

XL Right Angle and Parallel Reducers and Gearmotors

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XL Right Angle Reducers and Gearmotors



1/4 to 20 HP
Ratio 5:1 to 336:1

OPTIONS

- Broad range of integral and C-face motors.
- Flanged outputs for direct mounting.
- Bolt-on feet for ceiling or vertical mounting.
- Brake additions.
- XT and E-Z Kleen packages.

DESIGNED FOR YOUR NEEDS

- Three-piece coupling makes NEMA C-face motor removal and assembly easy.
- Cast iron construction is corrosion resistant.
- Optional washdown enclosure.
- Hardened steel seal sleeves protect input and output shafts from seal wear.
- Factory-filled lubricant.
- USDA-approved finish.

The MASTER right angle gear product line is composed of two basic configurations.

1. **THE GEARMOTOR** - uses a partial motor direct connected to the reducer splined input shaft by means of a semi-rigid coupling.
2. **THE C-FACE REDUCER**- utilizes a standard C-face motor, adapter and flexible coupling, connecting to the reducer.

Gearing is designed with a steel worm, integral to the splined input shaft, mating with a bronze worm gear. The second stage gears, where used, are helical, cut from steel, shaved to close tolerances and then case hardened.

The single reduction and combination gearmotor is designed with ball bearings on the splined input shafts and tapered roller bearings on intermediate and final output shaft.



Integral Gearmotor Construction for more compactness

XL Parallel Reducers and Gearmotors

OPTIONS:

- Broad range of integral and C-Face motors
- Flanged outputs for direct mounting
- XT and Easy Clean (Level 1 and Level 2) enclosures for severe applications

Contact your Master representative for information on fully assembled systems including motors, brakes, gearboxes, couplings, sprockets, and pulleys.

DESIGNED FOR YOUR NEEDS:

- Three-piece coupled input makes NEMA C-Face motor removal and assembly easy
- Cast iron construction is corrosion resistant.
- Hardened steel seal sleeves protect input and output shafts from seal wear
- Factory-filled with lubricant for the proper mounting position
- USDA-approved finish and lubricants

The **MASTER XL** parallel product line is composed of two basic input configurations;

1. **THE GEARMOTOR** - uses a partial motor direct connected to the reducer splined input shaft by means of a semi-rigid coupling
2. **THE C-FACE REDUCER** - utilizes a standard C-Face motor adapter and flexible coupling, connecting to the reducer.

MASTER XL parallel reducers are available in single, double and triple reduction ratios from 2.25:1 to 129.7:1. Horsepower capabilities range from fractional to 10 HP. These reducers can be mounted using the integral cast foot or by an optional output flange.



APG

XL Right Angle Gearing

The speed reducer shall be suitable for integral gearmotor construction, readily adaptable for C-face mounting, in either integrally cast feet, output flange, multi-mount, or J-mount configurations, and available with single worm or worm/helical reduction ratios.

MASTER XL

The reducer housing and covers shall be constructed of corrosion resistant, class 30 gray iron with cast internal ribbing for added strength. All gear and bearing housings shall be either doweled or tenoned, and precision machined to assure accurate alignment for all gear sets.

The input worm and worm shaft shall be one solid piece and straddle mounted in bearings for rigid and accurate support. The worm shafts shall be either rolled and case carburized, or, milled, case carburized and ground for accuracy and durability.

COMBOGEAR

For combination right angle reducers, the worm gear set shall be located in the first stage of gearing to insure greater efficiency, higher

torque and more quiet operation. Also, the helical gear of the second stage of the combination reducers shall be crown shaved to provide an ellipsoid tooth form to eliminate tooth end bearing, and assure meshing in the strongest tooth area. These gears shall be case carburized to insure high surface durability and resilient tooth core for greater impact resistance and longer service life.

Reducer bearings shall be the tapered roller and ball type and provide a minimum 25,000 hour average life. Output shaft bearings to be rugged roller bearings for high overhung load capability.

All seals shall be of the spring loaded type made of nitrile compound. The input and output oil seals shall ride on accurately machined and plunge ground sleeves to simplify maintenance and reduce shaft replacement.

MOTO DRIVE

Reducer gears and bearings shall be splash lubricated. Reducers are to be supplied with a high quality petroleum based lubricant.

ULTIMA

PULLEYS

XL Parallel Reducers and Gearmotors

The **MASTER XL** speed reducer shall be suitable for integral gearmotor construction, readily adaptable for C-Face motor mounting, in either integrally cast feet or output flange configurations and available in single, double or triple reduction ratios.

The reducer housing and covers shall be constructed of corrosion resistant, class 30 grey iron with cast internal ribbing for added strength. All gear and bearing housings shall be either dowelled or tenoned and precision machined to assure accurate alignment for all gear sets.

All helical gearing shall be crown shaved to provide an ellipsoid tooth form to eliminate tooth end bearing, and assure meshing in the strongest possible tooth area. These gears shall be case carburized to insure high surface durability and resilient tooth core for greater impact resistance and longer service life.

Reducer bearings shall be the tapered roller and ball type and provide a minimum 25,000 hour average life. Output shaft bearings to be rugged roller bearings for high overhung load capability.

All seals shall be of the spring loaded type made of nitrile compound. The input and output oil seals shall ride on accurately machined and plunge ground sleeves to simplify maintenance and reduce shaft replacement.

Reducer gears and bearings shall be splash lubricated. Reducers are supplied with a high quality petroleum based lubricant.

APG

MASTER XL

COMBOGEAR

MOTO DRIVE

ULTIMA

PULLEYS

XL Right Angle and Gearmotors

Many of the XL reducers and gearmotors have part numbers that can be found on the selection pages. Refer to the part number when ordering. Always specify a mounting position if other than standard, and any modifications or accessories, if required.

If a part number is not listed on the selection table please provide the following information when placing your order.

1. Motor H.P., frame enclosure, phase, voltage and frequency.
2. Reducer or gearmotor size.
3. Output RPM and gear ratio.
4. Mounting position.
5. Any modifications or accessories.

SELECTION FACTORS

To apply a Reducer or Gearmotor properly, the following facts must be considered:

1. The kind of load, reversing, amount of shock, duty cycle, etc.
2. Type of transmission: direct connected, sprocket and chain, pinion and gear, V-belt, or flat belt.
3. The point of application of the load if over-hung.
4. Possibility of stalling.
5. Retarding torque of Unibrake or other brake.
6. Size of flywheel if used or WK² or inertia effect of the load.
7. Surrounding conditions, normal, dusty, outdoor, hazardous vapor or dust, moisture, or acid or alkali fumes, or abnormal ambient temperatures.
8. Mounting: floor, sidewall, ceiling, vertical or inclined.
9. Electrical characteristics of the motor.
10. Complete duty cycle.
11. Horsepower or torque required.
12. Output shaft rpm.

SELECTION EXAMPLE: A C-face right angle reducer is required to drive a continuous belt conveyor. The prime mover is a 1750 rpm electric motor. The conveyor will see a moderate amount of shock loading. The reducer output shaft must drive the conveyor at approximately 20 rpm. Conveyor load averages 1500 in. lbs. (750 lbs. over 2" radius pulley) and the duty cycle is 24 hours per day.

STEP 1: Reducer Service Factor Table on this page indicates a 1.50 service factor. (Under headings: electric motor, 24 hours per day service and medium load classification). Equivalent load = 1500 in. lbs. $\times 1.50 = 2250$ in. lbs. Ratio is calculated by dividing input speed (1750 rpm) by required output speed (in this case, 20 rpm). $1750 \div 20 = 87.5$ ratio.

STEP 2: To determine minimum HP required refer to the Right Angle Gearmotor tables on pages XL-28 to XL-36. In our example, find the

output torque rating for 86:1 ratio that exceeds our requirement of 1,500 in. lbs. Refer to page XL-30. Note the torque value of 1,766 in. lbs. exceeds our requirement. Also make note of the reducer size... CG16A.

STEP 3: Verify selected reducer is rated for 1.5 Service Factor. As we determined earlier, this will require a torque capability of 2,250 in. lbs. Refer to the rating table for size CM16 reducers on page XL-20. The torque rating for a 86:1 ratio at 1750 RPM is 2,522 in. lbs. which exceeds our requirement.

STEP 4: Select motor frame size and refer to appropriate part number.

STEP 5: If the output shaft is connected by other than a flexible coupling, calculate the OVERHUNG LOAD.

OVERHUNG LOAD

To determine overhung load, divide the torque required by the pitch radius of the sprocket, sheave, etc. and multiply by the appropriate factor as follows:

Chain Drive	1.00	V-Belt	1.50
Synchronous Belt Drive	1.10	Flat Belt	2.50
Spur or Helical Gear	1.25		

The calculated overhung load must not exceed the Output Shaft rating.

For loads acting at more than one shaft diameter from bearing housing, use following conversion factors:

Distance in Shaft Diameters From Brg. Hsg.	Multiply OHL Capacity By This Factor
1 D	1.0
2 D	.65
3 D	.45
4 D	.35
5 D	.30

REDUCER SERVICE FACTORS

Prime Mover	Duration of Service Per Day	Driven Machine Load Classification		
		Uniform	Medium Shock	Heavy Shock
Electric Motor	Occasional 1/2 hr.	0.80	0.90	1.00
	Intermittent 2 hrs.	0.90	1.00	1.25
	10 hours	1.00	1.25	1.50
	24 hours	1.25	1.50	1.75
Electric Motor With Frequent Starts and Stops	Occasional 1/2 hr.	0.90	1.00	1.25
	Intermittent 2 hrs.	1.00	1.25	1.50
	10 hours	1.25	1.50	1.75
	24 hours	1.50	1.75	2.00
Multi-cylinder Internal Combustion Engine	Occasional 1/2 hr.	0.90	1.00	1.25
	Intermittent 2 hrs.	1.00	1.25	1.50
	10 hours	1.25	1.50	1.75
	24 hours	1.50	1.75	2.00
Single Cylinder Internal Combustion Engine	Occasional 1/2 hr.	1.00	1.25	1.50
	Intermittent 2 hrs.	1.25	1.50	1.75
	10 hours	1.50	1.75	2.00
	24 hours	1.75	2.00	2.25

XL Reducers and Gearmotors

SERVICE FACTOR CLASSIFICATIONS (1)

Application	Hrs. Per Day		Application	Hrs. Per Day		Application	Hrs. Per Day	
	8-10	24		8-10	24		8-10	24
AGITATORS			CONVEYOR-HEAVY DUTY			GENERATORS-		
Pure Liquids	I		NOT UNIFORMLY FED (Cont'd)			(Not Welding)	I	II
Liquids and Solids	II	II	Screw	II	II	HAMMER MILLS	III	III
Liquids-Variable Density	II	II	Shaker	III	III	LAUNDRY WASHERS		
BLOWERS			CRANES & HOISTS			Reversing	II	II
Centrifugal	I	II	Main Hoists			LAUNDRY TUMBLERS	II	II
Lobe	II	II	Heavy Duty	III	III	LINE SHAFTS		
Vane	I	II	Medium Duty	II	II	Driving Processing		
BREWING & DISTILLING			Reversing	II	II	Equipment	II	II
Bottling Machinery	I	II	Skip Hoists	II	II	Other Line Shafts	I	II
Brew Kettles-Continuous Duty	-	II	Travel Motion	II	II	LUMBER INDUSTRY		
Cookers-Continuous Duty	-	II	Trolley Motion	II	II	Barkers-Hydraulic		
Mash Tubs-Continuous Duty	-	II	CRUSHERS			Mechanical	II	II
Scale Hopper			Ore	III	III	Burner Conveyor	II	II
Frequent Starts	II	II	Stone	III	III	Chain Saw and Drag Saw	III	III
CAN FILLING MACHINES	I	II	DREDGES			Chain Transfer	III	III
CANE KNIVES	II	II	Cable Reels	II	-	Craneway Transfer	III	III
CAR DUMPERS	III	-	Conveyors	II	II	De.Barking Drum	III	III
CAR PULLERS	II	-	Cutter Head Drives	III	III	Edger Feed	II	II
CLARIFIERS	I	II	Jig Drives	III	III	Gang Feed	II	II
CLASSIFIERS	II	II	Maneuvering Winches	II	-	Green Chain	II	II
CLAY WORKING MACHINERY			Pumps	II	II	Line Rolls	III	III
Brick Press	III	III	Screen Drive	III	III	Log Deck	III	III
Briquette Machine	III	III	Stackers	II	II	Log.Haul-Incline	III	III
Clay Working Machinery	II	II	Utility Winches	II	-	Log-Haul-Well Type	III	III
Pug Mill	II	II	ELEVATORS			Log Turning Device	III	III
COMPRESSORS			Bucket-Uniform Load	I	II	Main Log Conveyor	III	III
Centrifugal	I	II	Bucket-Heavy Load	II	II	Off Bearing Rolls	II	II
Lobe	II	II	Bucket-Continuous	I	II	Planer Feed Chains	II	II
* Reciprocating			Centrifugal-Discharge	I	II	Planer Floor Chains	II	II
Multi-Cylinder	II	II	Escalators	I	I	Planer Tilting Hoist	II	II
Single Cylinder	III	III	Freight	II	II	Re-Saw Merry-Go-Round		
CONVEYORS-UNIFORMLY			Gravity Discharge	I	II	Conveyor	II	II
LOAD OR FED			Man Lifts	-	-	Roll Cases	III	III
Apron	I	II	‡ Passenger	‡	‡	Slab Conveyor	III	III
Assembly	I	II	Service Hand Lift	III	-	Small Waste Conveyor		
Belt	I	II	FANS			belt	I	II
Bucket	I	II	Centrifugal	I	II	Small Waste Conveyor		
Chain	I	II	Cooling Towers			chain	II	II
Flight	I	II	Induced Draft	II	II	Sorting Table	II	II
Oven	I	II	‡ Forced Draft	‡	‡	Tipple Hoist Conveyor	II	II
Screw	I	II	Induced Draft	II	II	Tipple Hoist Drive	II	II
CONVEYOR-HEAVY DUTY			* Large (Mine, etc.)	II	II	Transfer Conveyor	II	II
NOT UNIFORMLY FED			Large Industrial	I	II	Transfer Rolls	II	II
Apron	II	II	Light (Small Diameter)	I	II	Tray Drive	II	II
Assembly	II	II	FEEDERS			Trimmer Feed	II	II
Belt	II	II	Apron	II	II	Waste Conveyor	II	II
Bucket	II	II	Belt	II	II	MACHINE TOOLS		
Chain	II	II	Disc	I	II	Bending Roll	-	II
Flight	II	II	Reciprocating	III	III	Notching Press-Belt Driven	I	II
‡ Live Roll	‡	‡	Screw	II	II	Plate Planer	III	III
Oven	II	II	FOOD INDUSTRY			Punch Press-Gear Driven	III	III
Reciprocating	III	III	Beet Slicer	II	II	Tapping Machines	-	III
			Cereal Cooker	I	II	Other Machine Tools	-	III
			Dough Mixer	II	II	Main Drives	II	II
			Meat Grinders	II	II	Auxiliary Drives	I	II

(1) This list is not all-inclusive and each individual gearmotor application should be checked to determine if any unusual operation conditions will be encountered

* Classes listed are minimum and normal conditions are assumed in view of varying load conditions. It is suggested that these applications be carefully reviewed before final selection is made.

‡ Check safety codes and consult Application Engineering.

XL Reducers and Gearmotors

SERVICE FACTOR CLASSIFICATIONS (1)

Application	Hrs. Per Day		Application	Hrs. Per Day		Application	Hrs. Per Day	
	8-10	24		8-10	24		8-10	24
METAL MILLS			PAPER MILLS Cont'd.			SEWAGE DISPOSAL EQUIPMENT Cont'd.		
Draw-Bench-Carriage	III	III	Cutters Platers	-	III	Collectors Circuline or	I	II
Draw-Bench-Main Drive	II	III	Cylinders	-	II	Straightline		
Forming Machines	III	III	*Dryers	-	II	Dewatering Screens	II	II
‡ Pinch Dryer & Scrubber			Felt Stretcher	-	II	Grit Collectors	I	II
Rolls Reversing	‡	‡	Fell Whipper	-	III	Scum Breakers	II	II
*Slitters	II	II	Jordans	-	III	Slow or Rapid Mixers	I	II
Table Conveyors	-	-	Log Haul	-	III	Thickeners	II	II
Non-Reversing	II	II	*Presses	-	II	Vacuum Filters	II	II
*Reversing	-	-	Pulp Machines	-	II			
Wire Drawing &			Reel	-	II	SCREENS		
Flattening Machine	II	II	*Stock Chests	-	II	Air Washing	I	II
Wire Winding Machine	-	II	*Suction Roll	-	II	Rotary-Stone or Gravel	II	II
			Washers and Thickeners	-	II	Traveling Water Intake	I	II
			Winders	-	II			
MILLS ROTARY TYPE			PRINTING PRESSES	I	II	SLAB PUSHERS	II	II
*Ball	II	II				STEERING GEAR	II	II
*Cement Kilns	-	II	PULLERS			STOKERS	I	II
Dryers & Coolers	II	II	Barge Haul	II	III			
Kilns	II	II	PUMPS			TEXTILE INDUSTRY		
*Pebble	II	II	Centrifugal	I	II	Batchers	II	II
Rod	III	III	*Proportioning	II	II	Calenders	II	II
Tumbling Barrels	III	III	Reciprocating			*Card Machines	II	II
MIXERS			Single Acting			Cloth Finishing Machines		
Concrete-Continuous	II	II	3 or more Cylinders	II	II	(washers pads enters		
Concrete-Intermittent	I	II	Double Acting	II	II	dryers calenders. etc.)	II	II
Constant Density	I	II	2 or more Cylinders			Dry Cans	II	II
Variable Density	II	II	Single Acting			Dyeing Machinery	II	II
OIL INDUSTRY			or 2 Cylinders	‡	‡	‡ Knitting Machines		
Chillers	II	II	*Double Acting			(Looms. etc.)	‡	‡
‡ Oil Well Pumping	‡	‡	Single-Cylinder	‡	‡	Looms	II	II
Paraffin Filter Press	II	II	Rotary-Gear Type	I	II	Mangles	II	II
Rotary Kilns	II	II	Lobe Vane	I	II	Nappers	II	II
PAPER MILLS			RUBBER INDUSTRY			Range Drives	‡	‡
Agitators (Mixes)	II	II	Mixer	III	III	Soapers	II	II
Barker Auxiliaries Hydraulic	-	III	*Rubber Calender	II	II	Spinners	II	II
Barker Mechanical	-	III	*Rubber Mill (2 or more)	II	II	Tenter Frames	II	II
Barking Drum	II	II	*Sheeter	II	II	Winders (other than		
*Beater & Pulpers	-	II	Tire Building Machines	II	II	Batchers)	II	II
Bleacher	I	II	Tire & Tube Press Openers	I	I	Yard Preparatory Machines		
*Calenders	-	II	Tubers and Strainers	II	II	(Cards Spinners		
Calenders-Super	-	III				Slashers. etc.)	II	II
Converting Machines Excec.			SEWAGE DISPOSAL EQUIPMENT			WINDLASS	II	II
Cutters, Platers	-	II	Bar Screens		II			
Conveyors	-	II	Chemical Feeders	I	II			
*Coach	-	II						

(1) This list is not all-inclusive and each individual gearmotor application should be checked to determine if any unusual operation conditions will be encountered

* Classes listed are minimum and normal conditions are assumed in view of varying load conditions. It is suggested that these applications be carefully reviewed before final selection is made.

‡ Check safety codes and consult Application Engineering.

XL Parallel Reducers and Gearmotors

Selection tables appear on pages XL-66 - XL-84. These tables list maximum input HP, output speeds, ratios, OHL capabilities and output HP.

Many of the XL reducers and gearmotors have part numbers that can be found on the selection pages. Refer to the part number when ordering. Always specify a mounting position if other than standard, and any modifications or accessories, if required.

If a part number is not listed on the selection table, please provide the following information when placing your order:

- Motor HP, frame enclosure, phase/frequency/voltage
- Reducer or gearmotor size
- AGMA class and application
- Output RPM and/or gear ratio
- Mounting position
- Any required modifications or accessories

Selection Factors:

Correct application of a gearmotor requires consideration of the following factors:

1. Type of load, reversing, amount of shock, duty cycle, etc. Reference Table 2.
2. The point of application of the load, if overhung.
3. Possibility of stalling.
4. Retarding torque of brake
5. Size of flywheel if used or WK2 or inertia effect of the load.
6. Surrounding conditions, normal, dusty, outdoor, hazardous vapor or dust, moisture, or acid or alkali fumes, or abnormal ambient temperatures
7. Mounting: floor, ceiling, vertical or inclined. Reference mounting position charts

8. Electrical characteristics of the motor
9. Complete duty cycle
10. Horsepower or torque required
11. Output shaft RPM
12. Type of transmission: direct connected, sprocket and chain, pinion and gear, V-belt or flat belt.

Table 1: AGMA Gear Classification

Prime Mover	Duration of Service per Day	Driven Machine Loads		
		Uniform	Medium Stock	Heavy Stock
		Class □		
Electric Motor	Occasional 1/2 Hour	I	I	I
	Intermittent 2 Hours	I	I	II
	10 Hours	I	II	III
	24 Hours	II	III	III
Electric Motor with Frequent Starts/Stops	Occasional 1/2 Hour	I	I	II
	Intermittent 2 Hours	I	II	III
	10 Hours	II	III	III
	24 Hours	III	III	III

□ See Table 2 for explanation

Table 2: AGMA Load Classification

Class	Definition	Equiv Service Factor
I	Steady loads not exceeding normal rating of the motor and 8 hours a day service. Moderate shock loads where service is intermittent	1.0
II	Steady loads not exceeding the normal rating of the motor for 24 hours a day. Moderate repetitive shock loads for 8 hours a day.	1.4
III	Moderate repetitive shock loads for 24 hours a day. Heavy repetitive shock loads for 8 hours a day	2.0

XL Right Angle Reducers and Gearmotors

In addition to HP and output speed, MASTER XL Reducers and Gearmotors are identified by a series of numbers and letters as follows:

	140	W	M	21	A	30	K1
MOTOR FRAME _____							
Motor Frames 56 through 215T are preselected in selection tables.							
TYPE OF GEAR TRAIN _____							
W - Single reduction worm Right Angle gearing C - Double reduction worm/helical Right Angle gearing							
TYPE OF GEAR UNIT _____							
G - Gearmotor M - C-face Reducer R - Shaft Input Reducer (CR40A and WR40A only)							
GEAR UNIT SIZE _____							
12 = 1.5" Center Distance Worm Stage 16 = 2" Center Distance Worm Stage 21 = 2.62" Center Distance Worm Stage 28 = 3.5" Center Distance Worm Stage 419 = 4.19" Center Distance Worm-type Only 40 = 5.0" Center Distance Worm Stage							
GEAR UNIT MOUNTING _____							
A - Integrally cast foot B - Multimount F - Footless Flanged Gearcase J - J Mount							
RATIO _____							
MOUNTING POSITION _____							
See XL-90							

XL Parallel Reducers and Gearmotors

	56	S	M	16	F	2	5.06	C1
MOTOR FRAME	_____							
56 140 180 210								
TYPE OF GEAR TRAIN	_____							
S - Single Reduction D - Double Reduction T - Triple Reduction								
TYPE OF GEAR UNIT	_____							
G - Gearmotor M - C-Face Reducer								
GEAR UNIT SIZE	_____							
16 = 2" Center Distance 21 = 2-5/8" Center Distance 28 = 3-1/2" Center Distance								
TYPE OF MOUNTING	_____							
A - Foot Mounted F - Flange Mounted								
AGMA CLASS	_____							
(Only used for Integral Gearmotors) 2 - AGMA Class II 3 - AGMA Class III								
RATIO	_____							
Single Reduction - 2.25:1 to 6.20:1 Double Reduction - 5.06:1 to 31.4:1 Triple Reduction - 20.9:1 to 129.7:1								
MOUNTING POSITION	_____							
SINGLE REDUCTION: C1 C2 C3 C4 C5 C6								
DOUBLE/TRIPLE REDUCTION: A1 A2 A3 A4 A5 A6								

XL Right Angle C-Face Reducers

SINGLE REDUCTION SIZE WM12

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
5	Output RPM	500	350	232	172	56C	M60800
	Output Torque, in. lb.	166	194	222	248		
	Output HP (Max.)	1.32	1.08	.82	.68		
	Input HP (Max.)	1.51	1.23	.95	.80		
	OHL Output Shaft	455	430	415	390		
7.5	Output RPM	333	233	155	115	56C	M60801
	Output Torque, in.lb.	198	221	219	220		
	Output HP (Max.)	1.05	.82	.54	.40		
	Input HP (Max.)	1.23	1.00	.65	.50		
	OHL Output Shaft	430	410	410	415		
10	Output RPM	250	175	116	86	56C	M60802
	Output Torque, in.lb.	202	234	280	324		
	Output HP (Max.)	.80	.65	.52	.44		
	Input HP (Max.)	1.00	.80	.64	.55		
	OHL Output Shaft	430	405	365	320		
12.7	Output RPM	197	138	91	68	56C	M60803
	Output Torque, in.lb.	210	257	296	316		
	Output HP (Max.)	.66	.56	.43	.34		
	Input HP (Max.)	.82	.69	.54	.43		
	OHL Output Shaft	420	385	350	330		
15	Output RPM	167	117	77	57	56C	M60804
	Output Torque, in.lb.	195	227	271	308		
	Output HP (Max.)	.52	.42	.33	.28		
	Input HP (Max.)	.67	.55	.45	.38		
	OHL Output Shaft	430	410	375	340		
18	Output RPM	139	97	64	48	56C	M60805
	Output Torque, in.lb.	211	261	313	338		
	Output HP (Max.)	.46	.40	.32	.26		
	Input HP (Max.)	.61	.53	.42	.34		
	OHL Output Shaft	420	380	335	300		
20	Output RPM	125	87	58	43	56C	M60806
	Output Torque, in.lb.	203	245	301	341		
	Output HP (Max.)	.40	.34	.28	.23		
	Input HP (Max.)	.55	.50	.39	.33		
	OHL Output Shaft	425	400	350	295		
25	Output RPM	100	70	46	34	56C	M60807
	Output Torque, in.lb.	217	266	297	292		
	Output HP (Max.)	.34	.30	.22	.16		
	Input HP (Max.)	.50	.41	.33	.23		
	OHL Output Shaft	410	380	350	350		
30	Output RPM	83	58	39	29	56C	M60808
	Output Torque, in.lb.	190	242	295	338		
	Output HP (Max.)	.25	.22	.18	.15		
	Input HP (Max.)	.40	.36	.33	.26		
	OHL Output Shaft	435	395	350	300		
40	Output RPM	63	44	29	22	56C	M60809
	Output Torque, in.lb.	212	257	315	352		
	Output HP (Max.)	.21	.18	.14	.12		
	Input HP (Max.)	.36	.31	.25	.22		
	OHL Output Shaft	420	385	330	275		
50	Output RPM	50	35	23	17	56C	M60810
	Output Torque, in.lb.	208	257	272	267		
	Output HP (Max.)	.16	.14	.10	.07		
	Input HP (Max.)	.30	.27	.19	.15		
	OHL Output Shaft	420	385	360	380		
60	Output RPM	42	29	19	14	56C	*
	Output Torque, in.lb.	210	204	197	194		
	Output HP (Max.)	.14	.09	.06	.04		
	Input HP (Max.)	.27	.19	.13	.10		
	OHL Output Shaft	420	425	430	430		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

*Made to Order

XL Right Angle C-Face Reducers

SINGLE REDUCTION SIZE WM16

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
5	Output RPM	500	350	232	172	56C	M60812
	Output Torque, in.lb.	303	439	610	613		
	Output HP (Max.)	2.41	2.44	2.25	1.67	140TC	M60848
	Input HP (Max.)	2.65	2.68	2.48	1.87		
	OHL Output Shaft	560	590	630	700		
7.5	Output RPM	333	233	155	115	56C	M60813
	Output Torque, in.lb.	365	469	469	469		
	Output HP (Max.)	1.93	1.74	1.15	.85	140TC	M60849
	Input HP (Max.)	2.18	2.00	1.32	1.00		
	OHL Output Shaft	630	680	790	860		
10	Output RPM	250	175	116	86	56C	M60814
	Output Torque, in.lb.	436	583	695	743		
	Output HP (Max.)	1.73	1.62	1.28	1.02	140TC	M60850
	Input HP (Max.)	2.00	1.88	1.51	1.21		
	OHL Output Shaft	660	710	790	830		
12.7	Output RPM	197	138	91	68	56C	M60815
	Output Torque, in.lb.	449	591	702	809		
	Output HP (Max.)	1.41	1.30	1.02	.87	140TC	M60851
	Input HP (Max.)	1.66	1.54	1.24	1.08		
	OHL Output Shaft	700	760	850	760		
15	Output RPM	167	117	77	57	56C	M60816
	Output Torque, in.lb.	467	618	710	811		
	Output HP (Max.)	1.24	1.14	.87	.74	140TC	M60852
	Input HP (Max.)	1.50	1.38	1.09	.93		
	OHL Output Shaft	750	810	850	760		
18	Output RPM	139	97	64	48	56C	M60817
	Output Torque, in.lb.	482	608	720	812		
	Output HP (Max.)	1.06	.94	.74	.62	140TC	M60853
	Input HP (Max.)	1.32	1.18	.95	.82		
	OHL Output Shaft	800	830	860	740		
20	Output RPM	125	87	58	43	56C	M60818
	Output Torque, in.lb.	508	601	721	824		
	Output HP (Max.)	1.01	.83	.66	.56	140TC	M60854
	Input HP (Max.)	1.26	1.08	.87	.76		
	OHL Output Shaft	820	900	860	740		
25	Output RPM	100	70	46	34	56C	M60819
	Output Torque, in.lb.	532	612	743	759		
	Output HP (Max.)	.84	.68	.55	.41	140TC	M60855
	Input HP (Max.)	1.09	.90	.75	.58		
	OHL Output Shaft	880	930	840	810		
30	Output RPM	83	58	39	29	56C	M60820
	Output Torque, in.lb.	483	559	675	769		
	Output HP (Max.)	.64	.52	.41	.35	140TC	M60856
	Input HP (Max.)	.90	.75	.62	.55		
	OHL Output Shaft	920	960	920	810		
40	Output RPM	63	44	29	22	56C	M60821
	Output Torque, in.lb.	523	596	720	818		
	Output HP (Max.)	.52	.41	.33	.28	140TC	M60857
	Input HP (Max.)	.78	.64	.53	.47		
	OHL Output Shaft	960	950	860	740		
50	Output RPM	50	35	23	17	56C	M60822
	Output Torque, in.lb.	539	620	646	659		
	Output HP (Max.)	.43	.34	.24	.18	140TC	M60858
	Input HP (Max.)	.67	.57	.41	.33		
	OHL Output Shaft	960	940	940	930		
60	Output RPM	42	29	19	14	56C	M60823
	Output Torque, in.lb.	499	496	491	481		
	Output HP (Max.)	.33	.23	.15	.11	140TC	M60859
	Input HP (Max.)	.55	.40	.28	.21		
	OHL Output Shaft	960	960	960	960		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Right Angle C-Face Reducers

