ set-screws & 3/16" keyway	CPL-TMD-87125	1
400.	Pedestal Base - cast aluminum - 56C/140TC face mount	N-MNT-TMD	1
410.	Base Plate, 12" x 12" - carbon steel (painted)	HDW-12X12-BASE	1
500.	Flange Bearing - 5/8" bore	HDW-5X706	1
500.	Flange Bearing - 3/4" bore	HDW-5X698	1
500.	Flange Bearing - 1" bore	HDW-5X699	1
500.	Flange Bearing - 1.25" bore	HDW-MM5-MAINBRG	1
600.	Shaft, 5/8" dia. x 48" long (39" exposed length)	N-SHF-6248	1
600.	Shaft, 3/4" dia. x 57" long (48" exposed length)	N-SHF-7557	1
600.	Shaft, 3/4" dia. x 69" long (60" exposed length)	N-SHF-7569	1
600.	Shaft, 1" dia. x 57" long (48" exposed length)	N-SHF-1	57
600.	Shaft, 1" dia. x 69" long (60" exposed length)	N-SHF-1	69
600.	Shaft, 1" dia. x 81" long (72" exposed length)	N-SHF-1	81
600.	Shaft, 1.25" dia. x 69" long (60" exposed length)	N-SHF-1-1/4	69
600.	Shaft, 1.25" dia. x 81" long (72" exposed length)	N-SHF-1-1/4	81
700.	Impellers	specify model	1~2
701.	Set screws	specify model	2~4