SINGLE REDUCTION SIZE WM21

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
5	Output RPM	500	350	232	172	56C	M60824
	Output Torque, in.lb.	583	770	1094	1321	140TC	M60860
	Output HP (Max.)	4.63	4.28	4.03	3.61	180TC	M60884
	Input HP (Max.)	5.00	4.62	4.37	3.95		
	OHL Output Shaft	790	850	900	960		
7.5	Output RPM	333	233	155	115	56C	M60825
	Output Torque, in.lb.	626	894	1201	1198	140TC	M60861
	Output HP (Max.)	3.31	3.31	2.95	2.18	180TC	M60885
	Input HP (Max.)	3.66	3.67	3.28	2.48		
	OHL Output Shaft	880	960	1050	1150		
10	Output RPM	250	175	116	86	56C	M60826
	Output Torque, in.lb.	763	949	1208	1364	140TC	M60862
	Output HP (Max.)	3.03	2.64	2.23	1.86	180TC	M60886
	Input HP (Max.)	3.38	3.00	2.54	2.17		
	OHL Output Shaft	950	1050	1150	1200		
12.7	Output RPM	197	138	91	68	56C	M60827
	Output Torque, in.lb.	895	1079	1284	1478	140TC	M60863
	Output HP (Max.)	2.80	2.37	1.87	1.59	180TC	M60887
	Input HP (Max.)	3.16	2.69	2.15	1.86		
	OHL Output Shaft	1000	1080	1200	1240		
15	Output RPM	167	117	77	57	56C	M60828
	Output Torque, in.lb.	885	1038	1246	1423	140TC	M60864
	Output HP (Max.)	2.34	1.92	1.53	1.30	180TC	M60888
	Input HP (Max.)	2.70	2.26	1.84	1.59		
	OHL Output Shaft	1080	1180	1270	1240		
18	Output RPM	139	97	64	48	56C	M60829
	Output Torque, in.lb.	969	1105	1330	1499	140TC	M60865
	Output HP (Max.)	2.14	1.71	1.36	1.14	180TC	M60889
	Input HP (Max.)	2.47	2.01	1.63	1.40		
	OHL Output Shaft	1100	1200	1260	1240		
20	Output RPM	125	87	58	43	56C	M60830
	Output Torque, in.lb.	940	1096	1307	1502	140TC	M60866
	Output HP (Max.)	1.87	1.52	1.20	1.03	180TC	M60890
	Input HP (Max.)	2.19	1.82	1.50	1.27		
	OHL Output Shaft	1150	1250	1260	1240		
25	Output RPM	100	70	46	34	56C	M60831
	Output Torque, in.lb.	1017	1188	1282	1283	140TC	M60867
	Output HP (Max.)	1.62	1.32	.94	.70	180TC	M60891
	Input HP (Max.)	2.00	1.63	1.21	.92		
	OHL Output Shaft	1200	1270	1260	1260		
30	Output RPM	83	58	39	29	56C	M60832
	Output Torque, in.lb.	857	990	1173	1322	140TC	M60868
	Output HP (Max.)	1.13	.92	.72	.60	180TC	M60892
	Input HP (Max.)	1.50	1.21	1.00	.84		
	OHL Output Shaft	1300	1290	1270	1260		
40	Output RPM	63	44	29	22	56C	M60833
	Output Torque, in.lb.	892	1026	1211	1390	140TC	M60869
	Output HP (Max.)	.88	.71	.56	.47	180TC	M60893
	Input HP (Max.)	1.24	1.03	.84	.75		
	OHL Output Shaft	1300	1290	1270	1250		
50	Output RPM	50	35	23	17	56C	M60834
	Output Torque, in.lb.	895	1040	1234	1430	140TC	M60870
	Output HP (Max.)	.71	.58	.45	.39	180TC	M60894
	Input HP (Max.)	1.05	.88	.75	.66		
	OHL Output Shaft	1300	1290	1270	1250		
60	Output RPM	42	29	19	14	56C	M60835
	Output Torque, in.lb.	918	1067	1113	1077	140TC	M60871
	Output HP (Max.)	.61	.49	.34	.24	180TC	M60895
	Input HP (Max.)	.93	.79	.58	.44		
	OHL Output Shaft	1300	1290	1280	1280		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Right Angle C-Face Reducers

SINGLE REDUCTION SIZE WM28

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
5	Output RPM	500	350	232	172	56C	M60836
	Output Torque, in.lb.	810	1096	1583	1931	140TC	M60872
	Output HP (Max.)	6.43	6.09	5.83	5.27	180TC	M60896
	Input HP (Max.)	6.95	6.61	6.35	5.79		
	OHL Output Shaft	1360	1480	1630	1730		
7.5	Output RPM	333	233	155	115	56C	M60837
	Output Torque, in.lb.	1059	1461	1866	2314	140TC	M60873
	Output HP (Max.)	5.60	5.41	4.58	4.21	180TC	M60897
	Input HP (Max.)	6.13	5.94	5.06	4.74		
10	Output RPM	250	175	116	86	56C	M60838
	Output Torque, in.lb.	1252	1644	2268	2869	140TC	M60874
	Output HP (Max.)	4.97	4.57	4.18	3.92	180TC	M60898
	Input HP (Max.)	5.50	5.10	4.71	4.45		
12.7	Output RPM	197	138	91	68	56C	M60839
	Output Torque, in.lb.	1392	1980	2615	3128	140TC	M60875
	Output HP (Max.)	4.36	4.34	3.80	3.37	180TC	M60899
	Input HP (Max.)	5.00	5.00	4.34	3.88		
15	Output RPM	167	117	77	57	56C	M60840
	Output Torque, in.lb.	1337	1754	2637	3064	140TC	M60876
	Output HP (Max.)	3.54	3.25	3.24	2.79	180TC	M60900
	Input HP (Max.)	4.08	3.79	3.78	3.33		
18	Output RPM	139	97	64	48	56C	M60841
	Output Torque, in.lb.	1494	2127	2859	3146	140TC	M60877
	Output HP (Max.)	3.29	3.28	2.92	2.39	180TC	M60901
	Input HP (Max.)	3.84	3.83	3.46	2.89		
20	Output RPM	125	87	58	43	56C	M60842
	Output Torque, in.lb.	1416	1873	2597	2967	140TC	M60878
	Output HP (Max.)	2.81	2.60	2.39	2.03	180TC	M60902
	Input HP (Max.)	3.36	3.15	3.00	2.55		
25	Output RPM	100	70	46	34	56C	M60843
	Output Torque, in.lb.	1642	2192	2772	2798	140TC	M60879
	Output HP (Max.)	2.61	2.44	2.04	1.53	180TC	M60903
	Input HP (Max.)	3.16	3.00	2.55	2.00		
30	Output RPM	83	58	39	29	56C	M60844
	Output Torque, in.lb.	1702	2311	2832	3190	140TC	M60880
	Output HP (Max.)	2.25	2.14	1.74	1.45	180TC	M60904
	Input HP (Max.)	2.81	2.70	2.26	2.00		
40	Output RPM	63	44	29	22	56C	M60845
	Output Torque, in.lb.	1537	1993	2699	2989	140TC	M60881
	Output HP (Max.)	1.53	1.38	1.24	1.02	180TC	M60905
	Input HP (Max.)	2.09	2.00	1.80	1.54		
50	Output RPM	50	35	23	17	56C	M60846
	Output Torque, in.lb.	1688	2211	2729	3046	140TC	M60882
	Output HP (Max.)	1.34	1.23	1.01	.83	180TC	M60906
	Input HP (Max.)	2.00	1.80	1.55	1.35		
	OHL Output Shaft	2240	2200	2180	2150		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Right Angle C-Face Reducers

SINGLE REDUCTION SIZE WM40

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
5	Output RPM	500	350	232	172	180TC	M60922
	Output Torque, in.lb.	2475	3875	5156	6163		
	Output HP (Max.)	19.64	21.53	18.99	16.83	210TC	M60923
	Input HP (Max.)	21.00	23.00	20.40	18.10		
	OHL Output Shaft	2600	2700	3000	3200	250TC	*
7.5	Output RPM	333	233	155	115	180TC	M60908
	Output Torque, in.lb.	3684	4485	6137	6723		
	Output HP (Max.)	14.62	16.61	15.07	12.24	210TC	M60915
	Input HP (Max.)	16.00	18.00	16.40	13.46		
	OHL Output Shaft	3100	3100	3300	3700	250TC	*
10	Output RPM	250	175	116	86	180TC	M60924
	Output Torque, in.lb.	3479	5253	6425	6911		
	Output HP (Max.)	13.80	14.59	11.83	9.43	210TC	M60925
	Input HP (Max.)	15.30	16.00	13.20	10.80		
	OHL Output Shaft	2750	3200	3700	3700	250TC	*
12.7	Output RPM	197	138	91	68	180TC	M60909
	Output Torque, in.lb.	3475	5147	6247	6743		
	Output HP (Max.)	10.88	11.28	9.08	7.26	210TC	M60916
	Input HP (Max.)	12.30	12.70	10.39	8.49		
	OHL Output Shaft	3400	3600	3700	3700	250TC	*
15	Output RPM	167	117	77	57	180TC	M60910
	Output Torque, in.lb.	3770	5497	6452	6936		
	Output HP (Max.)	9.97	10.18	7.92	6.31	210TC	M60917
	Input HP (Max.)	11.40	11.60	9.18	7.50		
	OHL Output Shaft	3500	3700	3700	3700	250TC	*
18	Output RPM	139	97	64	48	180TC	M60911
	Output Torque, in.lb.	3734	5497	6481	6950		
	Output HP (Max.)	8.23	8.48	6.63	5.27	210TC	M60918
	Input HP (Max.)	9.67	10.00	7.97	6.48		
	OHL Output Shaft	3800	3700	3700	3700	250TC	*
25	Output RPM	100	70	46	34	180TC	M60912
	Output Torque, in.lb.	4573	5829	6792	7171		
	Output HP (Max.)	7.26	6.48	5.00	3.92	210TC	M60919
	Input HP (Max.)	8.80	7.87	6.26	5.14		
	OHL Output Shaft	3700	3700	3700	3700	250TC	*
30	Output RPM	83	58	39	29	180TC	M61220
	Output Torque, in.lb.	4167	5433	6273	6725		
	Output HP (Max.)	5.51	5.03	3.85	3.06	210TC	M61221
	Input HP (Max.)	6.98	6.45	5.15	4.19		
	OHL Output Shaft	3800	3700	3700	3700	250TC	*
40	Output RPM	63	44	29	22	180TC	M61222
	Output Torque, in.lb.	4556	5710	6591	7053		
	Output HP (Max.)	4.52	3.97	3.03	2.41	210TC	M61223
	Input HP (Max.)	5.95	5.36	4.24	3.49		
	OHL Output Shaft	3800	3700	3700	3700	250TC	*
50	Output RPM	50	35	23	17	180TC	M60913
	Output Torque, in.lb.	5103	5848	6843	7215		
	Output HP (Max.)	4.05	3.25	2.52	1.97	210TC	M60920
	Input HP (Max.)	5.55	4.59	3.73	3.04		
	OHL Output Shaft	3700	3700	3700	3700	250TC	*
60	Output RPM	42	29	19	14	180TC	M60914
	Output Torque, in.lb.	5259	5797	6768	7173		
	Output HP (Max.)	3.48	2.68	2.08	1.63	210TC	M60921
	Input HP (Max.)	5.00	3.96	3.22	2.64		
	OHL Output Shaft	3700	3700	3700	3700	250TC	*

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.
Above ratings also apply to WR40

*Made to Order

XL Right Angle C-Face Reducers

SINGLE REDUCTION SIZE H419

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
15	Output RPM	167	117	77	57	180TC	M60151
	Output Torque, in.lb.	3904	4811	6329	7416		
	Output HP (Max.)	10.33	8.91	7.77	6.75		
	Input HP (Max.)	11.60	10.18	9.04	8.02	210TC	M60157
	OHL Output Shaft	3150	3050	2970	2830		
20	Output RPM	125	87	58	43	180TC	M60152
	Output Torque, in.lb.	3903	4985	6770	8121		
	Output HP (Max.)	7.74	6.92	6.23	5.54		
	Input HP (Max.)	9.03	8.21	7.52	6.83	210TC	M94770
	OHL Output Shaft	3150	3050	2900	2750		
30	Output RPM	83	58	39	29	180TC	M94771
	Output Torque, in.lb.	3819	5046	6241	7741		
	Output HP (Max.)	5.05	4.67	3.83	3.52		
	Input HP (Max.)	6.36	5.98	5.14	5.00	210TC	**
	OHL Output Shaft	3150	3070	2980	2770		
40	Output RPM	63	44	29	22	180TC	M94772
	Output Torque, in.lb.	4300	5450	6898	7986		
	Output HP (Max.)	4.27	3.79	3.18	2.73		
	Input HP (Max.)	5.59	5.11	4.50	4.02	210TC	**
	OHL Output Shaft	3110	3050	2900	2730		
50	Output RPM	50	35	23	17	180TC	M60153
	Output Torque, in.lb.	4654	5926	7589	7976		
	Output HP (Max.)	3.69	3.29	2.79	2.18		
	Input HP (Max.)	5.03	4.63	4.13	3.41	210TC	**
	OHL Output Shaft	3100	3000	2800	2740		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

**Not Available

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM12

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
20	Output RPM	125	87	58	43	56C	*
	Output Torque, in.lb.	663	772	886	989	56C	*
	Output HP (Max.)	1.29	1.06	.80	.66	140TC	*
	Input HP (Max.)	1.51	1.23	1.00	.80	140TC	*
	OHL Output Shaft	980	1080	1130	1120	140TC	*
25	Output RPM	104	70	48	36	56C	M60191
	Output Torque, in.lb.	793	923	1036	1029	56C	M60191
	Output HP (Max.)	1.29	1.06	.78	.58	140TC	M60203
	Input HP (Max.)	1.51	1.23	.93	.70	140TC	M60203
	OHL Output Shaft	1040	1130	1120	1120	140TC	M60203
30	Output RPM	83	58	39	29	56C	M60192
	Output Torque, in.lb.	788	881	871	876	56C	M60192
	Output HP (Max.)	1.03	.80	.53	.39	140TC	M60204
	Input HP (Max.)	1.23	1.00	.65	.50	140TC	M60204
	OHL Output Shaft	1100	1130	1130	1130	140TC	M60204
36	Output RPM	69	48	32	24	56C	M60193
	Output Torque, in.lb.	939	1039	1038	1044	56C	M60193
	Output HP (Max.)	1.03	.79	.53	.39	140TC	M60205
	Input HP (Max.)	1.23	.96	.65	.49	140TC	M60205
	OHL Output Shaft	1130	1120	1120	1120	140TC	M60205
40	Output RPM	63	44	29	22	56C	M60194
	Output Torque, in.lb.	805	934	1117	1291	56C	M60194
	Output HP (Max.)	.78	.64	.51	.43	140TC	M60206
	Input HP (Max.)	1.00	.80	.64	.55	140TC	M60206
	OHL Output Shaft	1140	1130	1130	740	140TC	M60206
50	Output RPM	49	35	23	17	56C	M60195
	Output Torque, in.lb.	838	1024	1179	1257	56C	M60195
	Output HP (Max.)	.64	.55	.42	.33	140TC	M60207
	Input HP (Max.)	.82	.69	.53	.43	140TC	M60207
	OHL Output Shaft	1130	1120	930	800	140TC	M60207
60	Output RPM	42	29	19	14	56C	M60196
	Output Torque, in.lb.	998	1067	1059	1034	56C	M60196
	Output HP (Max.)	.64	.48	.32	.23	140TC	M60208
	Input HP (Max.)	.82	.61	.41	.30	140TC	M60208
	OHL Output Shaft	1120	1120	1120	1120	140TC	M60208
70	Output RPM	35	25	16	12	56C	M60197
	Output Torque, in.lb.	926	1056	1047	1048	56C	M60197
	Output HP (Max.)	.51	.40	.26	.20	140TC	M60209
	Input HP (Max.)	.67	.54	.37	.28	140TC	M60209
	OHL Output Shaft	1130	1120	1120	1120	140TC	M60209

* Made to Order

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM12

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
86	Output RPM	29	20	13.5	10	56C	M60198
	Output Torque, in.lb.	1000	1060	1066	1067	56C	M60198
	Output HP (Max.)	.45	.34	.22	.17	140TC	M60210
	Input HP (Max.)	.61	.46	.31	.24	140TC	M60210
	OHL Output Shaft	1120	1120	1110	1110	140TC	M60210
101	Output RPM	25	17	11.5	8.5	56C	M94405
	Output Torque, in.lb.	865	1062	1182	1182	56C	M94405
	Output HP (Max.)	.34	.29	.21	.16	140TC	M60211
	Input HP (Max.)	.50	.41	.31	.23	140TC	M60211
	OHL Output Shaft	1130	1120	930	930	140TC	M60211
121	Output RPM	21	14	9.6	7	56C	M94406
	Output Torque, in.lb.	758	964	1175	1345	56C	M94406
	Output HP (Max.)	.25	.22	.18	.15	140TC	M60212
	Input HP (Max.)	.40	.36	.29	.26	140TC	M60212
	OHL Output Shaft	1140	1130	950	600	140TC	M60212
144	Output RPM	17	12	8	6	56C	M61240
	Output Torque, in.lb.	903	1056	1073	1062	56C	M61240
	Output HP (Max.)	.25	.20	.14	.10	140TC	M60213
	Input HP (Max.)	.40	.34	.23	.18	140TC	M60213
	OHL Output Shaft	1130	1120	1110	1120	140TC	M60213
162	Output RPM	15	11	7	5	56C	M60199
	Output Torque, in.lb.	844	1023	1255	1401	56C	M60199
	Output HP (Max.)	.21	.17	.14	.12	140TC	M60214
	Input HP (Max.)	.36	.31	.25	.22	140TC	M60214
	OHL Output Shaft	1140	1120	810	380	140TC	M60214
192	Output RPM	13	9	6	4.5	56C	M94408
	Output Torque, in.lb.	1005	1065	1079	1069	56C	M94408
	Output HP (Max.)	.21	.15	.10	.07	140TC	M60215
	Input HP (Max.)	.36	.28	.19	.14	140TC	M60215
	OHL Output Shaft	1120	1120	1120	1120	140TC	M60215
240	Output RPM	10	7	4.8	3.6	56C	M60200
	Output Torque, in.lb.	987	1065	1081	1081	56C	M60200
	Output HP (Max.)	.16	.12	.08	.06	140TC	M60216
	Input HP (Max.)	.30	.24	.16	.13	140TC	M60216
	OHL Output Shaft	1130	1120	1100	1100	140TC	M60216
288	Output RPM	9	6	4	2	56C	*
	Output Torque, in.lb.	871	1005	938	1212	56C	*
	Output HP (Max.)	0.12	0.10	0.06	0.04	140TC	*
	Input HP (Max.)	0.25	0.20	0.13	0.09	140TC	*
	OHL Output Shaft	1300	1285	1255	1115	140TC	*
336	Output RPM	7.4	5	3.5	2.6	56C	M60202
	Output Torque, in.lb.	477	460	463	447	56C	M60202
	Output HP (Max.)	.06	.04	.02	.02	140TC	M60218
	Input HP (Max.)	.13	.10	.06	.05	140TC	M60218
	OHL Output Shaft	1160	1160	1160	1160	140TC	M60218

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM16

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
20	Output RPM	125	87	58	43	56C	M60000
	Output Torque, in.lb.	1726	2206	2427	2441		
	Output HP (Max.)	3.37	3.02	2.20	1.64		
	Input HP (Max.)	3.75	3.37	2.48	1.87		
	OHL Output Shaft	1240	1460	1640	1640		
25	Output RPM	104	70	48	36	56C	M60219
	Output Torque, in.lb.	2050	2277	2426	2408		
	Output HP (Max.)	3.40	2.64	1.87	1.37		
	Input HP (Max.)	3.78	3.00	2.11	1.57		
	OHL Output Shaft	1380	1540	1640	1640		
30	Output RPM	83	58	39	29	56C	M60220
	Output Torque, in.lb.	1869	1868	1868	1867		
	Output HP (Max.)	2.43	1.70	1.13	.84		
	Input HP (Max.)	2.78	2.00	1.32	1.00		
	OHL Output Shaft	1480	1660	1700	1700		
36	Output RPM	69	48	32	24	56C	M60221
	Output Torque, in.lb.	2202	2201	2201	2199		
	Output HP (Max.)	2.43	1.70	1.13	.84		
	Input HP (Max.)	2.78	2.00	1.32	1.00		
	OHL Output Shaft	1560	1640	1640	1640		
40	Output RPM	63	44	29	22	56C	M60222
	Output Torque, in.lb.	2008	2360	2765	2909		
	Output HP (Max.)	1.96	1.61	1.25	.98		
	Input HP (Max.)	2.28	1.91	1.51	1.19		
	OHL Output Shaft	1650	1620	1150	850		
50	Output RPM	49	35	23	17	56C	M60223
	Output Torque, in.lb.	2036	2353	2794	2913		
	Output HP (Max.)	1.57	1.27	1.00	.77		
	Input HP (Max.)	1.88	1.54	1.24	1.00		
	OHL Output Shaft	1680	1620	1100	820		
60	Output RPM	42	29	19	14	56C	M94850
	Output Torque, in.lb.	2398	2568	2638	2669		
	Output HP (Max.)	1.57	1.18	.80	.60		
	Input HP (Max.)	1.88	1.43	1.00	.76		
	OHL Output Shaft	1600	1530	1400	1320		
70	Output RPM	35	25	16	12	56C	M60224
	Output Torque, in.lb.	2468	2526	2521	2628		
	Output HP (Max.)	1.36	.98	.65	.50		
	Input HP (Max.)	1.67	1.21	.83	.65		
	OHL Output Shaft	1590	1570	1570	1420		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM16

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
86	Output RPM	29	20	13.5	10	56C	M94889
	Output Torque, in.lb.	2351	2522	2645	2648		
	Output HP (Max.)	1.08	0.81	0.56	.42		
	Input HP (Max.)	1.37	1.05	0.75	.58	140TC	M94889
	OHL Output Shaft	1620	1570	1380	1380		
101	Output RPM	25	17	11.5	8.5	56C	M94411
	Output Torque, in.lb.	2196	2558	2897	2900		
	Output HP (Max.)	.86	.70	.52	.39		
	Input HP (Max.)	1.09	.90	.70	.53	140TC	M60237
	OHL Output Shaft	1640	1510	840	840		
121	Output RPM	21	14	9.6	7	56C	M94412
	Output Torque, in.lb.	1921	2227	2685	2887		
	Output HP (Max.)	.63	.51	.41	.32		
	Input HP (Max.)	.90	.75	.62	.52	140TC	M60238
	OHL Output Shaft	1700	1630	1300	840		
144	Output RPM	17	12	8	6	56C	M94413
	Output Torque, in.lb.	2264	2624	2715	2646		
	Output HP (Max.)	.63	.51	.35	.25		
	Input HP (Max.)	.90	.75	.54	.41	140TC	M60239
	OHL Output Shaft	1640	1420	1250	1380		
162	Output RPM	15	11	7	5	56C	M60226
	Output Torque, in.lb.	2080	2374	2867	2893		
	Output HP (Max.)	.51	.41	.32	.24		
	Input HP (Max.)	.78	.64	.53	.42	140TC	M60240
	OHL Output Shaft	1670	1610	920	850		
192	Output RPM	13	9	6	4.5	56C	M94414
	Output Torque, in.lb.	2464	2647	2663	2630		
	Output HP (Max.)	.51	.38	.25	.19		
	Input HP (Max.)	.78	.60	.42	.33	140TC	M60241
	OHL Output Shaft	1590	1400	1350	1400		
240	Output RPM	10	7	4.8	3.6	56C	M60227
	Output Torque, in.lb.	2528	2667	2672	2660		
	Output HP (Max.)	.42	.31	.21	.15		
	Input HP (Max.)	.67	.52	.37	.28	140TC	M60242
	OHL Output Shaft	1600	1340	1340	1340		
288	Output RPM	8.7	6	4	3	56C	M94415
	Output Torque, in.lb.	2340	2324	2305	2309		
	Output HP (Max.)	.32	.22	.15	.11		
	Input HP (Max.)	.55	.40	.28	.21	140TC	M60243
	OHL Output Shaft	1620	1620	1620	1620		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM21

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
20	Output RPM	125	87	58	43	56C	M60002
	Output Torque, in.lb.	3059	3610	4544	4977	140TC	M60003
	Output HP (Max.)	5.98	4.94	4.12	3.35		
	Input HP (Max.)	6.52	5.43	4.56	3.74		
	OHL Output Shaft	2150	2360	2680	2680	180TC	M60004
25	Output RPM	104	70	48	36	56C	M60245
	Output Torque, in.lb.	3604	4238	4785	5848	140TC	M60256
	Output HP (Max.)	5.98	4.92	3.68	3.34		
	Input HP (Max.)	6.52	5.41	4.08	3.73		
	OHL Output Shaft	2250	2490	2720	2500	180TC	M60270
30	Output RPM	83	58	39	29	56C	M60246
	Output Torque, in.lb.	3429	3966	4782	4770	140TC	M60257
	Output HP (Max.)	4.47	3.62	2.89	2.14		
	Input HP (Max.)	5.00	4.08	3.28	2.48		
	OHL Output Shaft	2400	2680	2720	2720	180TC	M60271
36	Output RPM	69	48	32	24	56C	M60247
	Output Torque, in.lb.	4039	4671	5458	5618	140TC	M60258
	Output HP (Max.)	4.47	3.62	2.80	2.14		
	Input HP (Max.)	5.00	4.08	3.18	2.48		
	OHL Output Shaft	2500	2750	2600	2570	180TC	M60272
40	Output RPM	63	44	29	22	56C	M60248
	Output Torque, in.lb.	3415	3973	4810	5429	140TC	M61257
	Output HP (Max.)	3.34	2.72	2.18	1.83		
	Input HP (Max.)	3.79	3.14	2.54	2.17		
	OHL Output Shaft	2670	2800	2720	2620	180TC	M60273
50	Output RPM	49	35	23	17	56C	M60249
	Output Torque, in.lb.	3701	4297	5110	5882	140TC	M94892
	Output HP (Max.)	2.85	2.32	1.83	1.56		
	Input HP (Max.)	3.28	2.69	2.16	1.86		
	OHL Output Shaft	2820	2800	2670	2500	180TC	M60274
60	Output RPM	42	29	19	14	56C	M60250
	Output Torque, in.lb.	4360	5062	6019	6399	140TC	M94891
	Output HP (Max.)	2.85	2.32	1.83	1.44		
	Input HP (Max.)	3.28	2.69	2.16	1.72		
	OHL Output Shaft	2800	2680	2460	2240	180TC	M60275
70	Output RPM	35	25	16	12	56C	M60251
	Output Torque, in.lb.	4260	4869	5845	6287	140TC	M60260
	Output HP (Max.)	2.36	1.88	1.50	1.20		
	Input HP (Max.)	2.77	2.26	1.84	1.50		
	OHL Output Shaft	2780	2680	2470	2350	180TC	M60276

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM21

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
86	Output RPM	29	20	13.5	10	56C	M60252
	Output Torque, in.lb.	4544	5182	6196	6211	140TC	M94890
	Output HP (Max.)	2.09	1.67	1.32	.98	140TC	M94890
	Input HP (Max.)	2.47	2.01	1.62	1.24	180TC	M60277
	OHL Output Shaft	2760	2640	2400	2400	180TC	M60277
101	Output RPM	25	17	11.5	8.5	56C	M94416
	Output Torque, in.lb.	4051	4729	5103	5107	140TC	M94416
	Output HP (Max.)	1.58	1.29	.92	.69	140TC	M94416
	Input HP (Max.)	2.00	1.64	1.21	.92	180TC	M60278
121	Output RPM	21	14	9.6	7	56C	M61239
	Output Torque, in.lb.	3413	3940	4670	5263	140TC	M60263
	Output HP (Max.)	1.11	.90	.71	.59	140TC	M60263
	Input HP (Max.)	1.50	1.21	1.00	.84	180TC	M60279
144	Output RPM	17	12	8	6	56C	M94418
	Output Torque, in.lb.	4021	4642	5502	6200	140TC	M94418
	Output HP (Max.)	1.11	.90	.71	.59	140TC	M94418
	Input HP (Max.)	1.50	1.21	1.00	.84	180TC	M90280
162	Output RPM	15	11	7	5	56C	M60253
	Output Torque, in.lb.	3552	4087	4823	5536	140TC	M60255
	Output HP (Max.)	.87	.70	.55	.46	140TC	M60255
	Input HP (Max.)	1.24	1.03	.84	.75	180TC	M60281
192	Output RPM	13	9	6	4.5	56C	M94419
	Output Torque, in.lb.	4184	4814	5681	6298	140TC	M94419
	Output HP (Max.)	.87	.70	.55	.45	140TC	M94419
	Input HP (Max.)	1.24	1.03	.84	.72	180TC	M60282
240	Output RPM	10	7	4.8	3.6	56C	M60254
	Output Torque, in.lb.	4196	4879	5787	6444	140TC	M60267
	Output HP (Max.)	.70	.57	.44	.37	140TC	M60267
	Input HP (Max.)	1.05	.88	.75	.63	180TC	M60283
288	Output RPM	8.7	6	4	3	56C	M94420
	Output Torque, in.lb.	4306	5004	5221	5053	140TC	M60268
	Output HP (Max.)	.59	.48	.33	.24	140TC	M60268
	Input HP (Max.)	.93	.79	.58	.44	180TC	M60284
288	Output RPM	8.7	6	4	3	56C	M94420
	Output Torque, in.lb.	4306	5004	5221	5053	140TC	M60268
	Output HP (Max.)	.59	.48	.33	.24	140TC	M60268
	Input HP (Max.)	.93	.79	.58	.44	180TC	M60284

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM28

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
10	Output RPM	250	175	116	86	140TC	M60009
	Output Torque, in.lb.	3003	3688	4519	5026	180TC	*
	Output HP (Max.)	11.92	10.24	8.32	6.86	210TC	*
	Input HP (Max.)	12.98	11.25	9.21	7.67		
	OHL Output Shaft	3884	4307	4927	5309		
12.7	Output RPM	207	138	91	68	140TC	M60010
	Output Torque, in.lb.	3617	4442	5443	6054	180TC	*
	Output HP (Max.)	11.92	10.24	8.32	6.86	210TC	*
	Input HP (Max.)	12.98	11.25	9.21	7.67		
	OHL Output Shaft	4098	4541	5121	5601		
15	Output RPM	167	117	77	57	140TC	M60011
	Output Torque, in.lb.	3350	4119	4855	4827	180TC	*
	Output HP (Max.)	8.86	7.63	5.96	4.39	210TC	*
	Input HP (Max.)	9.79	8.49	6.69	5.04		
	OHL Output Shaft	4386	4862	5503	6044		
18	Output RPM	138	97	64	48	140TC	M60012
	Output Torque, in.lb.	4035	4962	5848	5814	180TC	*
	Output HP (Max.)	8.86	7.63	5.96	4.39	210TC	*
	Input HP (Max.)	9.79	8.49	6.69	5.04		
	OHL Output Shaft	4630	5126	5796	6342		
20	Output RPM	125	87	58	43	140TC	M60005
	Output Torque, in.lb.	5176	6818	8811	9643	180TC	M60006
	Output HP (Max.)	10.27	9.47	8.11	6.58	210TC	M60007
	Input HP (Max.)	11.21	10.41	8.98	7.40		
	OHL Output Shaft	4700	5200	5700	5800		
25	Output RPM	104	70	48	36	140TC	M60286
	Output Torque, in.lb.	6220	8199	9322	10,235	180TC	M60297
	Output HP (Max.)	10.35	9.55	7.20	5.86	210TC	M60313
	Input HP (Max.)	11.30	10.50	7.98	6.56		
	OHL Output Shaft	5000	5500	5700	5600		
30	Output RPM	83	58	39	29	140TC	M60287
	Output Torque, in.lb.	6700	8239	9710	9653	180TC	M60298
	Output HP (Max.)	8.86	7.63	5.96	4.39	210TC	M60314
	Input HP (Max.)	10.00	8.49	6.69	5.04		
	OHL Output Shaft	5300	5800	5700	5700		
36	Output RPM	69	48	32	24	140TC	M60288
	Output Torque, in.lb.	7988	9389	10,684	11,510	180TC	M60299
	Output HP (Max.)	8.86	7.29	5.50	4.39	210TC	M60315
	Input HP (Max.)	10.00	8.12	6.18	5.04		
	OHL Output Shaft	5500	5700	5600	5600		
40	Output RPM	63	44	29	22	140TC	M60289
	Output Torque, in.lb.	7258	8393	10,347	11,348	180TC	M60300
	Output HP (Max.)	7.20	5.83	4.76	3.87	210TC	M60316
	Input HP (Max.)	8.06	6.61	5.47	4.49		
	OHL Output Shaft	5800	5700	5600	5600		
50	Output RPM	49	35	23	17	140TC	M60290
	Output Torque, in.lb.	7713	8996	10,801	12,260	180TC	M60301
	Output HP (Max.)	6.04	4.93	3.93	3.30	210TC	M60317
	Input HP (Max.)	6.86	5.64	4.57	3.88		
	OHL Output Shaft	5800	5700	5600	5500		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM28

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
60	Output RPM	42	29	19	14	140TC	M60302
	Output Torque, in.lb.	9196	10,725	12,677	13,854	180TC	M94432
	Output HP (Max.)	6.04	4.93	3.86	3.13	210TC	M60318
	Input HP (Max.)	6.86	5.64	4.50	3.68		
	OHL Output Shaft	5700	5600	5500	5400		
70	Output RPM	35	25	16	12	140TC	M60291
	Output Torque, in.lb.	8904	10,506	12,588	14,319	180TC	M60303
	Output HP (Max.)	4.94	4.08	3.24	2.73	210TC	M60319
	Input HP (Max.)	5.75	5.00	3.87	3.33		
	OHL Output Shaft	5700	5600	5500	5300		
86	Output RPM	29	20	13.5	10	140TC	M60292
	Output Torque, in.lb.	9434	10,793	13,359	14,701	180TC	M60304
	Output HP (Max.)	4.36	3.49	2.87	2.34	210TC	M60320
	Input HP (Max.)	5.14	4.15	3.46	2.89		
	OHL Output Shaft	5700	5600	5400	5200		
101	Output RPM	25	17	11.5	8.5	140TC	M94433
	Output Torque, in.lb.	7858	9098	10,867	10,970	180TC	M60305
	Output HP (Max.)	3.12	2.53	2.00	1.50	210TC	M60321
	Input HP (Max.)	3.83	3.16	2.55	1.96		
	OHL Output Shaft	5800	5700	5600	5600		
121	Output RPM	21	14	9.6	7	140TC	M61241
	Output Torque, in.lb.	7966	9130	11,100	12,505	180TC	M60306
	Output HP (Max.)	2.63	2.11	1.70	1.42	210TC	M60322
	Input HP (Max.)	3.33	2.72	2.26	2.00		
	OHL Output Shaft	5800	5700	5600	5500		
144	Output RPM	17	12	8	6	140TC	M94435
	Output Torque, in.lb.	9497	10,885	13,235	14,910	180TC	M60307
	Output HP (Max.)	2.63	2.11	1.70	1.42	210TC	M60323
	Input HP (Max.)	3.33	2.72	2.26	2.00		
	OHL Output Shaft	5700	5600	5500	5200		
162	Output RPM	15	11	7	5	140TC	M60293
	Output Torque, in.lb.	7302	8605	10,581	11,716	180TC	M60308
	Output HP (Max.)	1.81	1.49	1.22	1.00	210TC	M60324
	Input HP (Max.)	2.51	2.14	1.80	1.54		
	OHL Output Shaft	5800	5700	5600	5600		
192	Output RPM	13	9	6	4.5	140TC	M61243
	Output Torque, in.lb.	8706	10,260	12,616	13,969	180TC	M60309
	Output HP (Max.)	1.81	1.49	1.22	1.00	210TC	M60325
	Input HP (Max.)	2.51	2.14	1.80	1.54		
	OHL Output Shaft	5700	5600	5500	5400		
240	Output RPM	10	7	4.8	3.6	140TC	M60294
	Output Torque, in.lb.	9152	10,393	12,755	14,236	180TC	M60310
	Output HP (Max.)	1.52	1.21	.98	.81	210TC	M60326
	Input HP (Max.)	2.20	1.81	1.55	1.35		
	OHL Output Shaft	5700	5600	5500	5300		

OHL output shaft value shown is lbs. (maximum allowed).

* Made to Order

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM40

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
10	Output RPM	250	175	116	86	180TC	*
	Output Torque, in.lb.	6622	8187	10,150	12,054	210TC	*
	Output HP (Max.)	26.3	22.7	18.70	16.50	250TC	*
	Input HP (Max.)	28.44	24.64	20.42	18.06		
	OHL Output Shaft	5879	6517	7344	8004		
15	Output RPM	167	117	77.3	57.3	180TC	*
	Output Torque, in.lb.	7883	9800	12,028	13,177	210TC	*
	Output HP (Max.)	20.85	18.15	14.77	11.99	250TC	*
	Input HP (Max.)	22.90	20.30	16.41	13.46		
	OHL Output Shaft	6623	7337	8277	8719		
20	Output RPM	125	87	58	43	180TC	M60021
	Output Torque, in.lb.	10,745	15,659	20,212	24,024	210TC	M60024
	Output HP (Max.)	21.32	21.75	18.61	16.40	250TC	M61217
	Input HP (Max.)	23.20	23.70	20.40	17.90		
	OHL Output Shaft	6200	6800	7600	8200		
25	Output RPM	104	70	48	36	180TC	M60022
	Output Torque, in.lb.	12,356	18,008	22,784	24,989	210TC	M60025
	Output HP (Max.)	21.32	21.75	18.24	14.83	250TC	M61218
	Input HP (Max.)	23.20	23.70	20.00	16.30		
	OHL Output Shaft	6500	7100	8000	8000		
30	Output RPM	83	58	39	29	180TC	M60330
	Output Torque, in.lb.	14,006	19,599	24,058	26,353	210TC	M60346
	Output HP (Max.)	18.53	18.15	14.77	11.99	250TC	M60362
	Input HP (Max.)	20.40	20.00	16.40	13.48		
	OHL Output Shaft	7000	7600	8100	7900		
36	Output RPM	69	48	32	24	180TC	M60331
	Output Torque, in.lb.	16,341	22,866	25,467	26,122	210TC	M60347
	Output HP (Max.)	18.53	18.15	13.40	10.19	250TC	M60363
	Input HP (Max.)	20.40	20.00	15.00	11.46		
	OHL Output Shaft	7200	7900	8000	7900		
40	Output RPM	63	44	29	22	180TC	M60023
	Output Torque, in.lb.	15,925	21,524	25,186	27,091	210TC	M60026
	Output HP (Max.)	15.80	14.95	11.59	9.25	250TC	M61219
	Input HP (Max.)	17.60	16.70	13.20	10.80		
	OHL Output Shaft	7600	8400	8000	7800		
50	Output RPM	49	35	23	17	180TC	M60333
	Output Torque, in.lb.	17,757	21,870	25,125	27,119	210TC	M60349
	Output HP (Max.)	13.55	11.68	8.90	7.12	250TC	M60365
	Input HP (Max.)	15.50	13.40	10.39	8.49		
	OHL Output Shaft	8200	8300	8100	7800		
60	Output RPM	42	29	19	14	180TC	M60334
	Output Torque, in.lb.	20,489	25,234	26,716	29,230	210TC	M60350
	Output HP (Max.)	13.55	11.68	8.20	6.65	250TC	M60366
	Input HP (Max.)	15.50	13.40	9.59	7.94		
	OHL Output Shaft	8400	8000	7900	7500		

Above ratings also apply to CR40

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle C-Face Reducers

COMBINATION REDUCTION SIZE CM40

Ratio	Rating Data	RPM INPUT				FRAME SIZE	PART NUMBER
		2500	1750	1160	860		
70	Output RPM	35	25	16	12	180TC	M60335
	Output Torque, in.lb.	22118	25,783	26,557	26,795	210TC	M60351
	Output HP (Max.)	12.54	10.23	6.99	5.23	250TC	M60367
	Input HP (Max.)	14.5	11.89	8.28	6.33		
	OHL Output Shaft	8300	8000	7900	7900		
86	Output RPM	29	20	13.5	10	180TC	M60336
	Output Torque, in.lb.	22,220	23,358	27,036	26,707	210TC	M60352
	Output HP (Max.)	10.62	8.49	6.00	4.39	250TC	M60368
	Input HP (Max.)	12.60	10.12	7.50	5.53		
101	Output RPM	25	17	11.5	8.5	180TC	M60337
	Output Torque, in.lb.	20,814	22,851	26,623	28,110	210TC	M60353
	Output HP (Max.)	8.26	6.35	4.90	3.84	250TC	M60369
	Input HP (Max.)	10.16	7.87	6.26	5.14		
121	Output RPM	21	14	9.6	7	180TC	M61224
	Output Torque, in.lb.	19,432	21,295	24,590	26,362	210TC	M61225
	Output HP (Max.)	6.43	4.93	3.77	3.00	250TC	M61226
	Input HP (Max.)	8.74	6.45	5.15	4.19		
144	Output RPM	17	12	8	6	180TC	M61227
	Output Torque, in.lb.	22,509	24,667	27,344	27,692	210TC	M61228
	Output HP (Max.)	6.43	4.93	3.62	2.72	250TC	M61229
	Input HP (Max.)	8.74	6.45	5.00	3.81		
162	Output RPM	15	11	7	5	180TC	M61230
	Output Torque, in.lb.	20,231	22,384	25,837	27,647	210TC	M61231
	Output HP (Max.)	5.02	3.89	2.99	2.36	250TC	M61232
	Input HP (Max.)	6.70	5.36	4.24	3.49		
192	Output RPM	13	9	6	4.5	180TC	M61233
	Output Torque, in.lb.	23,392	25,882	27,868	28,289	210TC	M61234
	Output HP (Max.)	5.02	3.89	2.76	2.09	250TC	M61235
	Input HP (Max.)	6.70	5.36	3.94	3.10		
240	Output RPM	10	7	4.8	3.6	180TC	M60342
	Output Torque, in.lb.	23,721	25,932	29,401	27,778	210TC	M60358
	Output HP (Max.)	4.08	3.12	2.26	1.64	250TC	M60374
	Input HP (Max.)	5.69	4.50	3.43	2.60		
288	Output RPM	8.7	6	4	3	180TC	M60353
	Output Torque, in.lb.	23,792	26,228	27,658	28,000	210TC	M60359
	Output HP (Max.)	3.41	2.63	1.84	1.38	250TC	M60375
	Input HP (Max.)	5.00	3.96	3.00	2.29		
	OHL Output Shaft	8100	7900	7700	7700		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

Above ratings also apply to CR40.

XL Right Angle Gearmotors

.33 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN--LBS)	OUTPUT HP	PART NUMBER
350	5.0	FB56	WG12A	540	45	0.25	*
233	7.5	FB56	WG12A	525	66	0.24	*
175	10.0	FB56	WG12A	510	86	0.24	*
138	12.7	FB56	WG12A	490	113	0.24	*
117	15.0	FB56	WG12A	480	127	0.24	*
97	18.0	FB56	WG12A	467	152	0.24	*
87	20.0	FB56	WG12A	457	159	0.22	*
70	25.0	FB56	WG12A	422	209	0.23	*
58	30.0	FB56	WG12A	415	219	0.20	X75811
44	40.0	FB56	WG16A	982	280	0.19	*
35	50.0	FB56	WG16A	980	343	0.19	X75828
29	60.0	FB56	WG16A	977	396	0.18	*
25	70.0	FB56	CG12A	1155	603	0.23	*
20	86.0	FB56	CG12A	1150	724	0.23	*
17	101.0	FB56	CG12A	1140	832	0.23	*
14	121.0	FB56	CG12A	1140	874	0.20	X90556
12	144.0	FB56	CG12A	1120	1030	0.20	*
11	162.0	FB56	CG16A	1770	1147	0.20	*
9	192.0	FB56	CG16A	1760	1359	0.20	X91260
7	240.0	FB56	CG16A	1735	1608	0.19	*
6	288.0	FB56	CG16A	1700	1859	0.18	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle Gearmotors

.50 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN-LBS)	OUTPUT HP	PART NUMBER
350	5.0	FC56	WG12A	520	73	0.41	*
233	7.5	FC56	WG12A	495	107	0.40	*
175	10.0	FC56	WG12A	472	139	0.39	X91147
138	12.7	FC56	WG12A	442	181	0.39	*
117	15.0	FC56	WG12A	425	204	0.38	*
97	18.0	FC56	WG12A	395	245	0.38	X75944
87	20.0	FC56	WG16A	390	262	0.36	X91653
70	25.0	FC56	WG16A	980	327	0.36	X75906
58	30.0	FC56	WG16A	978	368	0.34	X75907
44	40.0	FC56	WG16A	968	457	0.32	X91334
35	50.0	FC56	WG16A	960	542	0.30	X75913
29	60.0	FC56	WG21A	1315	653	0.30	*
25	70.0	FC56	CG12A	1130	969	0.37	*
20	86.0	FC56	CG16A	1770	1135	0.37	*
17	101.0	FC56	CG16A	1760	1356	0.37	*
14	121.0	FC56	CG16A	1750	1454	0.33	*
12	144.0	FC56	CG16A	1740	1713	0.33	*
11	162.0	FC56	CG16A	1710	1819	0.31	*
9	192.0	FC56	CG16A	1660	2154	0.31	X90539
7	240.0	FC56	CG16A	1320	2683	0.30	*
6	288.0	FC56	CG21A	2880	3062	0.30	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle Gearmotors

.75 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN-LBS)	OUTPUT HP	PART NUMBER
350	5.0	FC56	WG12A	490	114	0.64	*
233	7.5	FC56	WG12A	450	168	0.62	*
175	10.0	FC56	WG12A	430	219	0.61	X91149
138	12.7	FC56	WG16A	920	278	0.61	*
117	15.0	FC56	WG16A	960	325	0.60	*
97	18.0	FC56	WG16A	980	377	0.58	X75949
87	20.0	FC56	WG16A	975	408	0.57	X91285
70	25.0	FC56	WG16A	965	505	0.56	X75901
58	30.0	FC56	WG16A	960	567	0.53	X75950
44	40.0	FC56	WG21A	1310	736	0.51	*
35	50.0	FC56	WG21A	1300	875	0.49	X75951
29	60.0	FC56	WG21A	1290	1004	0.47	*
25	70.0	FC56	CG16A	1740	1525	0.59	*
20	86.0	FC56	CG16A	1720	1766	0.57	*
17	101.0	FC56	CG16A	1680	2100	0.57	*
14	121.0	FC56	CG16A	2890	2395	0.55	*
12	144.0	FC56	CG16A	2880	2821	0.55	*
11	162.0	FC56	CG21A	2880	2931	0.50	*
9	192.0	FC56	CG21A	2860	3453	0.50	*
7	240.0	FC56	CG21A	2810	4104	0.48	*
6	288.0	FC56	CG21A	2690	4753	0.46	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle Gearmotors

1.0 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN--LBS)	OUTPUT HP	PART NUMBER
350	5.0	FC56	WG12A	460	156	0.87	*
233	7.5	FC56	WG12A	465	231	0.86	*
175	10.0	FC56	WG16A	810	301	0.84	*
138	12.7	FC56	WG16A	885	378	0.83	*
117	15.0	FC56	WG16A	920	441	0.82	*
97	18.0	FC56	WG16A	960	511	0.79	X80190
87	20.0	FC56	WG16A	960	554	0.77	X91291
70	25.0	FC56	WG21A	1310	710	0.79	*
58	30.0	FC56	WG21A	1307	811	0.75	X80220
44	40.0	FC56	WG21A	1292	995	0.69	X91317
35	50.0	FC56	CG16A	1740	1501	0.81	X80730
29	60.0	FC56	CG16A	1720	1768	0.81	*
25	70.0	FC56	CG16A	1680	2069	0.80	*
20	86.0	FC56	CG16A	1610	2396	0.77	*
17	101.0	FC56	CG21A	2880	2825	0.77	*
14	121.0	FC56	CG21A	2870	3244	0.74	*
12	144.0	FC56	CG21A	2840	3821	0.74	*
11	162.0	FC56	CG21A	2820	3963	0.68	*
9	192.0	FC56	CG21A	2740	4668	0.68	*
7	240.0	FC56	CG28A	5900	5555	0.65	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle Gearmotors

1.5 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN--LBS)	OUTPUT HP	PART NUMBER
350	5.0	FC145	WG16A	660	241	1.34	*
233	7.5	FC145	WG16A	720	354	1.31	*
175	10.0	FC145	WG16A	760	461	1.28	*
138	12.7	FC145	WG16A	820	577	1.26	*
117	15.0	FC145	WG21A	1315	681	1.26	*
97	18.0	FC145	WG21A	1308	818	1.26	X80280
87	20.0	FC145	WG21A	1300	898	1.25	*
70	25.0	FC145	WG21A	1290	1083	1.20	*
58	30.0	FC145	CG16A	1750	1409	1.28	X91504
48	36.0	FC145	CG16A	1730	1659	1.28	*
44	40.0	FC145	CG16A	1710	1837	1.26	*
35	50.0	FC145	CG16A	1640	2290	1.24	X91044
29	60.0	FC145	CG21A	2880	2772	1.27	*
25	70.0	FC145	CG21A	2870	3195	1.24	*
20	86.0	FC145	CG21A	2820	3834	1.24	*
17	101.0	FC145	CG21A	2780	4312	1.18	*
14	121.0	FC145	CG28A	5910	4895	1.13	*
12	144.0	FC145	CG28A	5900	5836	1.13	*
11	162.0	FC145	CG28A	5880	5932	1.03	*
9	192.0	FC145	CG28A	5830	7072	1.03	*
7	240.0	FC145	CG28A	5770	8542	1.00	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle Gearmotors

2.0 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN-LBS)	OUTPUT HP	PART NUMBER
350	5.0	FD145	WG16A	632	325	1.80	*
233	7.5	FD145	WG16A	635	479	1.78	*
175	10.0	FD145	WG21A	1130	629	1.75	*
138	12.7	FD145	WG21A	1190	798	1.75	*
117	15.0	FD145	WG21A	1270	916	1.70	*
97	18.0	FD145	WG21A	1285	1099	1.70	X90721
87	20.0	FD145	CG16A	1760	1293	1.77	*
70	25.0	FD145	CG16A	1740	1523	1.77	*
58	30.0	FD145	CG16A	1750	1909	1.74	X91509
48	36.0	FD145	CG16A	1640	2201	1.70	*
44	40.0	FD145	CG21A	2900	2502	1.71	*
35	50.0	FD145	CG21A	2870	3170	1.71	X91083
29	60.0	FD145	CG21A	2840	3734	1.71	*
25	70.0	FD145	CG21A	2790	4296	1.66	*
20	86.0	FD145	CG21A	2670	5196	1.66	*
17	101.0	FD145	CG28A	5900	5660	1.57	*
14	121.0	FD145	CG28A	5850	6631	1.54	*
12	144.0	FD145	CG28A	5800	7905	1.54	*
11	162.0	FD145	CG28A	5800	8020	1.39	*
9	192.0	FD145	CG28A	5725	9563	1.39	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle Gearmotors

3.0 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN--LBS)	OUTPUT HP	PART NUMBER
350	5.0	182	WG21A	918	496	2.75	*
233	7.5	182	WG21A	995	728	2.70	*
175	10.0	182	WG21A	1025	953	2.65	*
138	12.7	182	WG28A	2055	1202	2.63	*
117	15.0	182	WG28A	2160	1378	2.55	*
97	18.0	182	WG28A	2230	1654	2.55	*
87	20.0	182	WG28A	2240	1781	2.47	*
70	25.0	182	WG28A	2220	2200	2.44	*
58	30.0	182	CG21A	2880	2898	2.64	*
48	36.0	182	CG21A	2860	3413	2.64	X91091
44	40.0	182	CG21A	2835	3792	2.59	*
35	50.0	182	CG28A	5925	4701	2.58	*
29	60.0	182	CG28A	5900	5605	2.58	*
25	70.0	182	CG28A	5850	6641	2.58	*
20	86.0	182	CG28A	5800	7968	2.58	*
17	101.0	182	CG28A	5760	8624	2.40	*
12	144.0	182	CG40A	8850	10,963	2.19	*
11	162.0	182	CG40A	8850	12,127	2.11	*
9	192.0	182	CG40A	8800	14,022	2.11	*
7	240.0	182	CG40A	8700	16,886	2.03	*
6	288.0	182	CG40A	8550	19,567	1.96	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle Gearmotors

5.0 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN.-LBS)	OUTPUT HP	PART NUMBER
350	5.0	184	WG28A	1530	824	4.58	*
233	7.5	184	WG28A	1685	1225	4.54	*
175	10.0	184	WG28A	1790	1620	4.5	*
138	12.7	184	WG28A	1800	1955	4.28	*
117	15.0	184	CG28A	3830	2289	4.24	*
97	18.0	184	CG28A	3820	2691	4.15	*
87	20.0	184	CG21A	2860	3321	4.54	*
70	25.0	184	CG21A	2820	3912	4.54	*
58	30.0	184	CG28A	5910	4803	4.45	*
48	36.0	184	CG28A	5880	5727	4.45	*
44	40.0	184	CG28A	5860	6314	4.39	*
35	50.0	184	CG28A	5800	7955	4.36	*
29	60.0	184	CG28A	5720	9484	4.36	*
25	70.0	184	CG28A	5800	10,469	4.15	*
20	86.0	184	CG40A	8840	12,163	4.07	*
17	101.0	184	CG40A	8760	14,387	3.96	*
14	121.0	184	CG40A	8700	16,323	3.78	*
12	144.0	184	CG40A	8550	18,908	3.78	*
11	162.0	184	CG40A	8400	20,820	3.62	*
9	192.0	184	CG40A	8200	24,073	3.62	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Right Angle Gearmotors
7.5 HP

OUTPUT RPM	RATIO	MOTOR FRAME	GEARCASE SIZE	OUTPUT OHL (LBS)	OUTPUT TORQUE (IN--LBS)	OUTPUT HP	PART NUMBER
350	5.0	213	WG40A	3100	1224	6.80	*
233	7.5	213	WG40A	3450	1820	6.74	*
175	10.0	213	CG28A	5400	2407	6.69	*
138	12.7	213	CG28A	5820	2996	6.55	*
117	15.0	213	CG28A	5800	3504	6.49	*
97	18.0	213	CG28A	5800	4117	6.35	*
87	20.0	213	CG28A	5920	4888	6.79	*
70	25.0	213	CG28A	5880	5827	6.79	*
58	30.0	213	CG28A	5820	7264	6.73	*
48	36.0	213	CG28A	5760	8661	6.73	*
35	50.0	213	CG40A	8850	11,789	6.42	*
25	70.0	213	CG40A	8700	16,025	6.36	*
20	86.0	213	CG40A	8590	18,605	6.23	*
17	101.0	213	CG40A	8350	21,959	6.04	*

MOTOR INFO: TE 1750 RPM, 3 PHASE, 60 HZ 230/460 VOLTS, PREMIUM EFFICIENT
Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

* Made to Order

XL Parallel C-Face Reducers

SINGLE REDUCTION SIZE 16

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
2.25	2.22	Output RPM	1111	778	516	267	56C	M60425
		Max Input HP	6.54	4.77	3.31	1.81	56C	
		Output Torque (in-lb)	363	378	396	418	140TC	M60428
		Max. Output HP	6.40	4.67	3.24	1.77	140TC	
		OHL Output Shaft	239	229	210	194	140TC	
2.75	2.78	Output RPM	909	636	422	218	56C	M94866
		Max Input HP	5.10	3.72	2.59	1.40	56C	
		Output Torque (in-lb)	347	361	379	396	140TC	
		Max. Output HP	5.00	3.64	2.54	1.37	140TC	
		OHL Output Shaft	253	245	229	217	140TC	
3.37	3.35	Output RPM	742	519	344	178	56C	M60427
		Max Input HP	4.03	3.00	2.04	1.11	56C	M60427
		Output Torque (in-lb)	336	351	366	386	140TC	M60430
		Max. Output HP	3.95	2.89	2.00	1.09	140TC	
		OHL Output Shaft	260	252	246	228	140TC	
4.13	4.12	Output RPM	605	424	281	145	56C	M94513
		Max Input HP	3.06	2.23	1.54	0.84	56C	
		Output Torque (in-lb)	313	324	339	356	140TC	
		Max. Output HP	3.00	2.18	1.51	0.82	140TC	
		OHL Output Shaft	269	264	259	250	140TC	
5.06	5.21	Output RPM	494	346	229	119	56C	M94842
		Max Input HP	2.15	1.57	1.08	0.58	56C	
		Output Torque (in-lb)	269	281	292	302	140TC	
		Max. Output HP	2.11	1.54	1.06	0.57	140TC	
		OHL Output Shaft	285	282	278	273	140TC	
6.20	6.25	Output RPM	403	282	187	97	56C	M94662
		Max Input HP	1.61	1.17	0.80	0.43	56C	
		Output Torque (in-lb)	247	257	264	277	140TC	
		Max. Output HP	1.58	1.15	0.78	0.42	140TC	
		OHL Output Shaft	292	288	288	283	140TC	

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel C-Face Reducers

DOUBLE REDUCTION SIZE 16

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
5.06	5.06	Output RPM	494	346	229	119	56C	M61189
		Max Input HP	6.51	4.65	3.19	1.72		
		Output Torque (in-lb)	797	813	843	874	140TC	M61191
		Max. Output HP	6.25	4.46	3.06	1.65		
		OHL Output Shaft	542	619	718	908		
6.20	6.22	Output RPM	403	282	187	97	56C	M61190
		Max Input HP	5.35	3.88	2.66	1.43		
		Output Torque (in-lb)	805	835	865	901	140TC	M61192
		Max. Output HP	5.14	3.72	2.55	1.37		
		OHL Output Shaft	586	666	772	976		
7.60	7.35	Output RPM	329	230	153	79	56C	M60431
		Max Input HP	5.81	4.52	3.37	1.79		
		Output Torque (in-lb)	1068	1187	1335	1371	140TC	M60436
		Max. Output HP	5.59	4.34	3.24	1.72		
		OHL Output Shaft	444	495	562	738		
9.30	9.04	Output RPM	269	188	125	65	56C	M94871
		Max Input HP	5.00	3.89	2.75	1.50		
		Output Torque (in-lb)	1123	1250	1333	1369	140TC	M94852
		Max. Output HP	4.79	3.73	2.64	1.40		
		OHL Output Shaft	475	528	614	803		
11.40	11.32	Output RPM	219	154	102	53	56C	M94852
		Max Input HP	4.23	3.29	2.26	1.22		
		Output Torque (in-lb)	1167	1296	1343	1402	140TC	M60433
		Max. Output HP	4.06	3.16	2.17	1.17		
		OHL Output Shaft	510	568	669	865		
14.00	13.62	Output RPM	179	125	83	43	56C	M60433
		Max Input HP	3.70	2.75	1.87	1.02		
		Output Torque (in-lb)	1253	1331	1365	1439	140TC	M60439
		Max. Output HP	3.55	2.64	1.80	0.98		
		OHL Output Shaft	540	615	725	930		
17.10	18.05	Output RPM	146	102	68	35	56C	M94822
		Max Input HP	2.74	2.00	1.37	0.74		
		Output Torque (in-lb)	1134	1182	1221	1276	140TC	M60434
		Max. Output HP	2.63	1.92	1.31	0.71		
		OHL Output Shaft	615	702	817	1042		
20.90	21.50	Output RPM	120	84	56	29	56C	M60434
		Max Input HP	2.26	1.58	1.05	0.54		
		Output Torque (in-lb)	1143	1141	1144	1140	140TC	M60440
		Max. Output HP	2.17	1.52	1.09	0.52		
		OHL Output Shaft	672	774	906	1156		
25.60	25.27	Output RPM	98	68	45	23	56C	M94516
		Max Input HP	1.93	1.36	0.90	0.46		
		Output Torque (in-lb)	1195	1203	1199	1184	140TC	M60435
		Max. Output HP	1.85	1.31	0.86	0.44		
		OHL Output Shaft	718	825	967	1239		
31.40	30.29	Output RPM	80	56	37	19	56C	M60435
		Max Input HP	1.61	1.13	0.76	0.39		
		Output Torque (in-lb)	1223	1226	1236	1228	140TC	M60441
		Max. Output HP	1.54	1.08	0.73	0.37		
		OHL Output Shaft	773	888	1166	1320		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel C-Face Reducers

TRIPLE REDUCTION SIZE 16

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
20.90	20.55	Output RPM	122	85	56	29	56C	M61193
		Max Input HP	5.57	3.97	2.75	1.49		
		Output Torque (in-lb)	2705	2767	2909	3044	140TC	M61196
		Max. Output HP	5.24	3.73	2.59	1.40		
		OHL Output Shaft	1422	1627	1883	1940		
25.60	25.28	Output RPM	97.7	68	45	23	56C	M61194
		Max Input HP	4.57	3.30	2.24	1.21		
		Output Torque (in-lb)	2735	2833	2885	2987	140TC	M61197
		Max. Output HP	4.30	3.10	2.11	1.14		
		OHL Output Shaft	1539	1751	1965	1949		
31.40	31.65	Output RPM	79.6	56	37	19	56C	M61195
		Max Input HP	3.69	2.70	1.84	0.97		
		Output Torque (in-lb)	2767	2908	2946	3024	140TC	M61198
		Max. Output HP	3.47	2.54	1.73	0.91		
		OHL Output Shaft	1674	1896	1956	1943		
38.50	38.76	Output RPM	64.9	45	30	16	56C	M94824
		Max Input HP	3.80	2.65	1.76	0.92		
		Output Torque (in-lb)	3466	3453	3459	3481	140TC	
		Max. Output HP	3.57	2.49	1.65	0.86		
		OHL Output Shaft	1238	1451	1722	1881		
47.10	45.97	Output RPM	53.1	37	25	12.7	56C	M60442
		Max Input HP	3.21	2.25	1.50	0.77		
		Output Torque (in-lb)	3581	3586	3607	3580	140TC	M60448
		Max. Output HP	3.02	2.12	1.41	0.72		
		OHL Output Shaft	1334	1557	1837	1814		
57.70	59.13	Output RPM	43.4	30	20	10.4	56C	M94900
		Max Input HP	2.50	1.74	1.15	0.60		
		Output Torque (in-lb)	3417	3398	3388	3440	140TC	
		Max. Output HP	2.35	1.64	1.08	0.57		
		OHL Output Shaft	1488	1729	1881	1879		
70.60	68.03	Output RPM	35.4	25	16.4	8.5	56C	M60444
		Max Input HP	2.16	1.51	1.01	0.52		
		Output Torque (in-lb)	3612	3608	3640	3630	140TC	M60450
		Max. Output HP	2.03	1.42	0.95	0.49		
		OHL Output Shaft	1584	1829	1811	1812		
86.50	86.14	Output RPM	28.9	20	13.4	6.9	56C	M60445
		Max Input HP	1.71	1.20	0.79	0.41		
		Output Torque (in-lb)	3504	3513	3493	3466	140TC	M60451
		Max. Output HP	1.61	1.13	0.74	0.38		
		OHL Output Shaft	1743	1837	1868	1867		
105.90	102.66	Output RPM	23.6	16.5	11.0	5.7	56C	M60446
		Max Input HP	1.50	1.02	0.68	0.34		
		Output Torque (in-lb)	3637	3655	3660	3596	140TC	M60452
		Max. Output HP	1.36	0.96	0.64	0.32		
		OHL Output Shaft	1800	1798	1798	1845		
129.70	123.05	Output RPM	19.3	13.5	8.9	4.6	56C	M60447
		Max Input HP	1.21	0.84	0.56	0.29		
		Output Torque (in-lb)	3718	3700	3721	3725	140TC	M60453
		Max. Output HP	1.14	0.79	0.53	0.27		
		OHL Output Shaft	1779	1789	1789	1771		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel C-Face Reducer

SINGLE REDUCTION SIZE 21

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
2.25	2.30	Output RPM	1111	778	516	267	140TC	M60460
		Max Input HP	10.30	8.19	6.20	3.45		
		Output Torque (in-lb)	572	650	740	796	180TC	M60464
		Max. Output HP	10.09	8.03	6.07	3.38		
		OHL Output Shaft	500	552	623	728	210TC	M60454
2.75	2.81	Output RPM	909	636	422	218	140TC	M60461
		Max Input HP	9.07	7.05	5.00	2.72		
		Output Torque (in-lb)	616	683	712	768	180TC	M60465
		Max. Output HP	8.89	6.90	4.77	2.66		
		OHL Output Shaft	536	596	686	736	210TC	M60455
3.37	3.50	Output RPM	742	519	344	178	140TC	M60462
		Max Input HP	7.60	5.33	3.71	2.06		
		Output Torque (in-lb)	633	635	665	715	180TC	M60466
		Max. Output HP	7.45	5.23	3.64	2.02		
		OHL Output Shaft	577	653	745	750	210TC	M60456
4.13	4.21	Output RPM	605	424	281	145	140TC	M60463
		Max Input HP	5.86	4.10	3.00	1.57		
		Output Torque (in-lb)	600	600	625	670	180TC	M94828
		Max. Output HP	5.75	4.02	2.78	1.54		
		OHL Output Shaft	628	710	768	760	210TC	M60457
5.06	4.82	Output RPM	494	346	229	119	140TC	M94843
		Max Input HP	4.66	3.26	2.26	1.25		
		Output Torque (in-lb)	583	583	610	650	180TC	M94844
		Max. Output HP	4.57	3.20	2.22	1.23		
		OHL Output Shaft	677	762	772	765	210TC	M60458
6.20	6.07	Output RPM	403	282	187	97	140TC	M94813
		Max Input HP	3.33	2.42	1.66	0.90		
		Output Torque (in-lb)	510	529	548	573	180TC	M60467
		Max. Output HP	3.26	2.37	1.63	0.88		
		OHL Output Shaft	738	785	785	779	210TC	M60459

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel C-Face Reducers

DOUBLE REDUCTION SIZE 21

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
5.06	5.11	Output RPM	494	346	229	119	140TC	M60468
		Max Input HP	11.70	9.40	7.30	4.80	180TC	M60476
		Output Torque (in-lb)	1443	1625	1920	2440		
		Max. Output HP	11.20	9.02	7.00	4.61		
		OHL Output Shaft	871	957	1066	1273	210TC	M60484
6.20	6.10	Output RPM	403	282	187	97	140TC	M60469
		Max Input HP	10.70	8.47	6.43	3.96	180TC	M94814
		Output Torque (in-lb)	1605	1815	2079	2475		
		Max. Output HP	10.30	8.13	6.17	3.80		
		OHL Output Shaft	905	1000	1125	1385	210TC	M94815
7.60	7.43	Output RPM	329	230	153	79	140TC	M60470
		Max Input HP	10.70	8.40	5.70	3.10	180TC	M94869
		Output Torque (in-lb)	2103	2359	2415	2539		
		Max. Output HP	10.30	8.06	5.47	2.98		
		OHL Output Shaft	918	1018	1209	1564	210TC	M60485
9.30	9.34	Output RPM	269	188	125	65	140TC	M60471
		Max Input HP	10.00	7.65	5.20	2.75	180TC	M94872
		Output Torque (in-lb)	2205	2459	2521	2578		
		Max. Output HP	9.41	7.34	4.99	2.64		
		OHL Output Shaft	948	1054	1255	1648	210TC	M60486
11.40	11.41	Output RPM	2191	154	102	53	140TC	M60479
		Max Input HP	8.60	6.32	4.28	2.24	180TC	M94853
		Output Torque (in-lb)	2372	2490	2544	2574		
		Max. Output HP	8.26	6.07	4.11	2.15		
		OHL Output Shaft	1000	1151	1367	1791	210TC	M60487
14.00	14.22	Output RPM	179	125	83	43	140TC	M60472
		Max Input HP	7.24	5.10	3.52	1.87	180TC	M60480
		Output Torque (in-lb)	2452	2468	2569	2639		
		Max. Output HP	6.95	4.90	3.38	1.80		
		OHL Output Shaft	1080	1267	1486	1929	210TC	M60488
17.10	17.11	Output RPM	146	102	68	35	140TC	M60473
		Max Input HP	5.86	4.10	3.00	1.53	180TC	M94831
		Output Torque (in-lb)	2424	2423	2532	2637		
		Max. Output HP	5.63	3.94	2.73	1.47		
		OHL Output Shaft	1192	1394	1626	2089	210TC	M60489
20.90	22.02	Output RPM	120	84	56	29	140TC	M60474
		Max Input HP	4.08	3.00	2.00	1.02	180TC	M60481
		Output Torque (in-lb)	2063	2102	2136	2149		
		Max. Output HP	3.92	2.79	1.88	0.98		
		OHL Output Shaft	1404	1607	1873	2385	210TC	M60490
25.60	25.23	Output RPM	98	68	45	23	140TC	M94517
		Max Input HP	3.37	2.40	1.61	0.84	180TC	M60482
		Output Torque (in-lb)	2087	2123	2149	2160		
		Max. Output HP	3.24	2.30	1.55	0.80		
		OHL Output Shaft	1517	1735	2022	2484	210TC	M60491
31.40	31.76	Output RPM	80	56	37	19	140TC	M60475
		Max Input HP	2.75	2.00	1.29	0.67	180TC	M60483
		Output Torque (in-lb)	2089	2105	2112	2130		
		Max. Output HP	2.64	1.86	1.24	0.65		
		OHL Output Shaft	1642	1878	2187	2499	210TC	M60492

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel C-Face Reducer

TRIPLE REDUCTION SIZE 21

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
20.90	20.76	Output RPM	122	85	56	29	140TC	M61209
		Max Input HP	11.70	9.40	7.30	4.08		
		Output Torque (in-lb)	5776	6629	7222	8334	180TC	M61210
		Max. Output HP	11.00	8.84	6.86	3.84		
		OHL Output Shaft	3494	3867	4341	4590	210TC	M61216
25.60	24.78	Output RPM	97.7	68	45	23	140TC	M61211
		Max Input HP	10.70	8.47	6.34	3.48		
		Output Torque (in-lb)	6276	7067	7991	8590	180TC	M61212
		Max. Output HP	10.06	7.96	5.96	3.27		
		OHL Output Shaft	3658	4056	4592	4561	210TC	M61213
31.40	33.01	Output RPM	79.6	56	37	19	140TC	M61199
		Max Input HP	9.97	7.15	4.89	2.68		
		Output Torque (in-lb)	7771	7992	8277	8820	180TC	M61201
		Max. Output HP	9.37	6.72	4.60	2.52		
		OHL Output Shaft	3882	4398	4596	4534	210TC	M61214
38.50	37.96	Output RPM	64.9	45	30	16	140TC	M61100
		Max Input HP	8.50	6.60	5.00	2.71		
		Output Torque (in-lb)	7752	8599	9729	10298	180TC	M94833
		Max. Output HP	7.99	6.20	4.65	2.55		
		OHL Output Shaft	3218	3589	4057	4384	210TC	M61113
47.10	46.34	Output RPM	53.1	37	25	12.7	140TC	M61101
		Max Input HP	7.50	5.74	4.18	2.19		
		Output Torque (in-lb)	8234	9149	10051	10181	180TC	M61107
		Max. Output HP	6.94	5.40	3.93	2.06		
		OHL Output Shaft	3419	3808	4331	4349	210TC	M61114
57.70	57.76	Output RPM	43.4	30	20	10.4	140TC	M94901
		Max Input HP	6.33	5.00	3.42	1.78		
		Output Torque (in-lb)	8652	9607	10074	10137	180TC	M61108
		Max. Output HP	5.95	4.63	3.22	1.67		
		OHL Output Shaft	3648	4064	4371	4370	210TC	M61115
70.60	69.49	Output RPM	35.4	25	16.4	8.5	140TC	M61103
		Max Input HP	5.56	4.10	2.84	1.50		
		Output Torque (in-lb)	9298	9795	10236	10174	180TC	M61109
		Max. Output HP	5.23	3.85	2.67	1.37		
		OHL Output Shaft	3859	4351	4362	4365	210TC	M61116
86.50	89.47	Output RPM	28.9	20	13.4	6.9	140TC	M61200
		Max Input HP	3.66	2.60	1.80	0.97		
		Output Torque (in-lb)	7743	7858	8202	8576	180TC	M61202
		Max. Output HP	3.44	2.44	1.69	0.91		
		OHL Output Shaft	4655	4642	4605	4562	210TC	M61215
105.90	102.50	Output RPM	23.6	16.5	11.0	5.7	140TC	M61105
		Max Input HP	3.37	2.45	1.63	0.88		
		Output Torque (in-lb)	8454	8780	8812	9198	180TC	M61111
		Max. Output HP	3.17	2.30	1.53	0.83		
		OHL Output Shaft	4571	4536	4539	4495	210TC	M61118
129.70	129.02	Output RPM	19.3	13.5	8.9	4.6	140TC	M61106
		Max Input HP	2.75	2.00	1.33	0.75		
		Output Torque (in-lb)	8449	8515	8807	9140	180TC	M61112
		Max. Output HP	2.59	1.82	1.25	0.67		
		OHL Output Shaft	4578	4569	4541	4495	210TC	M61119

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel C-Face Reducers

SINGLE REDUCTION SIZE 28

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
2.25	2.22	Output RPM	1111	778	516	267	180TC	M61126
		Max Input HP	23.50	18.60	14.20	8.57	210TC	M61132
		Output Torque (in-lb)	1306	1477	1701	1984		
		Max. Output HP	23.03	18.23	13.92	8.40		
		OHL Output Shaft	758	840	948	1166		
2.75	2.68	Output RPM	909	636	422	218	180TC	M61127
		Max Input HP	20.80	16.50	12.60	6.98	210TC	M61133
		Output Torque (in-lb)	1413	1601	1844	1975		
		Max. Output HP	20.38	16.17	12.35	6.84		
		OHL Output Shaft	809	895	1009	1269		
3.37	3.48	Output RPM	742	519	344	178	180TC	M61128
		Max Input HP	17.40	13.20	9.15	5.04	210TC	M61134
		Output Torque (in-lb)	1448	1569	1641	1748		
		Max. Output HP	17.05	12.94	8.97	4.94		
		OHL Output Shaft	875	980	1124	1408		
4.13	4.15	Output RPM	605	424	281	145	180TC	M61129
		Max Input HP	14.10	10.40	7.50	4.00	210TC	M61135
		Output Torque (in-lb)	1438	1515	1600	1700		
		Max. Output HP	13.82	10.19	7.13	3.92		
		OHL Output Shaft	948	1068	1223	1524		
5.06	5.06	Output RPM	494	346	229	119	180TC	M61130
		Max Input HP	10.70	7.83	5.44	3.00	210TC	M94845
		Output Torque (in-lb)	1337	1398	1465	1562		
		Max. Output HP	10.49	7.67	5.33	2.94		
		OHL Output Shaft	1037	1164	1334	1655		
6.20	6.36	Output RPM	403	282	187	97	180TC	M61131
		Max Input HP	7.52	5.49	3.80	2.09	210TC	M61136
		Output Torque (in-lb)	1151	1201	1254	1333		
		Max. Output HP	7.37	5.38	3.72	2.05		
		OHL Output Shaft	1141	1283	1457	1749		

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel C-Face Reducers

DOUBLE REDUCTION SIZE 28

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
5.06	5.01	Output RPM	494	346	229	119	140TC	M61203
		Max Input HP	29.80	23.50	17.90	11.50	180TC	M61204
		Output Torque (in-lb)	3613	4062	4668	5798		
		Max. Output HP	28.60	22.50	17.10	11.00		
		OHL Output Shaft	1609	1785	2013	2387	210TC	M61205
6.20	6.19	Output RPM	403	282	187	97	140TC	M61138
		Max Input HP	26.40	20.80	15.80	10.00	180TC	M61148
		Output Torque (in-lb)	3993	4494	5031	6019		
		Max. Output HP	25.30	19.90	15.20	9.26		
		OHL Output Shaft	1710	1898	2134	2321	210TC	M61156
7.60	7.56	Output RPM	329	230	153	79	140TC	M61139
		Max Input HP	23.20	18.40	14.00	8.16	180TC	M61149
		Output Torque (in-lb)	4266	4833	5548	6251		
		Max. Output HP	22.30	17.70	13.44	7.83		
		OHL Output Shaft	1828	2026	2280	2256	210TC	M61157
9.30	9.01	Output RPM	269	188	125	65	140TC	M61140
		Max Input HP	20.90	16.60	12.60	6.84	180TC	M61150
		Output Torque (in-lb)	4702	5335	6110	6412		
		Max. Output HP	20.10	15.90	12.10	6.57		
		OHL Output Shaft	1925	2131	2310	2213	210TC	M61158
11.40	10.88	Output RPM	219	154	102	53	140TC	M61141
		Max Input HP	18.50	15.00	10.50	5.61	180TC	M61151
		Output Torque (in-lb)	5102	5752	6241	6447		
		Max. Output HP	17.80	14.02	10.08	5.39		
		OHL Output Shaft	2037	2258	2218	2199	210TC	M94854
14.00	14.13	Output RPM	179	125	83	43	140TC	M61142
		Max Input HP	15.50	12.30	8.67	4.59	180TC	M61152
		Output Torque (in-lb)	5250	5951	6329	6477		
		Max. Output HP	14.88	11.81	8.32	4.41		
		OHL Output Shaft	2184	2360	2258	2179	210TC	M61159
17.10	17.96	Output RPM	146	102	68	35	140TC	M61143
		Max Input HP	12.90	10.00	6.61	3.64	180TC	M61153
		Output Torque (in-lb)	5337	5638	5893	6274		
		Max. Output HP	12.38	9.16	6.35	3.49		
		OHL Output Shaft	2341	2420	2384	2241	210TC	M94847
20.90	21.16	Output RPM	120	84	56	29	140TC	M61144
		Max Input HP	10.40	7.75	5.20	2.81	180TC	M61154
		Output Torque (in-lb)	5258	5598	5666	5920		
		Max. Output HP	9.98	7.44	4.99	2.70		
		OHL Output Shaft	2529	2471	2464	2398	210TC	M61160
25.60	26.02	Output RPM	98	68	45	23	140TC	M61145
		Max Input HP	8.98	6.33	4.28	2.35	180TC	M94518
		Output Torque (in-lb)	5561	5600	5713	6064		
		Max. Output HP	8.62	6.08	4.11	2.26		
		OHL Output Shaft	2477	2462	2433	2288	210TC	M61161
31.40	30.42	Output RPM	80	56	37	19	140TC	M61146
		Max Input HP	7.50	5.31	3.67	2.00	180TC	M61155
		Output Torque (in-lb)	5583	5762	6008	6140		
		Max. Output HP	7.06	5.10	3.52	1.86		
		OHL Output Shaft	2475	2439	2351	2290	210TC	M61162

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel C-Face Reducers

TRIPLE REDUCTION SIZE 28

AGMA Nominal Ratio	Exact Ratio	Rating Data	Input RPM				Frame Size	Model Number
			2500	1750	1160	600		
20.90	20.02	Output RPM	122	85	56	29	140TC	M61236
		Max Input HP	24.80	23.50	17.90	9.95	180TC	M61237
		Output Torque (in-lb)	14123	16001	18282	19648		
		Max. Output HP	28.00	22.10	16.83	9.35		
		OHL Output Shaft	4841	5377	6057	7577	210TC	M61238
25.60	24.76	Output RPM	97.7	68	45	23	140TC	M61163
		Max Input HP	26.40	20.80	15.80	10.00	180TC	M61172
		Output Torque (in-lb)	15475	17383	19888	23600		
		Max. Output HP	24.80	19.50	14.80	9.00		
		OHL Output Shaft	5635	6265	7068	8689	210TC	M61181
31.40	31.13	Output RPM	79.6	56	37	19	140TC	M61164
		Max Input HP	20.00	15.10	11.50	7.50	180TC	M61173
		Output Torque (in-lb)	14281	16045	18435	22748		
		Max. Output HP	10.04	14.20	10.81	6.90		
		OHL Output Shaft	6197	6886	7773	9424	210TC	M61182
38.50	39.54	Output RPM	64.9	45	30	16	140TC	M61165
		Max Input HP	20.00	15.60	11.90	6.53	180TC	M61174
		Output Torque (in-lb)	18057	20324	23389	24814		
		Max. Output HP	18.60	14.70	11.19	6.14		
		OHL Output Shaft	6374	7088	7982	9299	210TC	M94848
47.10	46.58	Output RPM	53.1	37	25	12.7	140TC	M61206
		Max Input HP	15.37	11.14	7.64	4.17	180TC	M61207
		Output Torque (in-lb)	16861	17551	18103	18774		
		Max. Output HP	14.50	10.47	7.18	3.87		
		OHL Output Shaft	6323	7141	8200	8548	210TC	M61208
57.70	56.52	Output RPM	43.4	30	20	10.4	140TC	M61167
		Max Input HP	15.00	11.70	7.96	4.28	180TC	M61176
		Output Torque (in-lb)	20365	22845	23448	24375		
		Max. Output HP	14.00	11.00	7.48	4.02		
		OHL Output Shaft	7208	8012	9239	9279	210TC	M61184
70.60	71.84	Output RPM	35.4	25	16.4	8.5	140TC	M61168
		Max Input HP	12.90	10.00	6.61	3.63	180TC	M61177
		Output Torque (in-lb)	21574	22792	23824	25295		
		Max. Output HP	12.13	8.97	6.21	3.41		
		OHL Output Shaft	7651	8599	9342	9186	210TC	M61185
86.50	88.36	Output RPM	28.9	20	13.4	6.9	140TC	M61169
		Max Input HP	9.62	7.02	5.00	2.69	180TC	M61178
		Output Torque (in-lb)	19712	20549	21550	22966		
		Max. Output HP	9.04	6.60	4.59	2.53		
		OHL Output Shaft	8374	9451	9560	9435	210TC	M61186
105.90	104.09	Output RPM	23.6	16.5	11.0	5.7	140TC	M61170
		Max Input HP	8.67	6.33	4.28	2.35	180TC	M61179
		Output Torque (in-lb)	21749	22685	23139	24563		
		Max. Output HP	8.15	5.95	4.02	2.21		
		OHL Output Shaft	8849	9439	9408	9278	210TC	M61187
129.70	121.69	Output RPM	19.3	13.5	8.9	4.6	140TC	M61171
		Max Input HP	7.52	5.49	3.67	2.00	180TC	M61180
		Output Torque (in-lb)	23104	24096	24300	25475		
		Max. Output HP	7.07	5.16	3.45	1.87		
		OHL Output Shaft	9396	9307	9301	9152	210TC	M61188

Output shaft OHL in pounds at one shaft diameter from shaft shoulder.

XL Parallel Gearmotors - 1/3 HP

AGMA CLASS I THROUGH AGMA CLASS III

Rated Output		Output Torque (in-lb)	TENV Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
230	728	88	56	DG16A	7.6
190	768	106	56	DG16A	9.3
155	812	130	56	DG16A	11.4
125	862	161	56	DG16A	14.0
100	916	201	56	DG16A	17.1
84	960	240	56	DG16A	20.9
68	1014	296	56	DG16A	25.6
56	1066	360	56	DG16A	31.4
46	1964	438	56	TG16A	38.5
37	2072	533	56	TG16A	47.1
30	2192	658	56	TG16A	57.7
25	2191	789	56	TG16A	70.6
20	2177	986	56	TG16A	86.5
17	2161	1196	56	TG16A	105.9
13	2138	1461	56	TG16A	129.7

Ratings apply to both single phase and three phase integral gearmotors.

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

XL Parallel Gearmotors - 1/2 HP

AGMA CLASS I THROUGH AGMA CLASS III

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	324	40	56	SG16A	2.25
640	323	48	56	SG16A	2.75
520	323	59	56	SG16A	3.37
420	321	74	56	SG16A	4.13
350	320	88	56	SG16A	5.06
280	319	110	56	SG16A	6.2
230	719	132	56	DG16A	7.6
190	757	159	56	DG16A	9.3
155	799	195	56	DG16A	11.4
125	845	242	56	DG16A	14.0
100	894	303	56	DG16A	17.1
84	935	360	56	DG16A	20.9
68	984	445	56	DG16A	25.6
56	1029	540	56	DG16A	31.4
46	1929	658	56	TG16A	38.5
37	2029	801	56	TG16A	47.1
30	2139	987	56	TG16A	57.7
25	2162	1185	56	TG16A	70.6
20	2136	1481	56	TG16A	86.5
17	2104	1795	56	TG16A	105.9
13	2059	2194	56	TG16A	129.7

Ratings apply to both single phase and three phase integral gearmotors.

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

XL Parallel Gearmotors - 3/4 HP

AGMA CLASS I THROUGH AGMA CLASS III

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	322	59	56	SG16A	2.25
640	321	72	56	SG16A	2.75
520	320	89	56	SG16A	3.37
420	318	110	56	SG16A	4.13
350	315	132	56	SG16A	5.06
280	311	165	56	SG16A	6.2
230	705	197	56	DG16A	7.6
190	740	239	56	DG16A	9.3
155	778	293	56	DG16A	11.4
125	819	363	56	DG16A	14.0
100	862	454	56	DG16A	17.1
84	898	540	56	DG16A	20.9
68	938	667	56	DG16A	25.6
56	973	810	56	DG16A	31.4
46	1875	987	56	TG16A	38.5
37	1964	1201	56	TG16A	47.1
30	2058	1481	56	TG16A	57.7
25	2106	1777	56	TG16A	70.6
20	2055	2222	56	TG16A	86.5
17	1993	2693	56	TG16A	105.9
13	1901	3291	56	TG16A	129.7

Ratings apply to both single phase and three phase integral gearmotors.

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

XL Parallel Gearmotors - 1 HP

AGMA CLASS I

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL (1)				
780	320	79	56	SG16A	2.25
640	319	97	56	SG16A	2.75
520	316	119	56	SG16A	3.37
420	313	147	56	SG16A	4.13
350	309	176	56	SG16A	5.06
280	299	221	56	SG16A	6.2
230	691	263	56	DG16A	7.6
190	723	318	56	DG16A	9.3
155	758	390	56	DG16A	11.4
125	794	484	56	DG16A	14.0
100	830	605	56	DG16A	17.1
84	861	720	56	DG16A	20.9
68	892	890	56	DG16A	25.6
56	917	1080	56	DG16A	31.4
46	1822	1316	56	TG16A	38.5
37	1898	1601	56	TG16A	47.1
30	1977	1975	56	TG16A	57.7
25	2037	2370	56	TG16A	70.6
20	1953	2962	56	TG16A	86.5
17	1824	3590	56	TG16A	105.9
13	4810	4388	56	TG21A	129.7

AGMA CLASS II

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL (1)				
780	318	79	140	SG16A2	2.25
640	314	97	140	SG16A2	2.75
520	310	119	140	SG16A2	3.37
420	302	147	140	SG16A2	4.13
350	292	176	140	SG16A2	5.06
280	818	221	140	SG21A2	6.2
230	809	263	140	DG16A2	7.6
190	697	318	140	DG16A2	9.3
155	725	390	140	DG16A2	11.4
125	755	484	140	DG16A2	14.0
100	780	605	140	DG16A2	17.1
84	800	720	140	DG16A2	20.9
68	1935	890	140	DG21A2	25.6
56	2010	1080	140	DG21A2	31.4
46	1727	1316	140	TG16A2	38.5
37	1785	1601	140	TG16A2	47.1
30	1837	1975	140	TG16A2	57.7
25	1880	2370	140	TG16A2	70.6
20	4975	2962	140	TG21A2	86.5
17	4905	3590	140	TG21A2	105.9
13	4810	4388	140	TG21A2	129.7

AGMA CLASS III

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL (1)				
780	310	79	140	SG16A3	2.25
640	304	97	140	SG16A3	2.75
520	292	119	140	SG16A3	3.37
420	275	147	140	SG16A3	4.13
350	797	176	140	SG21A3	5.06
280	800	221	140	SG21A3	6.2
230	784	263	140	DG16A3	7.6
190	656	318	140	DG16A3	9.3
155	675	390	140	DG16A3	11.4
125	688	484	140	DG16A3	14.0
100	702	605	140	DG16A3	17.1
84	1758	720	140	DG21A3	20.9
68	1817	890	140	DG21A3	25.6
56	1987	1080	140	DG21A3	31.4
46	1601	1316	140	TG16A3	38.5
37	1628	1601	140	TG16A3	47.1
30	4689	1975	140	TG21A3	57.7
25	4891	2370	140	TG21A3	70.6
20	4802	2962	140	TG21A3	86.5
17	4714	3590	140	TG21A3	105.9
13	4540	4388	140	TG21A3	129.7

Ratings apply to both single phase and three phase integral gearmotors.

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

XL Parallel Gearmotors - 1-1/2 HP

AGMA CLASS I

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	316	119	140	SG16A	2.25
640	313	145	140	SG16A	2.75
520	308	178	140	SG16A	3.37
420	298	221	140	SG16A	4.13
350	286	265	140	SG16A	5.06
280	815	331	140	SG21A	6.2
230	663	395	140	DG16A	7.6
190	689	478	140	DG16A	9.3
155	716	585	140	DG16A	11.4
125	743	726	140	DG16A	14.0
100	766	907	140	DG16A	17.1
84	786	1080	140	DG16A	20.9
68	1918	1335	140	DG21A	25.6
56	1987	1621	140	DG21A	31.4
46	1713	1975	140	TG16A	38.5
37	1765	2402	140	TG16A	47.1
30	1811	2962	140	TG16A	57.7
25	1837	3554	140	TG16A	70.6
20	4950	4442	140	TG21A	86.5
17	4880	5385	140	TG21A	105.9
14	4773	6582	140	TG21A	129.7
11	4618	8078	182T ⁽²⁾	TG21A	105.9
9	10404	9873	182T ⁽²⁾	TG28A	129.7

AGMA CLASS II

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	308	119	140	SG16A2	2.25
640	302	145	140	SG16A2	2.75
520	288	178	140	SG16A2	3.37
420	270	221	140	SG16A2	4.13
350	793	265	140	SG21A2	5.06
280	797	331	140	SG21A2	6.2
230	630	395	140	DG16A2	7.6
190	650	478	140	DG16A2	9.3
155	667	585	140	DG16A2	11.4
125	682	726	140	DG16A2	14.0
100	1680	907	140	DG21A2	17.1
84	1740	1080	140	DG21A2	20.9
68	1790	1335	140	DG21A2	25.6
56	2005	1616	140	TG16A2	31.4
46	2018	1975	140	TG16A2	38.5
37	2032	2402	140	TG16A2	47.1
30	4665	2962	140	TG21A2	57.7
25	4862	3554	140	TG21A2	70.6
20	4785	4442	140	TG21A2	86.5
17	4670	5385	140	TG21A2	105.9
14	10440	6582	140	TG28A2	129.7
11	10321	8078	182T ⁽²⁾	TG28A2	105.9
9	10160	9873	182T ⁽²⁾	TG28A2	129.7

AGMA CLASS III

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	289	119	140	SG16A3	2.25
640	275	145	140	SG16A3	2.75
520	698	178	140	SG16A3	3.37
420	736	221	140	SG21A3	4.13
350	769	265	140	SG21A3	5.06
280	540	324	140	DG16A3	6.2
230	560	395	140	DG16A3	7.6
190	580	478	140	DG16A3	9.3
155	587	585	140	DG16A3	11.4
125	1510	726	140	DG21A3	14.0
100	1550	907	140	DG21A3	17.1
84	1600	1080	140	DG21A3	20.9
68	1797	1306	140	TG16A3	25.6
56	2823	1621	140	DG28A3	31.4
46	4103	1975	140	TG21A3	38.5
37	4285	2402	140	TG21A3	47.1
30	4475	2962	140	TG21A3	57.7
25	4634	3554	140	TG21A3	70.6
20	10400	4442	140	TG28A3	86.5
17	10353	5385	140	TG28A3	105.9
14	10204	6582	140	TG28A3	129.7
11	9994	8078	182T ⁽²⁾	TG28A3	105.9
9	9707	9873	182T ⁽²⁾	TG28A3	129.7

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

(2) These ratings use an 1160 RPM motor.

XL Parallel Gearmotors - 2 HP

AGMA CLASS I

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	310	158	140	SG16A	2.25
640	304	193	140	SG16A	2.75
520	292	238	140	SG16A	3.37
420	275	294	140	SG16A	4.13
350	797	353	140	SG21A	5.06
280	800	441	140	SG21A	6.2
230	635	526	140	DG16A	7.6
190	656	637	140	DG16A	9.3
155	675	781	140	DG16A	11.4
125	691	968	140	DG16A	14.0
100	702	1210	140	DG16A	17.1
84	1758	1441	140	DG21A	20.9
68	1817	1779	140	DG21A	25.6
56	1863	2161	140	DG21A	31.4
46	1601	2633	140	TG16A	38.5
37	1628	3202	140	TG16A	47.1
30	4689	3949	140	TG21A	57.7
25	4891	4739	140	TG21A	70.6
20	4823	5924	140	TG21A	86.5
17	4714	7181	140	TG21A	105.9
14	4540	8776	140	TG21A	129.7
11	10353	10771	182T ⁽²⁾	TG28A	105.9
9	10204	13164	182T ⁽²⁾	TG28A	129.7

AGMA CLASS III

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	613	158	140	SG21A3	2.25
640	645	193	140	SG21A3	2.75
520	679	238	140	SG21A3	3.37
420	713	294	140	SG21A3	4.13
350	724	350	140	DG16A3	5.06
280	1237	432	140	DG21A3	6.2
230	1293	526	140	DG21A3	7.6
190	1330	650	140	DG21A3	9.3
155	1365	781	140	DG21A3	11.4
125	1393	968	140	DG21A3	14.0
100	1407	1210	140	DG21A3	17.1
84	2865	1441	140	DG28A3	20.9
68	2785	1779	140	DG28A3	25.6
56	2675	2161	140	DG28A3	31.4
46	3960	2633	140	TG21A3	38.5
37	4110	3202	140	TG21A3	47.1
30	4260	3949	140	TG21A3	57.7
25	4375	4739	140	TG21A3	70.6
20	10120	5924	140	TG28A3	86.5
17	10120	7181	140	TG28A3	105.9
14	9900	8776	140	TG28A3	129.7
11	9548	10771	182T ⁽²⁾	TG28A3	105.9

AGMA CLASS II

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	294	158	140	SG16A2	2.25
640	282	193	140	SG16A2	2.75
520	258	238	140	SG16A2	3.37
420	741	294	140	SG21A2	4.13
350	774	353	140	SG21A2	5.06
280	575	432	140	DG16A2	6.2
230	592	526	140	DG16A2	7.6
190	603	637	140	DG16A2	9.3
155	610	781	140	DG16A2	11.4
125	610	968	140	DG16A2	14.0
100	1580	1210	140	DG21A2	17.1
84	1627	1441	140	DG21A2	20.9
68	2910	1779	140	DG28A2	25.6
56	2845	2161	140	DG28A2	31.4
46	4130	2633	140	TG21A2	38.5
37	4320	3202	140	TG21A2	47.1
30	4515	3949	140	TG21A2	57.7
25	4685	4739	140	TG21A2	70.6
20	4692	5924	140	TG28A2	86.5
17	10400	7181	140	TG28A2	105.9
14	10280	8776	140	TG28A2	129.7
11	10073	10771	182T ⁽²⁾	TG28A2	105.9
9	9817	13164	182T ⁽²⁾	TG28A2	129.7

- (1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.
 (2) These ratings use an 1160 RPM motor.

XL Parallel Gearmotors - 3 HP

AGMA CLASS I

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	628	238	182T	SG21A	2.25
640	662	290	182T	SG21A	2.75
520	698	356	182T	SG21A	3.37
420	736	441	182T	SG21A	4.13
350	769	529	182T	SG21A	5.06
280	1294	648	182T	DG21A	6.2
230	1356	789	182T	DG21A	7.6
190	1408	955	182T	DG21A	9.3
155	1460	1171	182T	DG21A	11.4
125	1510	1452	182T	DG21A	14.0
100	1552	1815	182T	DG21A	17.1
84	1600	2161	182T	DG21A	20.9
68	2892	2669	182T	DG28A	25.6
56	2822	3241	182T	DG28A	31.4
46	4103	3949	182T	TG21A	38.5
37	4285	4803	182T	TG21A	47.1
30	4475	5924	182T	TG21A	57.7
25	4634	7109	182T	TG21A	70.6
20	10355	8866	182T	TG28A	86.5
17	10353	10771	182T	TG28A	105.9
14	10204	13164	182T	TG28A	129.7
11	9994	16156	213T ⁽²⁾	TG28A	105.9
9	9707	19746	213T ⁽²⁾	TG28A	129.7

AGMA CLASS II

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	611	238	182T	SG21A2	2.25
640	642	290	182T	SG21A2	2.75
520	675	356	182T	SG21A2	3.37
420	708	441	182T	SG21A2	4.13
350	1177	518	182T	DG21A2	5.06
280	1227	648	182T	DG21A2	6.2
230	1275	789	182T	DG21A2	7.6
190	1315	955	182T	DG21A2	9.3
155	1345	1171	182T	DG21A2	11.4
125	1370	1452	182T	DG21A2	14.0
100	1380	1815	182T	DG21A2	17.1
84	2850	2161	182T	DG21A2	20.9
68	2760	2669	182T	DG28A2	25.6
56	2640	3241	182T	DG28A2	31.4
46	3930	3949	182T	TG21A2	38.5
37	4075	4803	182T	TG21A2	47.1
30	4205	5924	182T	TG21A2	57.7
25	4325	7109	182T	TG21A2	70.6
20	10080	8866	182T	TG28A2	86.5
17	10080	10771	182T	TG28A2	105.9
14	10270	13164	182T	TG28A2	129.7
11	9449	16156	213T ⁽²⁾	TG28A2	105.9

AGMA CLASS III

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	585	238	182T	SG21A3	2.25
640	613	290	182T	SG21A3	2.75
520	1097	356	182T	SG28A3	3.37
420	1155	441	182T	SG28A3	4.13
350	1102	518	182T	DG21A3	5.06
280	1132	648	182T	DG21A3	6.2
230	1170	789	182T	DG21A3	7.6
190	1180	955	182T	DG21A3	9.3
155	1180	1171	182T	DG21A3	11.4
125	2700	1452	182T	DG28A3	14.0
100	2770	1815	182T	DG28A3	17.1
84	2675	2161	182T	DG28A3	20.9
68	2510	2669	182T	DG28A3	25.6
56	7620	3241	182T	TG21A3	31.4
46	8060	3949	182T	TG21A3	38.5
37	8460	4803	182T	TG28A3	47.1
30	8860	5924	182T	TG28A3	57.7
25	9240	7109	182T	TG28A3	70.6
20	9680	8866	182T	TG28A3	86.5
17	9530	10771	182T	TG28A3	105.9

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

XL Parallel Gearmotors - 5 HP

AGMA CLASS I

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	600	396	184T	SG21A	2.25
640	629	483	184T	SG21A	2.75
520	660	594	184T	SG21A	3.37
420	1176	735	184T	SG28A	4.13
350	1145	864	184T	DG21A	5.06
280	1185	1080	184T	DG21A	6.2
230	1232	1315	184T	DG21A	7.6
190	1257	1592	184T	DG21A	9.3
155	1275	1952	184T	DG21A	11.4
125	1280	2420	184T	DG21A	14.0
100	2846	3025	184T	DG28A	17.1
84	2776	3601	184T	DG28A	20.9
68	2655	4449	184T	DG28A	25.6
56	2502	5402	184T	DG28A	31.4
46	3817	6582	184T	TG21A	38.5
37	3937	8005	184T	TG21A	47.1
30	4045	9873	184T	TG21A	57.7
25	9416	11848	184T	TG28A	70.6
20	9905	14810	184T	TG28A	86.5
17	9855	17951	184T	TG28A	105.9
13	9512	21940	184T	TG28A	129.7

AGMA CLASS II

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	570	396	184T	SG21A2	2.25
640	598	483	184T	SG21A2	2.75
520	1080	594	184T	SG28A2	3.37
420	1135	735	184T	SG28A2	4.13
350	1060	864	184T	DG21A2	5.06
280	1077	1080	184T	DG21A2	6.2
230	1107	1315	184T	DG21A2	7.6
190	1107	1592	184T	DG21A2	9.3
155	2540	1952	184T	DG28A2	11.4
125	2655	2420	184T	DG28A2	14.0
100	2682	3025	184T	DG28A2	17.1
84	2560	3601	184T	DG28A2	20.9
68	4056	4356	184T	TG21A2	25.6
56	4398	5402	184T	TG21A2	31.4
46	7980	6582	184T	TG28A2	38.5
37	8710	8002	184T	TG28A2	47.1
30	8715	9873	184T	TG28A2	57.7
25	9050	11848	184T	TG28A2	70.6
20	9451	14810	184T	TG28A2	86.5

AGMA CLASS III

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	941	396	184T	SG28A3	2.25
640	985	483	184T	SG28A3	2.75
520	1032	594	184T	SG28A3	3.37
420	1076	735	184T	SG28A3	4.13
280	2125	1103	184T	DG28A3	6.2
230	2232	1315	184T	DG28A3	7.6
190	2326	1592	184T	DG28A3	9.3
155	2425	1952	184T	DG28A3	11.4
125	2523	2420	184T	DG28A3	14.0
100	2327	3025	184T	DG28A3	17.1
68	6979	4356	184T	TG28A3	25.6
56	7295	5402	184T	TG28A3	31.4
46	7648	6582	184T	TG28A3	38.5
37	8230	8002	184T	TG28A3	47.1
30	8267	9873	184T	TG28A3	57.7
25	8020	12101	184T	TG28A3	70.6

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

XL Parallel Gearmotors - 7.5 HP

AGMA CLASS I

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	562	594	213T	SG21A	2.25
640	1020	724	213T	SG28A	2.75
520	1073	891	213T	SG28A	3.37
420	1126	1103	213T	SG28A	4.13
350	1172	1323	213T	SG28A	5.06
280	1052	1621	213T	DG21A	6.2
230	1075	1973	213T	DG21A	7.6
190	1066	2388	213T	DG21A	9.3
155	2516	2927	213T	DG28A	11.4
125	2636	3630	213T	DG28A	14.0
100	2636	4537	213T	DG28A	17.1
84	2502	5402	213T	DG28A	20.9
68	4056	6534	213T	TG21A	25.6
56	7496	7934	213T	TG28A	31.4
46	7898	9873	213T	TG28A	38.5
37	7567	12004	213T	TG28A	47.1
30	8642	14810	213T	TG28A	57.7
25	8966	17772	213T	TG28A	70.6

AGMA CLASS II

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	745	594	213T	SG28A2	2.25
640	745	724	213T	SG28A2	2.75
520	810	891	213T	SG28A2	3.37
420	840	1103	213T	SG28A2	4.13
350	2005	1296	213T	DG28A2	5.06
280	2112	1621	213T	DG28A2	6.2
230	2220	1973	213T	DG28A2	7.6
190	2310	2388	213T	DG28A2	9.3
155	2412	2927	213T	DG28A2	11.4
125	2500	3630	213T	DG28A2	14.0
84	6040	5288	213T	TG28A2	20.9
68	6940	6534	213T	TG28A2	25.6
56	7260	7934	213T	TG28A2	31.4
46	7600	9873	213T	TG28A2	38.5
37	7190	12004	213T	TG28A2	47.1
30	8200	14810	213T	TG28A2	57.7

AGMA CLASS III

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	690	594	213T	SG28A3	2.25
640	710	724	213T	SG28A3	2.75
350	1930	1296	213T	DG28A3	5.06
280	2020	1621	213T	DG28A3	6.2
230	2110	1973	213T	DG28A3	7.6
190	2178	2388	213T	DG28A3	9.3
155	2243	2927	213T	DG28A3	11.4
84	5800	5288	213T	TG28A3	20.9
68	6648	6534	213T	TG28A3	25.6
56	6894	7934	213T	TG28A3	31.4
45	7140	9873	213T	TG28A3	38.5

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

XL Parallel Gearmotors - 10 HP

AGMA CLASS I

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	893	792	215T	SG28A	2.25
640	928	965	215T	SG28A	2.75
520	1032	1188	215T	SG28A	3.37
420	1076	1471	215T	SG28A	4.13
350	2012	1728	215T	DG28A	5.06
280	2040	2161	215T	DG28A	6.2
230	2132	2630	215T	DG28A	7.6
190	2207	3184	215T	DG28A	9.3
155	2327	3903	215T	DG28A	11.4
125	2523	4840	215T	DG28A	14.0
100	2420	6050	215T	DG28A	17.1
84	6060	7050	215T	TG28A	20.9
68	6720	8712	215T	TG28A	25.6
56	6970	10578	215T	TG28A	31.4
46	7240	13164	215T	TG28A	38.5
37	7248	16008	215T	TG28A	47.1
30	8267	19746	215T	TG28A	57.7
25	8599	23697	215T	TG28A	70.6

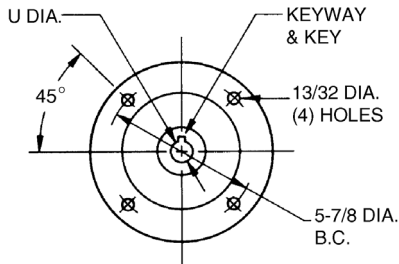
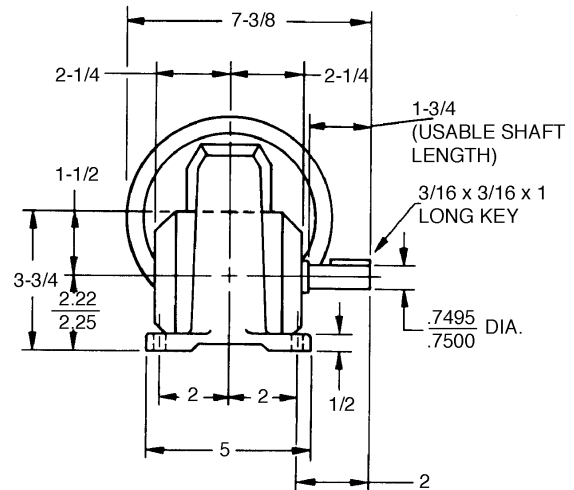
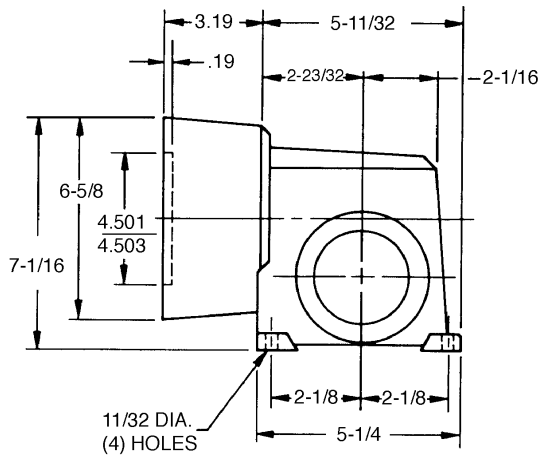
AGMA CLASS II

Rated Output		Output Torque (in-lb)	TEFC Motor Frame	Gearcase Size	Ratio
RPM	OHL ⁽¹⁾				
780	700	792	215T	SG28A2	2.25
640	720	965	215T	SG28A2	2.75
350	1945	1728	215T	DG28A2	5.06
280	1690	2161	215T	DG28A2	6.2
230	1770	2630	215T	DG28A2	7.6
190	1810	3184	215T	DG28A2	9.3
155	1870	3903	215T	DG28A2	11.4
84	5850	7050	215T	TG28A2	20.9
68	5250	8712	215T	TG28A2	25.6
56	5400	10578	215T	TG28A2	31.4
45	5500	13164	215T	TG28A2	38.5

(1) Overhung load in pounds (lbs.) at one shaft diameter from the shaft shoulder.

XL Right Angle Reducer

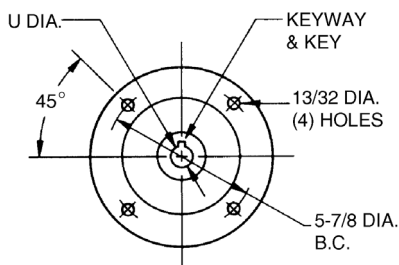
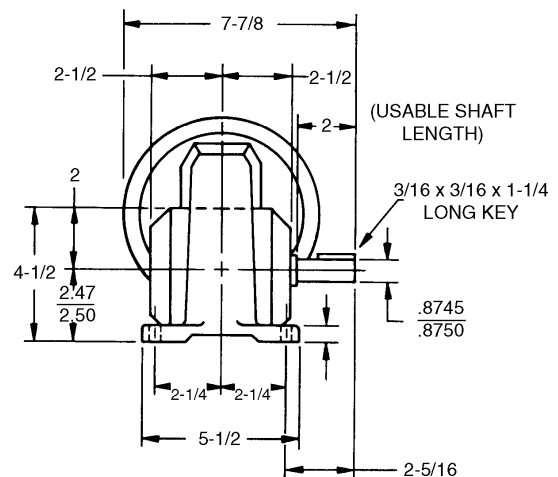
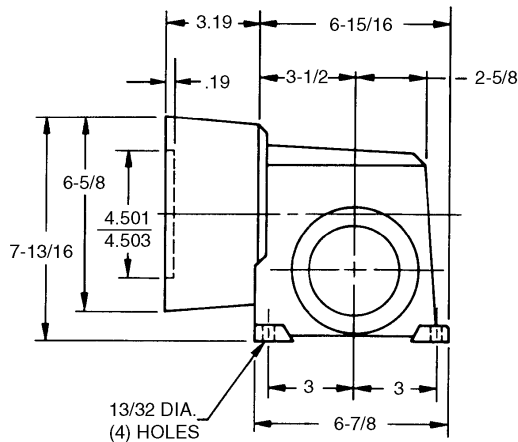
SIZE WM12A



Frame	U		Keyway	Uses Key
	Min.	Max		
48Y, 56C	.626	.627	3/16 x 3/32	3/16 x 3/16 x 1-1/4
140TC, 160ATC	.876	.877		

NOTE:
Multimount
Dimensions Page XL-42
J Mount
Dimensions Page XL-44
Flange Mount
Dimensions Page XL-46

SIZE WM16A

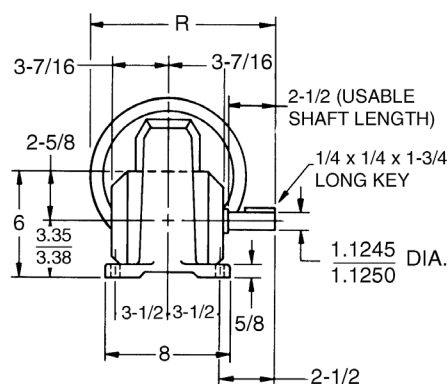
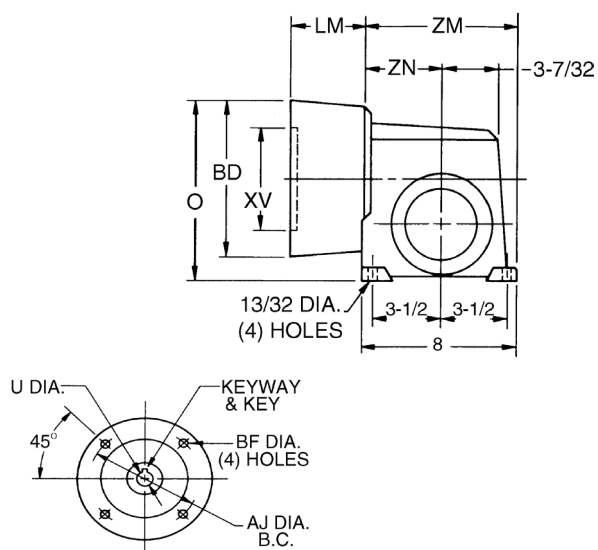


Frame	U		Keyway	Uses Key
	Min.	Max		
48Y, 56C	.626	.627	3/16 x 3/32	3/16 x 3/16 x 1-1/4
140TC, 160ATC	.876	.877		

NOTE:
Multimount
Dimensions Page XL-42
J Mount
Dimensions Page XL-44
Flange Mount
Dimensions Page XL-46

XL Right Angle Reducer

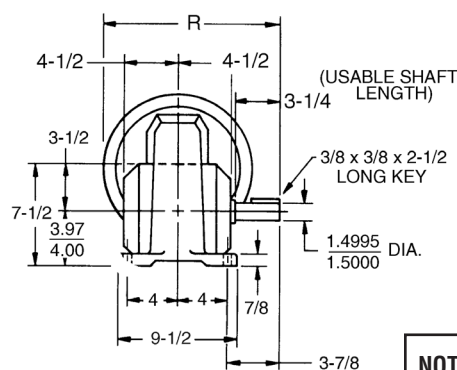
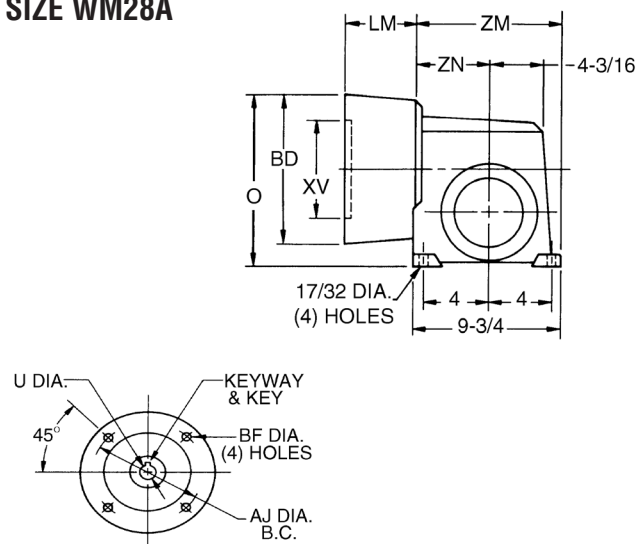
SIZE WM21A



NOTE:
Multimount
Dimensions Page XL-42
J Mount
Dimensions Page XL-44
Flange Mount
Dimensions Page XL-46

Frame	AJ	BD	BF	LM	U		Keyway	XV	ZM	ZN	O	R	Uses Key
					Min.	Max.							
48Y, 56C	5-7/8	6-5/8	13/32	3-3/16	0.626	0.627	3/16 x 3/32	4.501/4.503	8-1/4	4-1/4	9-5/16	10	3/16 x 3/16 x 1-1/4
140TC, 160ATC	5-7/8	6-5/8	13/32	3-3/16	0.876	0.877	3/16 x 3/32	4.501/4.503	8-1/4	4-1/4	9-5/16	10	3/16 x 3/16 x 1-1/4
180TC, 180ATCZ	7-1/4	9	17/32	4-5/32	1.126	1.127	1/4 x 1/8	8.500/8.502	8-15/16	4-15/16	10-1/2	10-1/2	1/4 x 1/4 x 1-3/4
210TC, 210ATCZ	7-1/4	9	17/32	4-21/32	1.376	1.377	5/16 x 5/32	8.500/8.502	8-15/16	4-15/16	10-1/2	10-1/2	5/16 x 5/16 x 2-1/4

SIZE WM28A

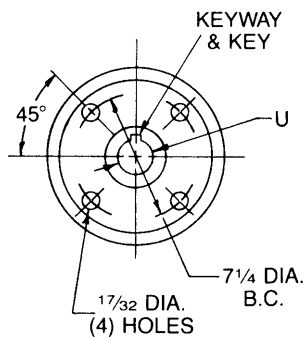
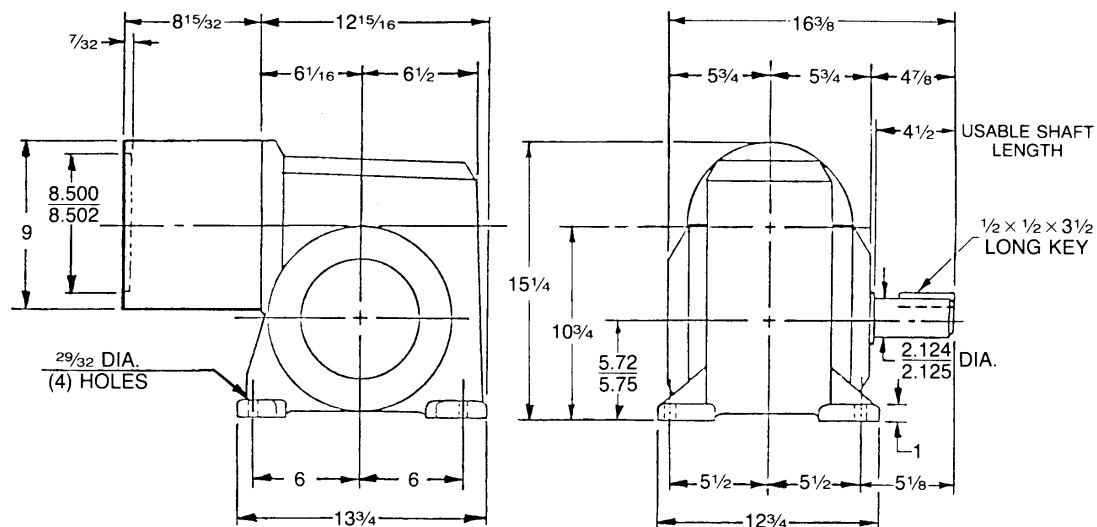


NOTE:
Multimount
Dimensions Page XL-42
J Mount
Dimensions Page XL-44
Flange Mount
Dimensions Page XL-46

Frame	AJ	BD	BF	LM	U		Keyway	XV	ZM	ZN	O	R	Uses Key
					Min.	Max.							
48Y, 56C	5-7/8	6-5/8	13/32	3-3/16	0.626	0.627	3/16 x 3/32	4.501/4.503	10-15/32	5-23/32	10-13/16	12-29/32	3/16 x 3/16 x 1-1/4
140TC, 160ATC	5-7/8	6-5/8	13/32	3-3/16	0.876	0.877	3/16 x 3/32	4.501/4.503	10-15/32	5-23/32	10-13/16	12-29/32	3/16 x 3/16 x 1-1/4
180TC, 180ATCZ	7-1/4	9	17/32	4-5/32	1.126	1.127	1/4 x 1/8	8.500/8.502	10-15/16	6-3/16	12	12-29/32	1/4 x 1/4 x 1-3/4
210TC, 210ATCZ	7-1/4	9	17/32	4-21/32	1.376	1.377	5/16 x 5/32	8.500/8.502	10-15/16	6-3/16	12	12-29/32	5/16 x 5/16 x 2-1/4

XL Right Angle Reducer

SIZE WM40A

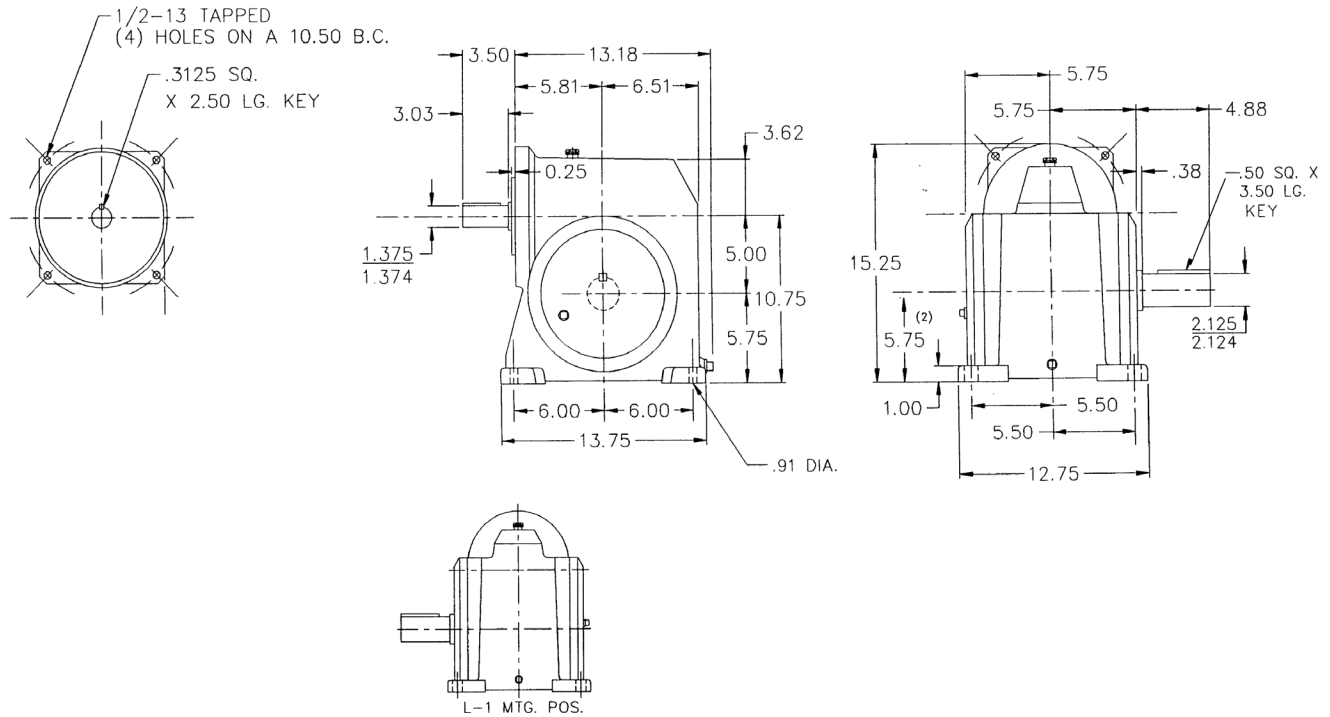


Frame	U		Keyway	Uses Key
	Min.	Max.		
180TC/180ATCZ	1.126	1.127	1/4 x 1/8	1/4 x 1-1/4 x 1-3/4
210TC/210ATCZ	1.376	1.377	5/16 x 5/32	5/16 x 5/16 x 2-1/4
250TC/250ATCZ	1.626	1.627	3/8 x 3/16	3/8 x 3/8 x 2-3/4

NOTE:
J Mount
Dimensions Page XL-44
Flange Mount
Dimensions Page XL-46

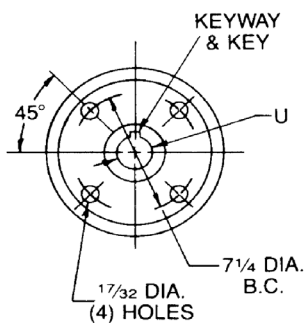
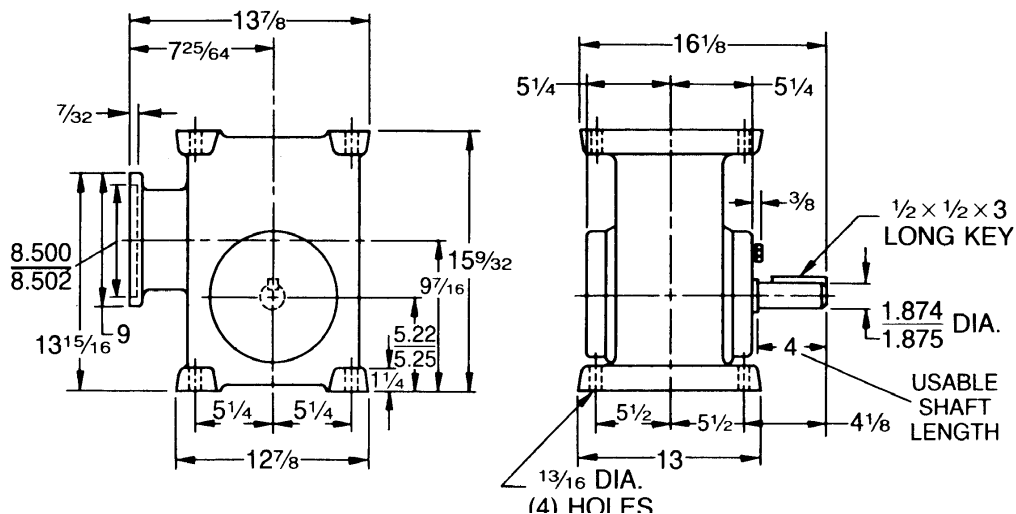
XL Right Angle Reducer

SIZE WR40A



XL Right Angle Reducer

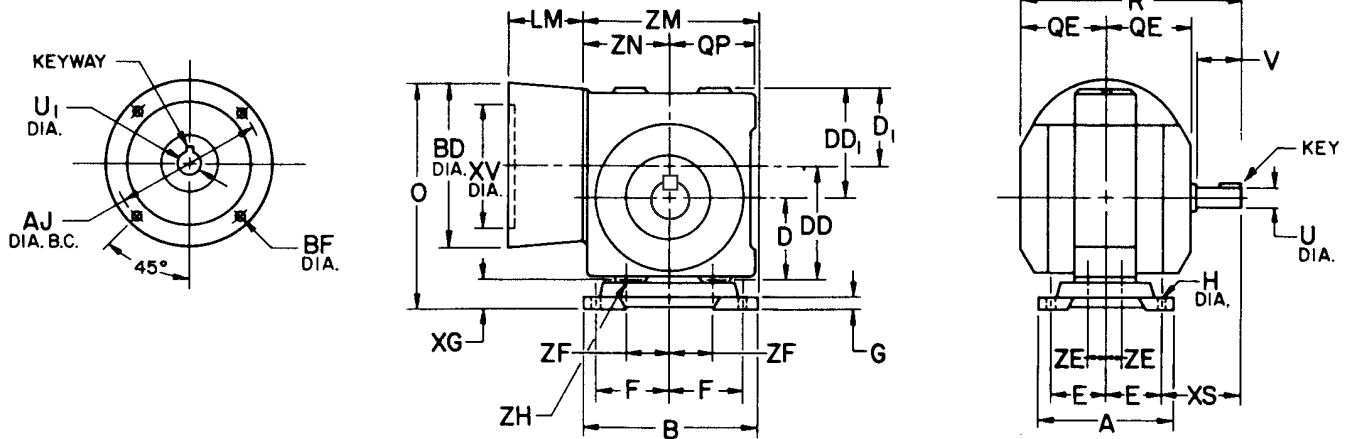
SIZE H419



Frame	U		Keyway	Uses Key
	Min.	Max		
180TC/180ATCZ	1.1255	1.1265	1/4 x 1/8	1/4 x 1/4 x 2
210TC/210ATCZ	1.3750	1.3765	5/16 x 5/32	5/16 x 5/16 x 2-1/4

XL Right Angle Reducer - Multimount

SIZES WM12B - WM28B



APG

MASTER XL

COMBOGEAR

MOTO DRIVE

ULTIMA

PULLEYS

XL Right Angle Reducer - Multimount

SIZES WM12B - WM28B

Case Size	A	B	D (1)	D ₁	E	F	G	H 4 Holes	DD	DD ₁	QE	QP	XG
WM12B	5	5-1/4	2-3/16	2-7/16	2	2-1/8	1/2	11/32	3-11/16	3-15/16	2-1/4	2-9/32	1-1/16
WM16B	5-1/2	6-7/8	2-7/16	2-7/16	2-1/4	3	5/8	13/32	4-7/16	4-7/16	2-1/2	2-31/32	1-1/16
WM21B	8	8	3-5/16	2-11/16	3-1/2	3-1/2	3/4	13/32	5-15/16	5-5/16	3-7/16	3-21/32	1-15/16
WM28B	9-1/4	9-1/4	4-1/16	2-11/16	4	4	3/4	17/32	7-9/16	6-3/16	4-1/2	4-11/16	1-15/16

Case Size	ZE	ZF	ZH (4)		OUTPUT SHAFT			XS
					U ₁ (3)	V (2)	KEY	
WM12B	15/16	1-7/16	3/8-16 TAP	5/8 DP.	3/4	1-3/4	3/16 x 3/16 x 1	2-1/16
WM16B	15/16	1-3/4	3/8-16 TAP	3/4 DP.	7/8	2	3/16 x 3/16 x 1-1/4	2-5/16
WM21B	1-1/8	2	1/2-13 TAP	13/16 DP.	1-1/8	2-1/2	1/4 x 1/4 x 1-3/4	2-1/2
WM28B	1-1/8	3-1/4	1/2-13 TAP	13/16 DP.	1-1/2	3-1/4	3/8 x 3/8 x 2-1/2	3-7/8

Case Size	FOR MOTOR FRAMES:											
	56C											
	Wt. (Lbs.)	O (5)	R (6)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (8)	ZM	ZN
								U ₁ (7)	Keyway (10)			
WM12B	25	8-5/16	7-3/8	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	5-11/32	2-23/32
WM16B	40	8-13/16	7-7/8	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	6-15/16	3-1/2
WM21B	73	11-3/16	10	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	8-1/4	4-1/2
WM28B	117	12-13/16	12-29/32	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	10-15/32	5-23/32

Case Size	FOR MOTOR FRAMES:											
	140TC/160ATC											
	Wt. (Lbs.)	O (5)	R (6)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (8)	ZM	ZN
								U ₁ (7)	Keyway (10)			
WM16B	40	8-13/16	7-7/8	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	6-15/16	3-1/2
WM21B	73	11-3/16	10	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	8-1/4	4-1/4
WM28B	117	12-13/16	12-29/32	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	10-15/32	5-23/32

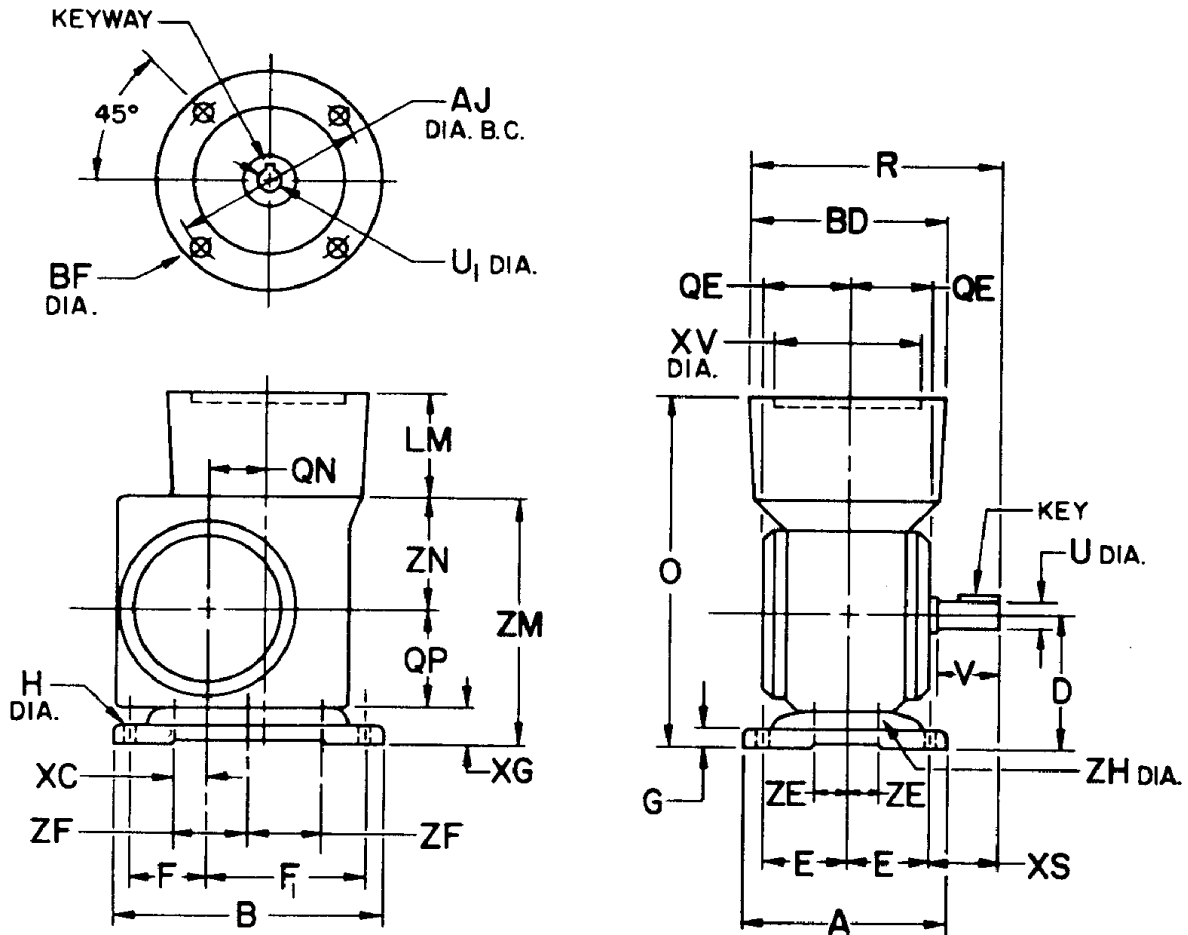
Case Size	FOR MOTOR FRAMES:											
	180TC/180ATCZ (13)											
	Wt. (Lbs.)	O (5)	R (6)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM	ZN
								U ₁ (7)	Keyway (11)			
WM16B	...	...	...	...	...	...	...	...		...	...	...
WM21B	88	12-3/8	10-1/2	7-1/4	9	1-7/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	8-15/16	4-15/16
WM28B	135	14	12-29/32	7-1/4	9	1-7/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	10-7/8	6-3/16

Case Size	FOR MOTOR FRAMES:											
	210TC/210ATCZ (13)											
	Wt. (Lbs.)	O (5)	R (6)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM	ZN
								U ₁ (7)	Keyway (12)			
WM28B	145	14	12-1/2	7-1/4	9	1-7/32	4-21/32	1-3/8	5/16 X 5-32	8-1/2	10-7/8	6-3/16

- | | | | |
|-------------------------------|-----------------------|-------------------------------------|---|
| (1) "D" varies + 0, -1/32. | (5) At highest point. | (8) + .001 + .003. | (11) Using 1/4 x 1/4 x 1-3/4 key. |
| (2) Usable shaft length. | (6) At widest point. | (9) + .000 + .002. | (12) Using 5/16 x 5/16 x 2-1/4 key. |
| (3) +.0000 -.0005. | (7) + .001 + .002. | (10) Using 3/16 x 3/16 x 1-1/4 key. | (13) ATCZ Shaft extrn. must match TC extrn. |
| (4) 8 holes (4 top, 4 bottom) | | | |

XL Right Angle Reducer - J Mount

SIZES WM12J - WM40J



XL Right Angle Reducer - J Mount

SIZES WM12J - WM40J

Case Size	A	B	D (1)	E	F	F ₁	G	H 4 Holes	QE	QN	QP	XC	XG
WM12J	5-1/2	6-7/8	3-1/4	2-1/4	2	4	5/8	13/32	2-1/4	1-1/2	2-3/16	3/4	1-1/16
WM16J	6	8	3-15/16	2-1/2	2-1/4	4-3/4	1/2	13/32	2-1/2	2	2-7/8	15/16	1-1/16
WM21J	9-1/4	12-1/4	5-1/2	4	4-11/16	6-5/16	3/4	17/32	3-7/16	2-5/8	3-9/16	2-7/16	1-15/16
WM28J	9-1/4	12-1/4	6-1/2	4	4-3/8	6-5/8	3/4	17/32	4-1/2	3-1/2	4-9/16	2-1/8	1-15/16
WM40J	15	20-1/2	10	6-1/4	7-7/8	10-5/8	1-1/4	1-1/16	5-3/4	5	7	4-1/4	3

Case Size	ZE	ZF	ZH	OUTPUT SHAFT			XS
				U ₁ (3)	V (2)	Key	
WM12J	15/16	1-3/4	3/8-16 TAP	3/4	1-3/4	3/16 x 3/16 x 1	1-13/16
WM16J	15/16	2-3/16	3/8-16 TAP	7/8	2	3/16 x 3/16 x 1-1/4	2-1/16
WM21J	1-1/8	3-1/4	1/2-13 TAP	1-1/8	2-1/2	1/4 x 1/4 x 1-3/4	2
WM28J	1-1/8	3-1/4	1/2-13 TAP	1-1/2	3-1/4	3/8 x 3/8 x 2-1/2	3-7/8
WM40J	2-1/4	5-5/8	7/8-9 TAP	2-1/8	4-1/2	1/2 x 1/2 x 3-1/2	4-3/8

Case Size	FOR MOTOR FRAMES:											
	56C											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (8)	ZM	ZN
								U ₁ (7)	Keyway (10)			
WM12J	28	9-5/32	7-27/64	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	5-11/32	2-23/32
WM16J	41	10-5/8	7-59/64	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	7-7/16	3-1/2
WM21J	79	12-15/16	9-7/16	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	8-1/4	4-1/2
WM28J	120	15-13/32	12-3/8	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	10-15/32	5-23/32
WM40J	...	...	...	...	...	...	...	...	...	...	...	...

Case Size	FOR MOTOR FRAMES:											
	140TC/160ATC											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (8)	ZM	ZN
								U ₁ (7)	Keyway (10)			
WM16J	41	10-5/8	7-59/64	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	7-7/16	3-1/2
WM21J	79	12-15/16	9-7/16	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	9-3/4	4-1/4
WM28J	120	15-13/32	12-3/8	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	12-7/32	5-23/32
WM40J	...	...	...	...	...	...	...	...	...	...	...	...

Case Size	FOR MOTOR FRAMES:											
	180TC/180ATCZ (14)											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM	ZN
								U ₁ (7)	Keyway (11)			
WM16J	...	...	...	...	...	...	...	...	...	...	...	...
WM21J	94	14-39/64	10-39/64	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	10-7/16	4-15/16
WM28J	138	17-11/32	12-1/2	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	12-11/16	6-3/16
WM40J	366	24-17/64	16-3/8	7-1/4	9	17/32	8-15/32	1-1/8	1/4 x 1/8	8-1/2	15-13/16	5-13/16

Case Size	FOR MOTOR FRAMES:											
	210TC/210ATCZ (14)											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM (6)	ZN
								U ₁ (7)	Keyway (12)			
WM21J	104	14-39/64	10-39/64	7-1/4	9	17/32	4-21/32	1-3/8	5/16 x 5/32	8-1/2	10-7/16	4-15/16
WM28J	148	17-11/32	12-1/2	7-1/4	9	17/32	4-21/32	1-3/8	5/16 x 5/32	8-1/2	12-11/16	6-3/16
WM40J	376	24-17/64	16-3/8	7-1/4	9	17/32	8-15/32	1-3/8	5/16 x 5/32	8-1/2	15-13/16	5-13/16

Case Size	FOR MOTOR FRAMES:											
	210TC/210ATCZ (14)											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM (6)	ZN
								U ₁ (7)	Keyway (13)			
WM21J	...	...	...	...	...	...	...	...	...	...	...	...
WM28J	...	...	...	...	...	...	...	...	...	...	...	...
WM40J	376	24-17/64	16-3/8	7-1/4	9	17/32	8-15/32	1-5/8	3/8 x 3/16	8-1/2	15-13/16	5-13/16

- (1) "D" varies +0, -1/32.

(2) Usable shaft length.

(3) +.0000 -.0005.
- (4) At highest point.

(5) At widest point.

(6) Includes bolt-on foot.
- (7) +.001 +.002.

(8) +.001 +.003.

(9) +.000 +.002.
- (10) Using 3/16 x 3/16 x 1-1/4 key.

(11) Using 1/4 x 1/4 x 1-3/4 key.

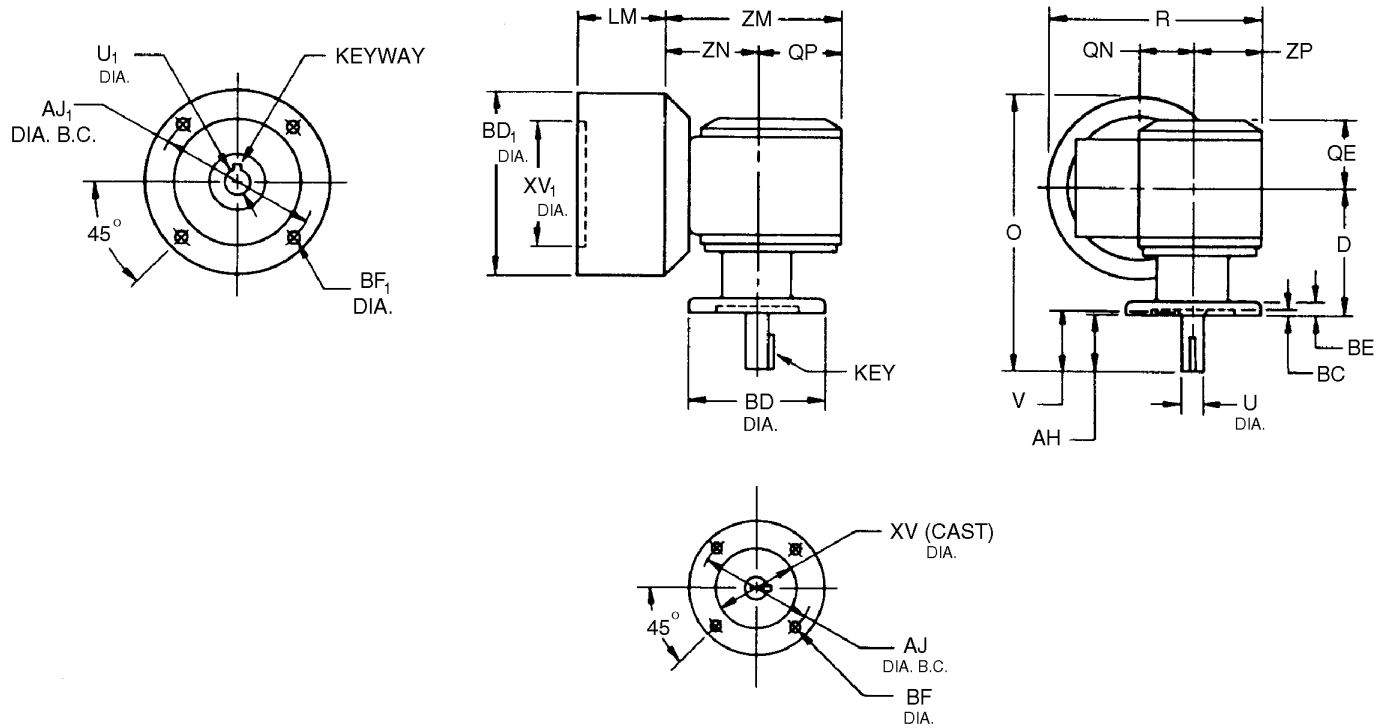
(12) Using 5/16 x 5/16 x 2-1/4 key.

(13) Using 3/8 x 3/8 x 2-3/4 key

(14) ATCZ Shaft extn. must match TC extn.

XL Right Angle Reducer - Flange Mount

SIZES WM12F - WM40F



XL Right Angle Reducer- Flange Mount

SIZES WM12F - WM40F

Case Size	D (1)	BE	BF 4 Holes	AH	AJ	BC	BD	QE	QN	QP	XV	ZP	OUTPUT SHAFT		
													U (3)	V (2)	Key
WM12F	3-3/4	3/8	5/16	1-11/16	3-1/8	1/4	4	2-1/4	1-1/2	2-9/32	2-1/4	2-3/16	3/4	1-13/16	3/16 x 3/16 x 1
WM16F	4-5/8	7/16	13/32	2-1/16	4	1/8	5	2-1/2	2	2-31/32	3	2-7/16	7/8	2-3/16	3/16 x 3/16 x 1-1/4
WM21F	5-7/8	1/2	13/32	2-7/16	6-1/8	1/16	7	3-7/16	2-5/8	3-31/32	5	3-5/16	1-1/8	2-1/2	1/4 x 1/4 x 1-3/4
WM28F	6-7/8	5/8	17/32	3-3/16	8-1/2	1/16	10	4-1/2	3-1/2	4-11/16	6-3/4	4-1/16	1-1/2	3-1/4	3/8 x 3/8 x 2-1/2
WM40F	7-1/8	3/4	17/32	3-1/2	15-1/4	1/8	16-1/2	5-3/4	5	7-3/16	13-1/2	5-5/8	2-1/8	4-1/2	1/2 x 1/2 x 3-1/2

Case Size	FOR MOTOR FRAMES:											
	56C											
	Wt. (Lbs.)	O (4)	R (5)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (7)	ZM	ZN
								U ₁ (6)	Keyway (9)			
WM12F	25	8-3/4	7	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	5	2-23/32
WM16F	39	10	7-3/4	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	6-15/32	3-1/2
WM21F	71	1-13/4	9-1/16	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	7-29/32	4-1/2
WM28F	119	14-9/16	10-7/8	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	10-13/32	5-23/32
WM40F	...	...	...	...	...	...	...	...		...	...	...

Case Size	FOR MOTOR FRAMES:											
	140TC/160ATC											
	Wt. (Lbs.)	O (4)	R (5)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (7)	ZM	ZN
								U ₁ (6)	Keyway (9)			
WM12F	25	8-3/4	7	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	5	2-23/32
WM16F	39	10	7-3/4	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	6-15/32	3-1/2
WM21F	71	11-3/4	9-1/4	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	7-29/32	4-1/4
WM28F	119	14-9/16	10-7/8	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	10-13/32	5-23/32
WM40F	...	...	...	...	...	...	...	...		...	...	...

Case Size	FOR MOTOR FRAMES:											
	180TC/180ATCZ (13)											
	Wt. (Lbs.)	O (4)	R (5)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (8)	ZM	ZN
								U ₁ (6)	Keyway (10)			
WM12F	...	...	...	...	...	...	...	...		...	...	...
WM16F	...	...	...	...	...	...	...	...		...	...	...
WM21F	87	12-13/16	10-7/16	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	8-1/32	4-15/16
WM28F	137	14-9/16	12-1/16	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	10-7/8	6-3/16
WM40F	338	16-3/8	15-1/8	7-1/4	9	17/32	8-15/32	1-1/8	1/4 x 1/8	8-1/2	13	5-13/16

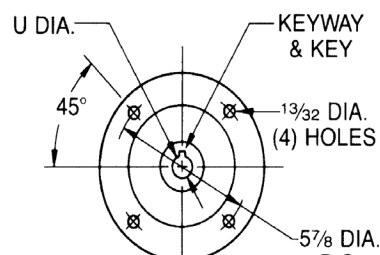
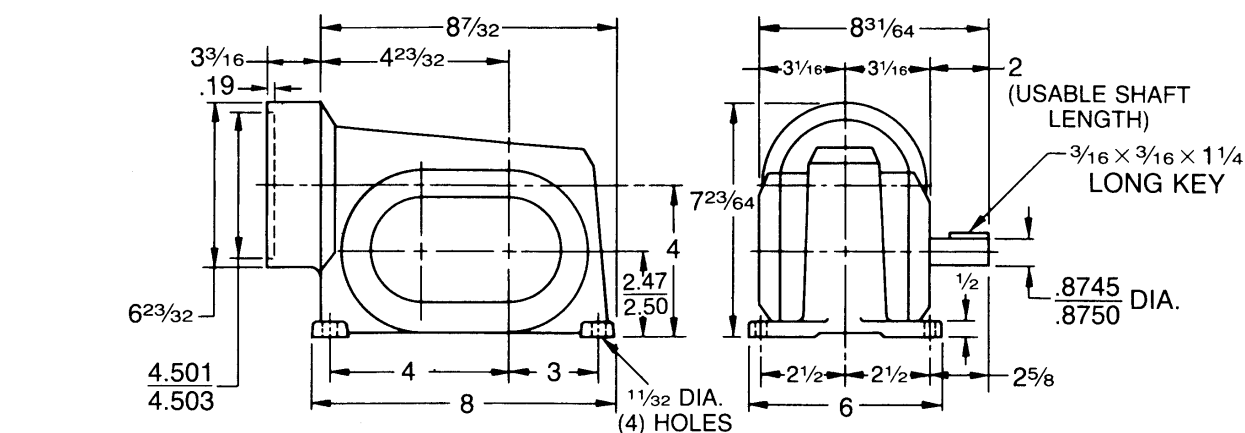
Case Size	FOR MOTOR FRAMES:											
	210TC/21-ATCZ (13)											
	Wt. (Lbs.)	O (4)	R (5)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (8)	ZM	ZN
								U ₁ (6)	Keyway (11)			
WM28F	147	14-9/16	12-1/16	7-1/4	9	17/32	4-5/32	1-3/8	5/16 x 5/32	8-1/2	10-7/8	6-3/16
WM40F	348	16-3/8	15-1/8	7-1/4	9	17/32	8-15/32	1-3/8	5/16 x 5/32	8-1/2	13	5-13/16

Case Size	FOR MOTOR FRAMES:											
	250TC/250ATCZ (13)											
	Wt. (Lbs.)	O (4)	R (5)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (8)	ZM	ZN
								U ₁ (6)	Keyway (12)			
WM28F	...	...	...	...	...	...	...	...	...	...	...	...
WM40F	348	16-3/8	15-1/8	7-1/4	9	17/32	8-15/32	1-5/8	3/8 x 3/8	8-1/2	13	5-13/16

- | | | | |
|----------------------------|-----------------------|------------------------------------|---|
| (1) "D" varies + 0, -1/32. | (4) At highest point. | (7) + .001 + .003. | (10) Using 1/4 x 1/4 x 1-3/4 key. |
| (2) Usable shaft length. | (5) At widest point. | (8) + .000 + .002. | (11) Using 5/16 x 5/16 x 2-1/4 key. |
| (3) +.0000 -.0005. | (6) + .001 + .002. | (9) Using 3/16 x 3/16 x 1-1/4 key. | (12) Using 3/8 x 3/8 x 2-3/4 key |
| | | | (13) ATCZ Shaft extrn. must match TC extrn. |

XL Right Angle Reducer

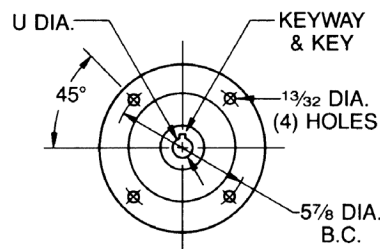
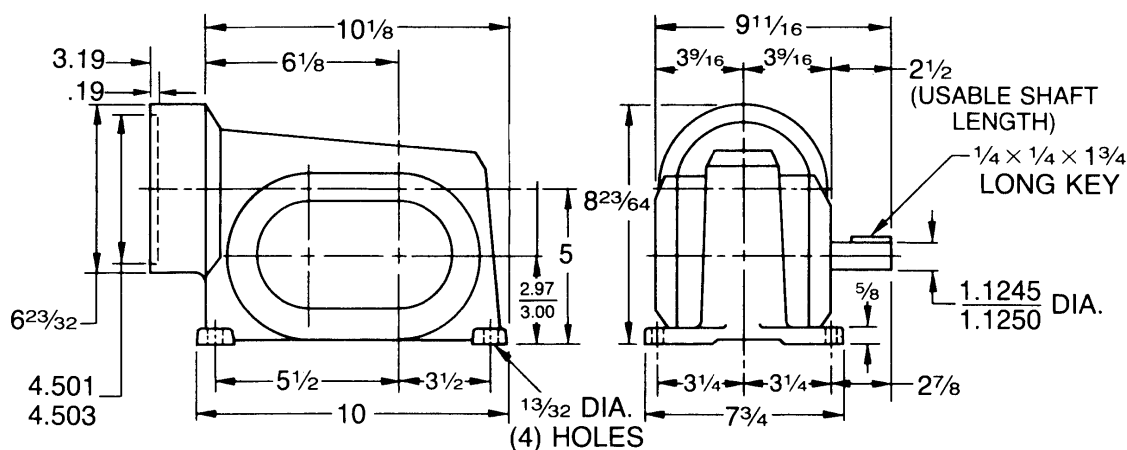
SIZE CM12A



Frame	U		Keyway	Uses Key
	Min.	Max.		
56C	.626	.627	3/16 x 3/32	3/16 x 3/16 x 1-1/4
140TC, 160ATC	.876	.877		

NOTE:
Multimount
Dimensions Page XL-52
J Mount
Dimensions Page XL-54
Flange Mount
Dimensions Page XL-56

SIZE CM16A

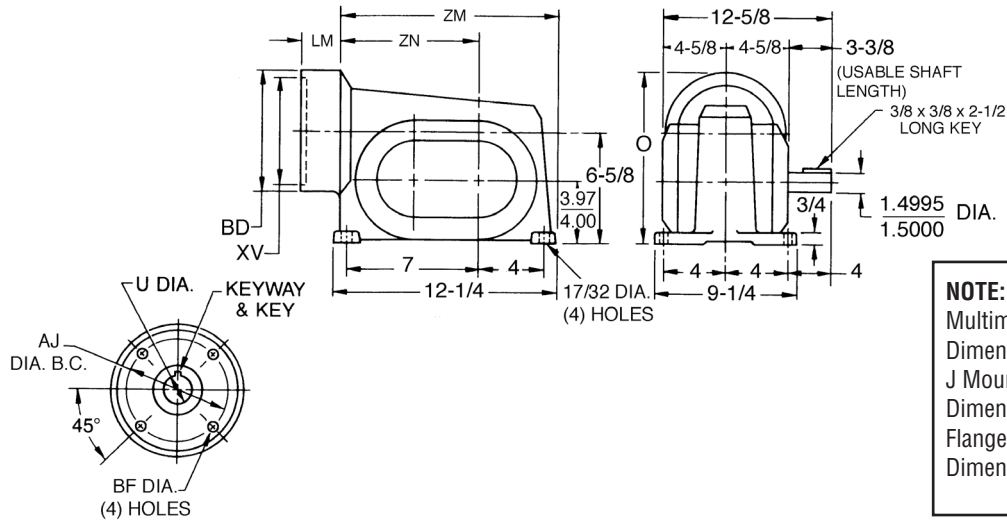


Frame	U		Keyway	Uses Key
	Min.	Max.		
56C	.626	.627	3/16 x 3/32	3/16 x 3/16 x 1-1/4
140TC, 160ATC	.876	.877		

NOTE:
Multimount
Dimensions Page XL-52
J Mount
Dimensions Page XL-54
Flange Mount
Dimensions Page XL-56

XL Right Angle Reducer

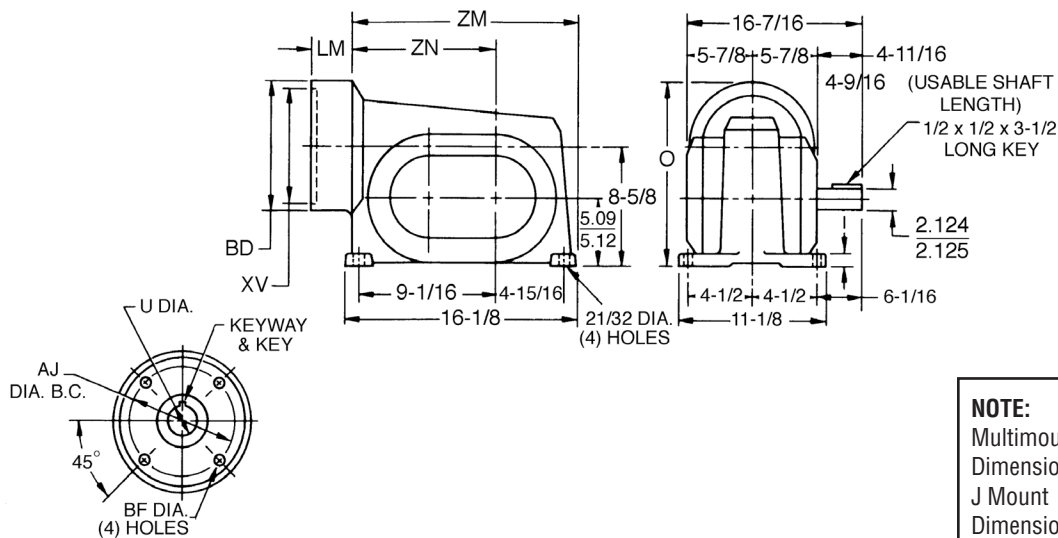
SIZE CM21A



NOTE:
Multimount
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J Mount
Dimensions Page XL-54
Flange Mount
Dimensions Page XL-56

Frame	AJ	BD	BF	LM	U		Keyway	XV	ZM	ZN	O	Uses Key
					Min.	Max						
56C	5-7/8	6-5/8	13/32	3-3/16	.626	.627	3/16 x 3/32	4.501/4.503	12-3/8	7-3/4	9-15/16	3/16 x 3/16 x 1-1/4
140TC, 160ATC	5-7/8	6-5/8	13/32	3-3/16	.876	.877	3/16 x 3/32	4.501/4.503	12-3/8	7-3/4	9-15/16	3/16 x 3/16 x 1-1/4
180TC, 180ATCZ	7-1/4	9	17/32	4-5/32	1.126	1.127	1/4 x 1/8	8.500/8.502	13-1/16	8-7/16	11-1/8	1/4 x 1/4 x 1-3/4
210TC, 210ATCZ	7-1/4	9	17/32	4-21/32	1.376	1.377	5/16 x 5/32	8.500/8.502	13-1/16	8-7/16	11-1/8	5/16 x 5/16 x 2-1/4

SIZE CM28A

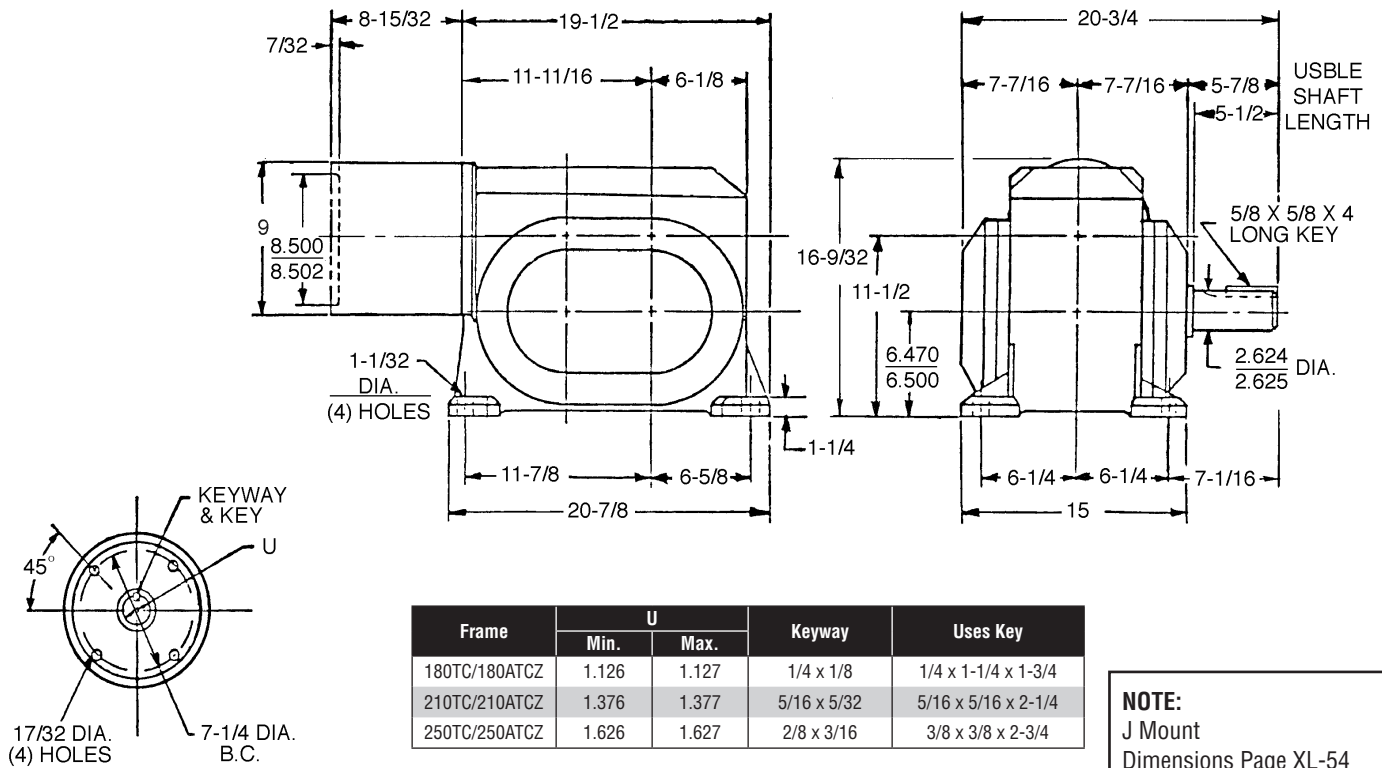


NOTE:
Multimount
Dimensions Page XL-52
J Mount
Dimensions Page XL-54
Flange Mount
Dimensions Page XL-56

Frame	AJ	BD	BF	LM	U		Keyway	XV	ZM	ZN	O	Uses Key
					Min.	Max						
140TC, 160ATC	5-7/8	6-5/8	13/32	3-3/16	.876	.877	3/16 x 3/32	4.501/4.503	16-15/32	10-15/32	11-15/16	3/16 x 3/16 x 1-1/4
180TC, 180ATCZ	7-1/4	9	17/32	4-5/32	1.126	1.127	1/4 x 1/8	8.500/8.502	16-15/16	10-15/16	13-1/8	1/4 x 1/4 x 1-3/4
210TC, 210ATCZ	7-1/4	9	17/32	4-21/32	1.376	1.377	5/16 x 5/32	8.500/8.502	16-15/16	10-15/16	13-1/8	5/16 x 5/16 x 2-1/4

XL Right Angle Reducer

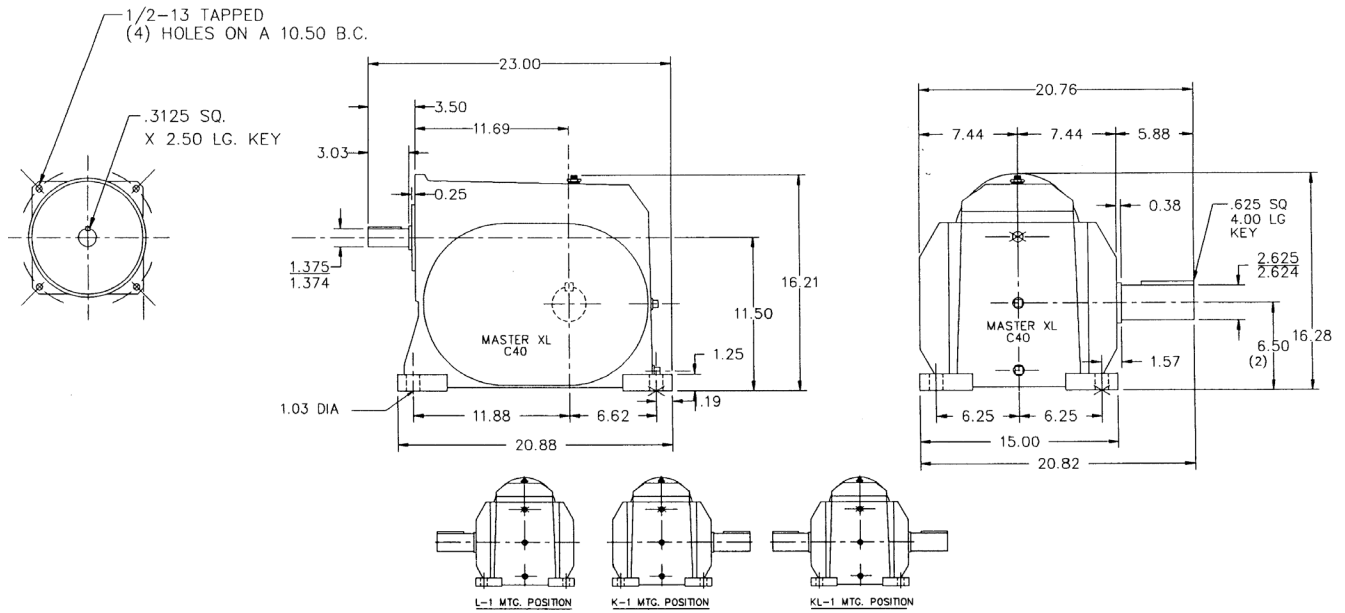
SIZE CM40A



NOTE:
J Mount
Dimensions Page XL-54
Flange Mount
Dimensions Page XL-56

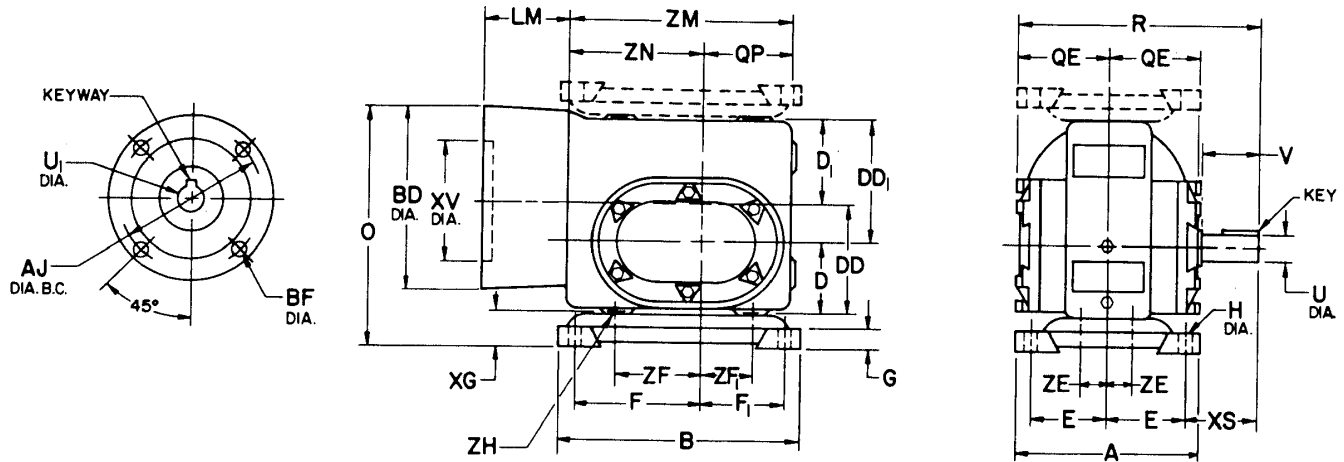
XL Right Angle Reducer

SIZE CR40A



XL Right Angle Reducer - Multimount

SIZES CM12B - CM21B



APG

MASTER XL

COMBOGEAR

MOTO DRIVE

ULTIMA

PULLEYS

XL Right Angle Reducer - Multimount

SIZES CM12B - CM21B

Case Size	A	B	D (1)	DD	E	F	F ₁	G	H 4 Holes	D ₁	DD ₁	QE	QP	XG
CM12B	6	8	2-7/16	3-15/16	2-1/2	4	3	1/2	13/32	2-7/16	3-15/16	3-1/16	3-5/32	1-1/16
CM16B	7-3/4	10	2-15/16	4-15/16	3-1/4	5-1/2	3-1/2	5/8	13/32	2-7/16	4-7/16	3-9/16	3-11/16	1-1/16
CM21B	9-1/4	12-1/4	4-1/16	6-11/16	4	7	4	3/4	17/32	2-11/16	5-5/16	4-5/8	4-7/16	1-15/16

Case Size	ZE	ZF	ZF ₁	ZH (4)		OUTPUT SHAFT			XS
						U ₁ (3)	V (2)	Key	
CM12B	15/16	2-11/16	1-11/16	3/8-16 TAP	3/4 DP.	7/8	2	3/16 x 3/16 x 1-1/4	2-5/8
CM16B	15/16	4-1/4	2-1/4	3/8-16 TAP	3/4 DP.	1-1/8	2-1/2	1/4 x 1/4 x 1-3/4	2-7/8
CM21B	1-1/8	4-25/32	1-23/32	1/2-13 TAP	13/16 DP.	1-1/2	3-1/4	3/8 x 3/8 x 2-1/2	4

Case Size	FOR MOTOR FRAMES:											
	48Y/56C											
	Wt. (Lbs.)	O (5)	R (6)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM	ZN
								U ₁ (8)	Keyway (7)			
CM12B	30	8-5/16	8-7/16	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	7-7/8	4-23/32
CM16B	61	9-5/16	9-11/16	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	9-13/16	6-1/8
CM21B	124	11-15/16	12-5/8	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	12-3/16	7-3/4

Case Size	FOR MOTOR FRAMES:											
	140TC/160ATC											
	Wt. (Lbs.)	O (5)	R (6)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (10)	ZM	ZN
								U ₁ (8)	Keyway (7)			
CM12B	30	8-5/16	8-7/16	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	7-7/8	4-23/32
CM16B	61	9-5/16	9-11/16	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	9-13/16	6-1/8
CM21B	124	11-15/16	12-5/8	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	12-3/16	7-3/4

Case Size	FOR MOTOR FRAMES:											
	180TC/180ATCZ (12)											
	Wt. (Lbs.)	O (5)	R (6)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (10)	ZM	ZN
								U ₁ (8)	Keyway (11)			
CM12B	...	...	...	...	...	...	...	...		...	...	...
CM16B	...	...	...	...	...	...	...	...		...	...	...
CM21B	142	13-1/8	12-5/8	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	13-1/16	8-7/16

- (1) "D" varies + 0, -1/32.

(2) Usable shaft length.

(3) +.0000 -.0005.

(4) 8 holes (4 top, 4 bottom)
- (5) At highest point.

(6) At widest point.

(7) Using 3/16 x 3/16 x 1-1/4 key.
- (8) +.001 + .002.

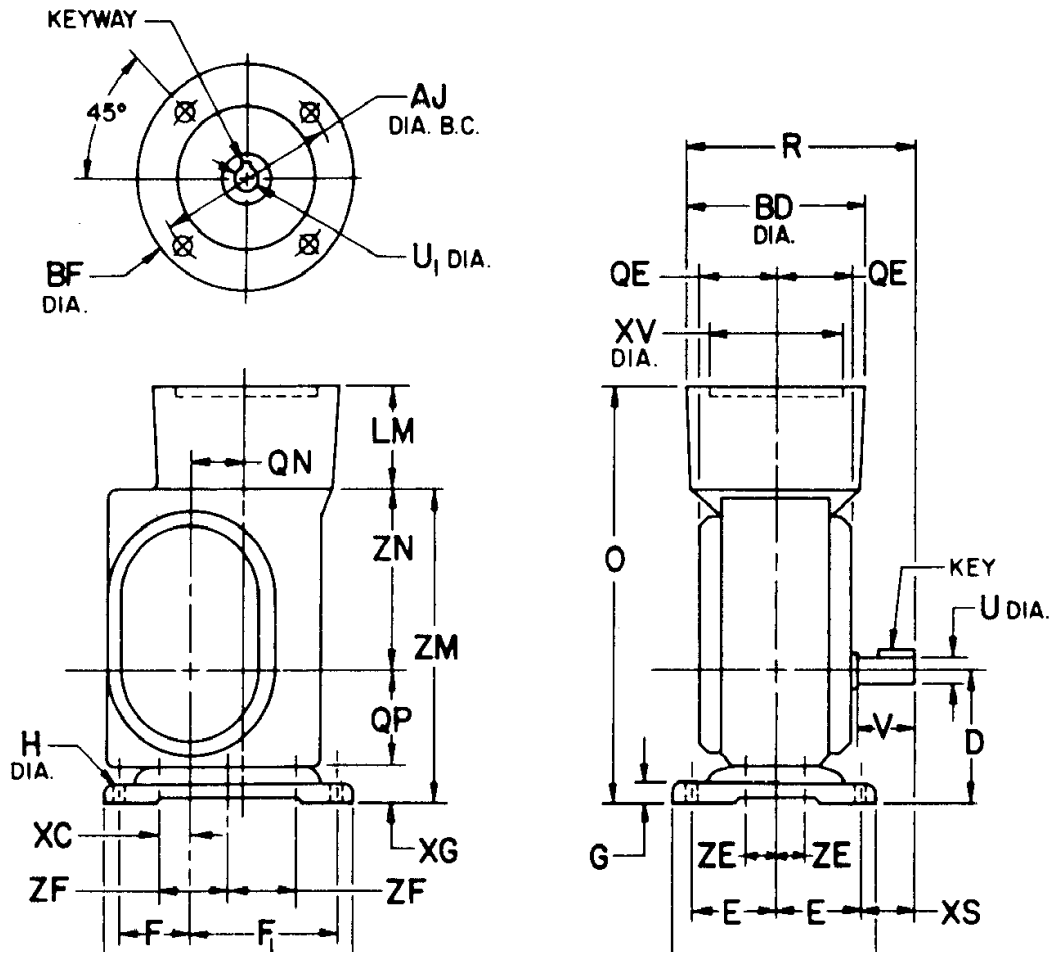
(9) +.001 + .003.

(10) +.000 + .002.
- (11) Using 1/4 x 1/4 x 1-3/4 key.

(12) ATCZ Shaft extn. must match TC extn.

XL Right Angle Reducer - J Mount

SIZES CM12J - CM40J



XL Right Angle Reducer - J Mount

SIZES CM12J - CM40J

Case Size	A	B	D (1)	E	F	F ₁	H	H 4 Holes	QE	QN	QP	XC	XG
CM12J	5-1/2	6-7/8	4-1/8	2-1/4	2-5/16	3-11/16	5/8	13/32	3-1/16	1-1/2	3-1/16	1-1/16	1-1/16
CM16J	8	8	5-17/32	3-1/2	2-7/8	4-1/8	3/4	13/32	3-9/16	2	3-19/32	1-5/8	1-15/16
CM21J	9-1/4	12-1/4	6-9/32	4	4-11/16	6-5/16	3/4	17/32	4-5/8	2-5/8	4-11/32	2-7/16	1-15/16
CM28J	9-1/4	12-1/4	7-1/2	4	5-3/16	5-13/16	3/4	17/32	5-7/8	3-1/2	5-9/16	2-15/16	1-15/16
CM40J	15	20-1/2	9-1/2	6-1/4	7-7/8	10-5/8	1-1/4	1-1/16	7-7/16	5	6-1/2	4-1/4	3

Case Size	ZE	ZF	ZH		OUTPUT SHAFT			XS
					U ₁ (3)	V (2)	Key	
CM12J	15/16	1-3/4	3/8-16 TAP	3/4 DP.	7/8	2	3/16 x 3/16 x 1-1/4	2-7/8
CM16J	15/16	2-3/16	3/8-16 TAP	3/4 DP.	1-1/8	2-1/2	1/4 x 1/4 x 1-3/4	2-5/8
CM21J	1-1/8	3-1/4	1/2-13 TAP	1-3/16 DP.	1-1/2	3-1/4	3/8 x 3/8 x 2-1/2	4
CM28J	1-1/8	3-1/4	1/2-13 TAP	1-3/16 DP.	2-1/8	4-9/16	1/2 x 1/2 x 3-1/2	6-9/16
CM40J	2-1/4	5-5/8	7/8-9 TAP	1-9/16 DP.	2-5/8	5-1/2	5/8 x 5/8 x 4	7-1/16

Case Size	FOR MOTOR FRAMES:											
	56C											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (8)	ZM	ZN
								U ₁ (7)	Keyway (10)			
CM12J	32	12-1/32	8-7/16	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	8-27/32	4-23/32
CM16J	63	14-27/32	9-11/16	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	11-21/32	6-1/8
CM21J	124	17-7/32	12-5/8	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	14-1/32	7-3/4
CM28J	215	21-5/32	16-7/16	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	17-31/32	10-15/32
CM40J	...	...	...	...	...	...	...	...	...	...	...	...

Case Size	FOR MOTOR FRAMES:											
	140TC/160ATC											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (8)	ZM (6)	ZN
								U ₁ (7)	Keyway (10)			
CM12J	32	12-1/32	8-7/16	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	8-27/32	4-23/32
CM16J	63	14-27/32	9-11/16	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	11-21/32	6-1/8
CM21J	124	17-7/32	12-5/8	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	14-1/32	7-3/4
CM28J	215	21-5/32	16-7/16	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	17-31/32	10-15/32
CM40J	...	...	...	...	...	...	...	...	...	...	...	...

Case Size	FOR MOTOR FRAMES:											
	180TC/180ATCZ (14)											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM (6)	ZN
								U ₁ (7)	Keyway (11)			
CM12J	...	...	...	...	...	...	...	...	...	...	...	...
CM16J	...	...	...	...	...	...	...	...	...	...	...	...
CM21J	142	18-7/8	12-5/8	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	14-23/32	8-7/16
CM28J	228	22-19/32	16-7/16	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	18-7/16	10-15/16
CM40J	595	29-21/32	20-3/4	7-1/4	9	17/32	8-15/32	1-1/8	1/4 x 1/8	8-1/2	21-3/16	11-11/16

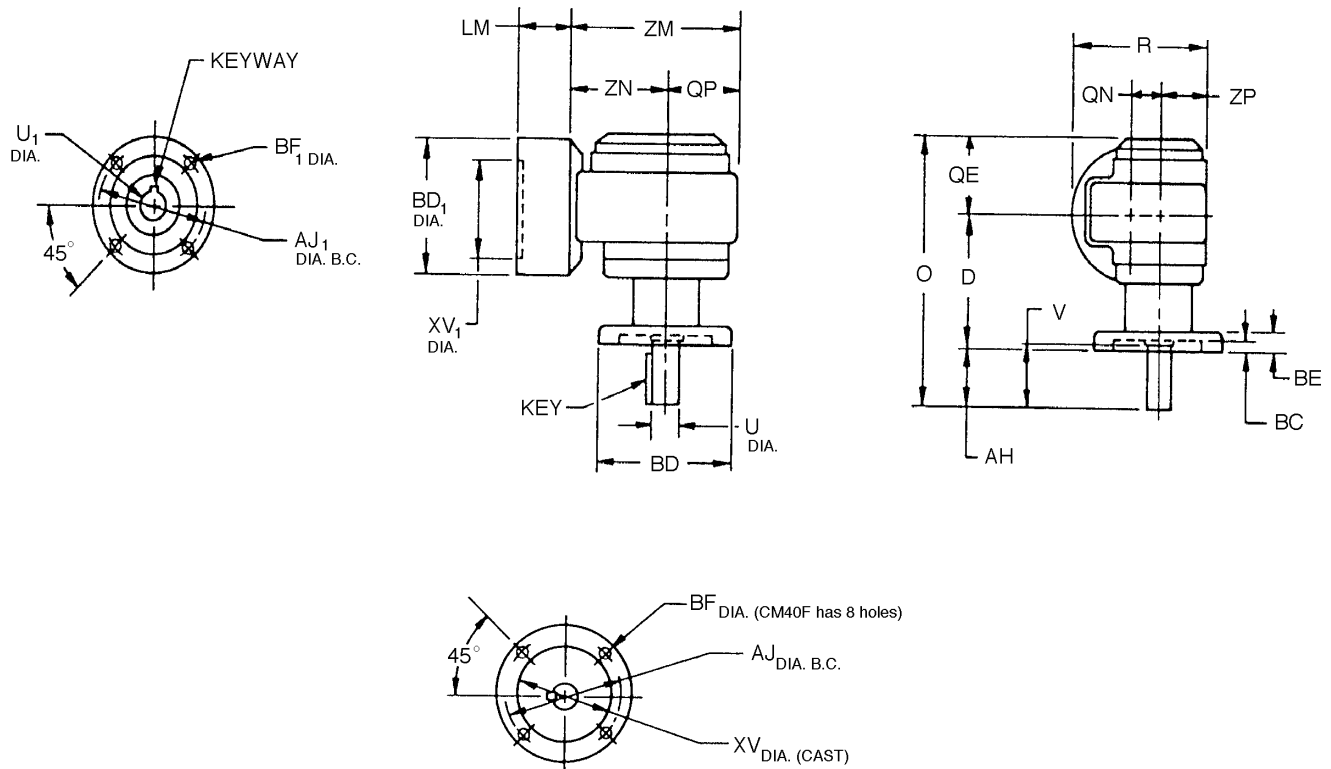
Case Size	FOR MOTOR FRAMES:											
	210TC/210ATCZ (14)											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM (6)	ZN
								U ₁ (7)	Keyway (12)			
CM28J	238	23-3/32	16-7/16	7-1/4	9	17/32	4-21/32	1-3/8	5/16 x 5/32	8-1/2	18-7/16	10-15/16
CM40J	605	29-21/32	20-3/4	7-1/4	9	17/32	8-15/32	1-3/8	5/16 x 5/32	8-1/2	21-3/16	11-11/16

Case Size	FOR MOTOR FRAMES:											
	210TC/210ATCZ (14)											
	Wt. (Lbs.)	O (4)	R (5)	AJ	BD	BF 4 Holes	LM	Input Bore		XV (9)	ZM (6)	ZN
								U ₁ (7)	Keyway (13)			
CM28J	...	...	...	...	...	...	...	...	...	...	...	...
CM40J	605	29-21/32	20-3/4	7-1/4	9	17/32	8-15/32	1-5/8	3/8 x 3/16	8-1/2	21-3/16	11-11/16

- | | | | |
|----------------------------|----------------------------|--------------------|---|
| (1) "D" varies + 0, -1/32. | (4) At highest point. | (7) + .001 + .002. | (10) Using 3/16 x 3/16 x 1-1/4 key. |
| (2) Usable shaft length. | (5) At widest point. | (8) + .001 + .003. | (11) Using 1/4 x 1/4 x 1-3/4 key. |
| (3) +.0000 -.0005. | (6) Includes bolt-on foot. | (9) + .000 + .002. | (12) Using 5/16 x 5/16 x 2-1/4 key. |
| | | | (13) Using 3/8 x 3/8 x 2-3/4 key |
| | | | (14) ATCZ Shaft extn. must match TC extn. |

XL Right Angle Reducer - Flange Mount

SIZES CM12F - CM40F



XL Right Angle Reducer - Flange Mount

SIZES CM12F - CM40F

Case Size	D (1)	BE	BF (4) 4 Holes	AH	AJ	BC	BD	QE	QN	QP	XV	ZP	OUTPUT SHAFT		
													U (3)	V (2)	Key
CM12F	4-7/8	7/16	13/32	2	4	1/8	5	3-1/16	1-1/2	3-1/8	3	2-7/16	7/8	2-1/8	3/16 x 3/16 x 1-1/4
CM16F	5-1/8	1/2	13/32	2-1/2	6-1/8	1/8	7	3-9/16	2	3-21/32	5-1/4	2-15/16	1-1/8	2-5/8	1/4 x 1/4 x 1-3/4
CM21F	6-7/8	5/8	17/32	3-3/16	8-1/2	1/16	10	4-5/8	2-5/8	4-13/32	6-3/4	4-1/16	1-1/2	3-1/4	3/8 x 3/8 x 2-1/2
CM28F	7-13/16	5/8	17/32	4-1/2	12-1/2	1/16	14	5-7/8	3-1/2	5-11/16	10-5/8	5-7/16	2-1/8	4-9/16	1/2 x 1/2 x 3-1/2
CM40F	10	3/4	17/32	3-5/16	15-1/4	1/8	16-1/2	7-7/16	5	6-11/16	13-1/2	6-5/8	2-5/8	5-1/2	5/8 x 5/8 x 4

Case Size	FOR MOTOR FRAMES:											
	48Y/56C											
	Wt. (Lbs.)	O (5)	R (6)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (9)	ZM	ZN
								U ₁ (8)	Keyway (11)			
CM12F	34	10-3/16	7-1/4	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	7-27/32	4-23/32
CM16F	66	11-3/16	8-1/4	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	9-25/32	6-1/8
CM21F	121	14-11/16	10	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	12-5/32	7-3/4
CM28F	226	18-3/16	12-1/4	5-7/8	6-5/8	13/32	3-3/16	5/8	3/16 x 3/32	4-1/2	16-5/32	10-15/32
CM40F	...	...	...	...	...	...	...	...	...	...	...	...

Case Size	FOR MOTOR FRAMES:											
	140TC/160ATC											
	Wt. (Lbs.)	O (5)	R (6)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (9)	ZM	ZN
								U ₁ (8)	Keyway (11)			
CM12F	34	10-3/16	7-1/4	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	7-27/32	4-23/32
CM16F	66	11-3/16	8-1/4	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	9-25/32	6-1/8
CM21F	121	14-11/16	10	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	12-5/32	7-3/4
CM28F	226	18-3/16	12-1/4	5-7/8	6-5/8	13/32	3-3/16	7/8	3/16 x 3/32	4-1/2	16-5/32	10-15/32
CM40F	...	...	...	...	...	...	...	...	...	...	...	...

Case Size	FOR MOTOR FRAMES:											
	180TC/180ATCZ (7)											
	Wt. (Lbs.)	O (5)	R (6)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (10)	ZM	ZN
								U ₁ (8)	Keyway (12)			
CM12F	...	...	...	...	...	...	...	...	...	...	...	...
CM16F	...	...	...	...	...	...	...	...	...	...	...	...
CM21F	139	14-11/16	11-3/16	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	12-27/32	8-7/16
CM28F	239	18-3/16	13-7/16	7-1/4	9	17/32	4-5/32	1-1/8	1/4 x 1/8	8-1/2	16-5/8	10-15/16
CM40F	575	20-3/4	16-23/32	7-1/4	9	17/32	8-15/32	1-1/8	1/4 x 1/8	8-1/2	21-3/16	11-11/16

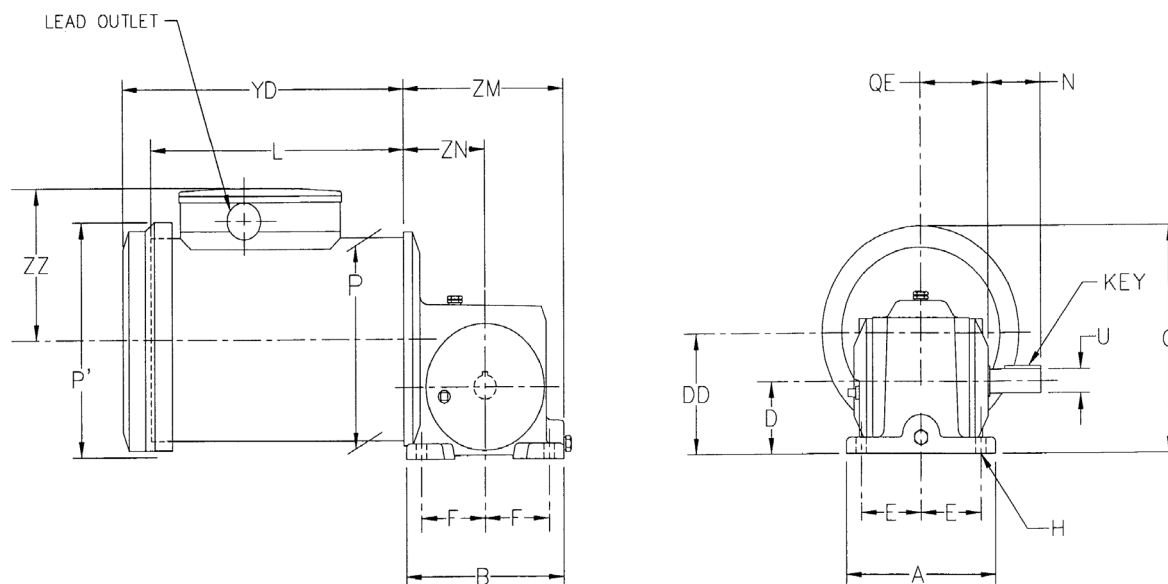
Case Size	FOR MOTOR FRAMES:											
	210TC/210ATCZ (7)											
	Wt. (Lbs.)	O (5)	R (6)	AJ ₁	BD ₁	BF ₁ 4 Holes	LM	Input Bore		XV ₁ (10)	ZM	ZN
								U ₁ (8)	Keyway (13)			
CM21F	149	14-11/16	11-3/16	7-1/4	9	17/32	4-21/32	1-3/8	5-16 x 5/32	8-1/2	12-27/32	8-7/16
CM28F	249	18-3/16	13-7/16	7-1/4	9	17/32	4-21/32	1-3/8	5-16 x 5/32	8-1/2	16-5/8	10-15/16
CM40F	585	20-3/4	16-23/32	7-1/4	9	17/32	8-15/32	1-3/8	5-16 x 5/32	8-1/2	18-3/8	11-11/16

Case Size	FOR MOTOR FRAMES:											
	210TC/210ATCZ (7)											
	Wt. (Lbs.)	O (5)	R (6)	AJ ₁	BD ₁	BF ₁ Holes	LM	Input Bore		XV ₁ (10)	ZM	ZN
								U ₁ (8)	Keyway (14)			
CM21F	...	...	...	...	...	...	...	...	...	...	...	...
CM28F	...	...	...	...	...	...	...	...	...	...	...	...
CM40F	585	20-3/4	16-23/32	7-1/4	9	17/32	8-15/32	1-5/8	3/8 x 3/16	8-1/2	18-3/8	11-11/16

- | | | | |
|----------------------------|--|--------------------|-------------------------------------|
| (1) "D" varies + 0, -1/32. | (5) At highest point. | (8) +.001 + .002. | (11) Using 3/16 x 3/16 x 1-1/4 key. |
| (2) Usable shaft length. | (6) At widest point. | (9) +.001 + .003. | (12) Using 1/4 x 1/4 x 1-3/4 key. |
| (3) +.0000 -.0005. | (7) ATCZ Shaft extn. must match TC extn. | (10) +.000 + .002. | (13) Using 5/16 x 5/16 x 2-1/4 key. |
| (4) CM40F has (8) holes | | | (14) Using 3/8 x 3/8 x 2-3/4 key |

XL Right Angle Gearmotor

SIZES WG12A - WG40A



GEAR CASE	A	B	D	DD	E	F	H	N	U		KEY		QE
									MIN.	MAX.	SQ.	LGTH.	
WG12A	5.00	5.25	2.25	3.75	2.00	2.13	11/32	1.81	.749	.75	.1875	1.00	2.25
WG16A	5.50	6.88	2.50	4.50	2.25	3.00	13/32	2.06	.874	.875	.1875	1.25	2.50
WG21A	8.00	8.00	3.38	6.00	3.50	3.50	13/32	2.56	1.124	1.125	.250	1.75	3.44
WG28A	9.50	9.75	4.00	7.50	4.00	4.00	17/32	3.38	1.499	1.500	.375	2.50	4.50
WG40A	12.75	13.75	5.75	10.75	5.50	6.00	29/32	4.88	2.124	2.125	.500	3.75	5.75

GEAR CASE	O				ZM				ZN			
	56/140	180T	210T	250T	56/140	180T	210T	250T	56/140	180T	210T	250T
WG12A	7.06	...	...	...	5.34	...	...	...	2.72	...	...	...
WG16A	7.81	...	...	...	6.94	...	...	...	3.50	...	...	...
WG21A	9.31	10.62	11.25	...	8.25	8.59	8.59	...	4.25	4.59	4.59	...
WG28A	10.81	12.12	12.75	14.13	10.59	10.85	10.85	10.85	5.71	5.97	5.97	5.97
WG40A	...	15.38	16	17.38	...	12.69	12.69	12.69	...	5.81	5.81	5.81

Motor Frame			L	YD	P	P'	ZZ
OPEN	TENV	TEFC					
DB56	FB56	-	8.33	-	6.50	-	-
DB56	FC56	-	8.33	-	6.50	-	-
-	-	FC56	-	9.54	6.50	7.28	4.81
-	-	FD56	-	10.6	6.50	7.28	4.81
-	-	FC140T	-	9.54	6.50	7.28	4.81
-	-	FD140T	-	10.6	6.50	7.28	4.81

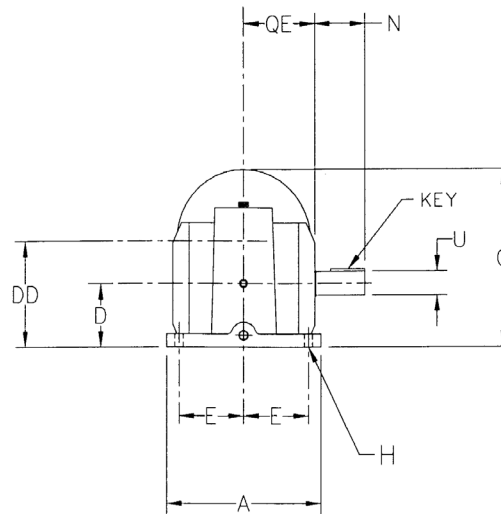
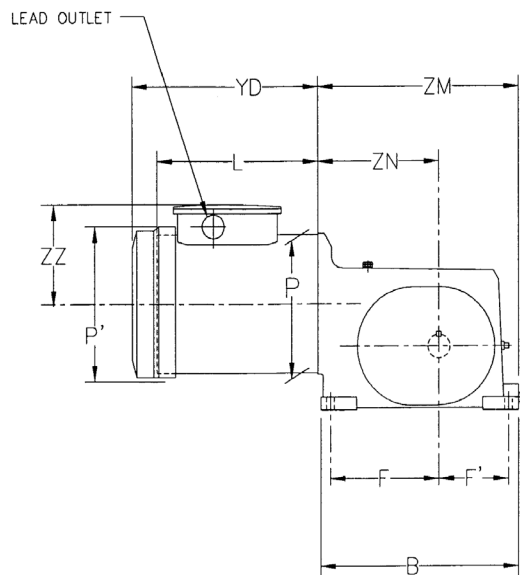
Motor Frame	OPEN/TENV L*	TEFC ONLY YD*	P	TEFC ONLY P'
182T	13.13	15.25	9.25	9
184T				
213T	15.63	17.75	10.5	10.5
215T				
254T	19.13	21.13	13.25	13.25
256T				

NOTE: Modified 180 Frames are longer than shown.
 56/140T does not apply to WG40A.
 180T/210T/250T does not apply to WG12A or WG16A.

* For WG40 only, add 8.25, to L and YD Dimensions.

XL Right Angle Gearmotor

SIZES CG12A - CG40A



GEAR CASE	A	B	D	DD	E	F	F'	H	N	U		KEY	
										MIN.	MAX.	SQ.	LGTH.
CG12A	6.00	8.00	2.50	4.00	2.50	4.00	3.00	11/32	2.06	0.874	0.875	0.188	1.25
CG16A	7.75	10.00	3.00	5.00	3.25	5.50	3.50	13/32	2.56	1.124	1.125	0.250	1.75
CG21A	9.25	12.25	4.00	6.62	4.00	7.00	4.00	17/32	3.38	1.499	1.500	0.375	2.50
CG28A	11.12	16.12	5.12	8.62	4.50	9.06	4.94	21/32	4.69	2.124	2.125	0.500	3.50
CG40A	15.00	20.88	6.50	11.50	6.25	11.88	6.62	1-1/32	5.88	2.624	2.625	0.625	4.00

GEAR CASE	O				ZM				ZN				QE
	56/140	180T	210T	250T	56/140	180T	210T	250T	56/140	180T	210T	250T	
CG12A	7.31	...	...	...	8.22	...	...	...	4.72	...	...	...	3.06
CG16A	8.31	...	...	...	10.13	...	...	...	6.13	...	...	...	3.56
CG21A	9.94	11.25	11.88	...	12.38	12.85	12.85	...	7.75	8.22	8.22	...	4.63
CG28A	11.94	13.25	13.88	15.25	16.94	16.72	16.72	16.72	10.47	10.72	10.72	10.72	5.88
CG40A	...	16.13	16.75	18.13	...	19.5	19.5	19.5	...	11.69	11.69	11.69	7.44

Motor Frame			L	YD	P	P'	ZZ
OPEN	TENV	TEFC					
DB56	FB56	-	8.33	-	6.5	-	-
DB56	FC56	-	8.33	-	6.5	-	-
-	-	FC56	-	9.54	6.5	7.28	4.81
-	-	FD56	-	10.6	6.5	7.28	4.81
-	-	FC140T	-	9.54	6.5	7.28	4.81
-	-	FD140T	-	10.6	6.5	7.28	4.81

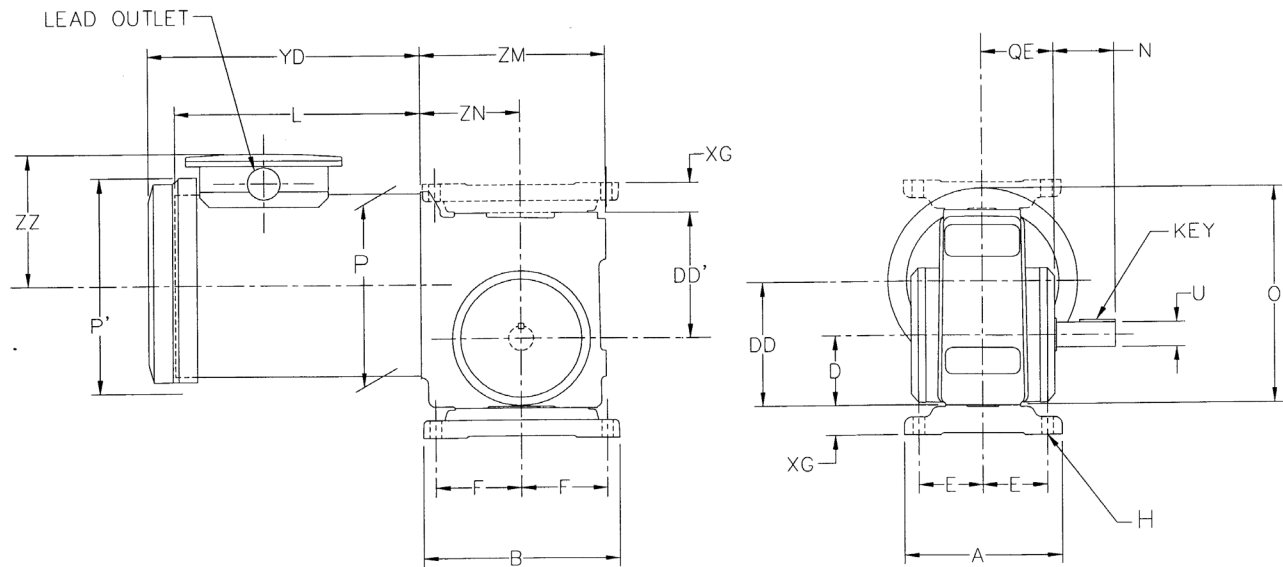
Motor Frame	OPEN/TENV L*	TEFC ONLY YD*	P	TEFC ONLY P'
182T 184T	13.13	15.25	9.25	9
213T 215T	15.63	17.75	10.5	10.5
254T 256T	19.13	21.13	13.25	13.25

NOTE: Modified 180 Frames are longer than shown.
56/140T does not apply to CG40A.
180T/210T/250T does not apply to CG12A or CG16A.

* For CG40 only, add 8.25, to L and YD Dimensions.

XL Right Angle Gearmotor - Multimount

SIZES WG12B - WG28B



GEAR CASE	A	B	D	DD	DD'	E	F	H	N	U		KEY		QE	XG
										MIN.	MAX.	SQ.	LGTH.		
WG12B	5.00	5.25	2.18	3.68	3.93	2.00	2.13	11/32	1.81	0.749	0.750	0.188	1.00	2.25	1.06
WG16B	5.50	6.88	2.43	4.43	4.43	2.25	3.00	13/32	2.06	0.874	0.875	0.188	1.25	2.50	1.06
WG21B	8.00	8.00	3.30	5.93	5.30	3.50	3.50	13/32	2.56	1.124	1.125	0.250	1.75	3.44	1.94
WG28B	9.25	9.25	4.05	7.55	6.18	4.00	4.00	17/32	3.38	1.499	1.500	0.375	2.50	4.50	1.94

GEAR CASE	O				ZM				ZN			
	56/140	180T	210T	250T	56/140	180T	210T	250T	56/140	180T	210T	250T
WG12B	7.00	...	...	...	5.00	...	...	...	2.72	...	...	...
WG16B	7.75	...	...	...	6.47	...	...	...	3.50	...	...	...
WG21B	8.61	10.56	10.56	...	7.91	8.25	8.25	...	4.25	4.59	4.59	...
WG28B	10.87	10.81	12.81	14.18	10.40	10.66	10.66	10.66	5.71	5.97	5.97	5.97

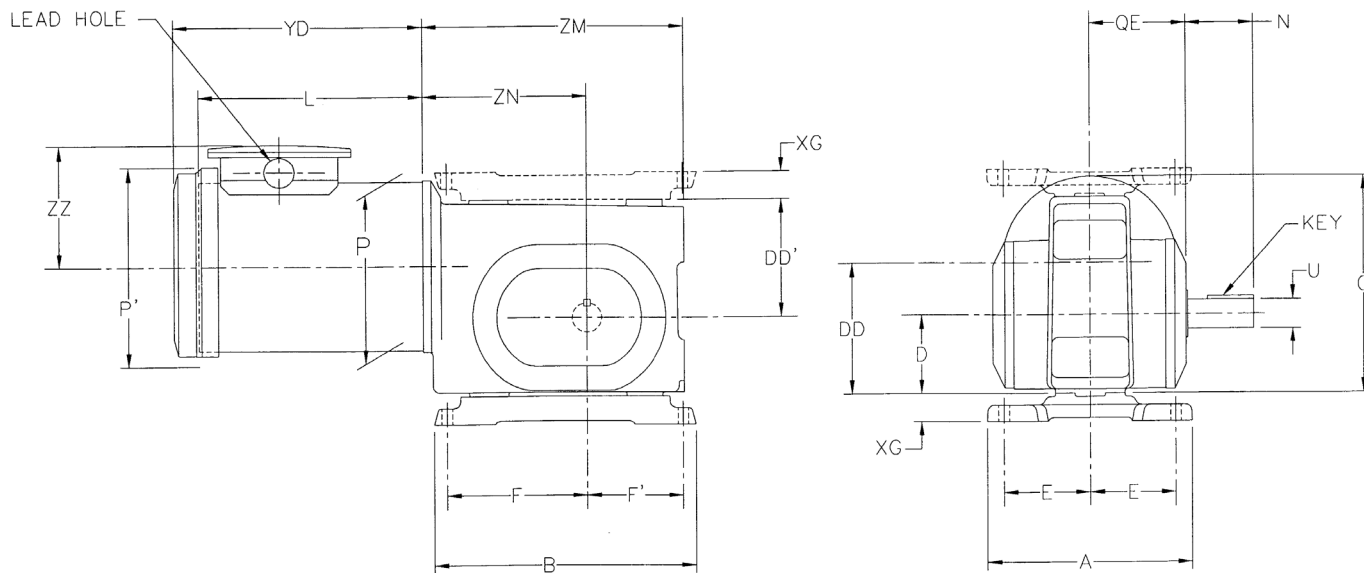
Motor Frame			L	YD	P	P'	ZZ
OPEN	TENV	TEFC					
DB56	FB56	-	8.33	-	6.50	-	-
DB56	FC56	-	8.33	-	6.50	-	-
-	-	FC56	-	9.54	6.50	7.28	4.81
-	-	FD56	-	10.60	6.50	7.28	4.81
-	-	FC140T	-	9.54	6.50	7.28	4.81
-	-	FD140T	-	10.60	6.50	7.28	4.81

Motor Frame	OPEN/TENV L*	TEFC ONLY YD*	P	TEFC ONLY P'
182T	13.13	15.25	9.25	9
184T				
213T	15.63	17.75	10.50	10.50
215T				
254T	19.13	21.13	13.25	13.25
256T				

NOTE: Modified 180 Frames are longer than shown.
180T/210T/250T does not apply to WG12B or WG16B.

XL Right Angle Gearmotor - Multimount

SIZES CG12B - CG21B



GEAR CASE	A	B	D	DD	DD'	E	F	F'	H	N	U		KEY		QE
											MIN.	MAX.	SQ.	LGTH.	
CG12B	6.00	8.00	2.43	3.93	3.93	2.00	4.00	3.00	13/32	2.06	0.874	0.875	0.188	1.25	3.06
CG16B	7.75	10.00	2.93	4.93	4.43	3.25	5.50	3.50	13/32	2.56	1.124	1.125	0.250	1.75	3.56
CG21B	9.25	12.25	4.05	6.68	5.30	4.00	7.00	4.00	17/32	3.38	1.499	1.500	0.375	2.50	4.63

GEAR CASE	XG	O			ZM			ZN		
		56/140	180T	210T	56/140	180T	210T	56/140	180T	210T
CG12B	1.06	7.25	...	...	7.88	...	...	4.72	...	...
CG16B	1.06	8.25	...	...	9.81	...	...	6.13	...	...
CG21B	1.94	10	11.31	11.93	12.19	12.66	12.66	7.75	8.22	8.22

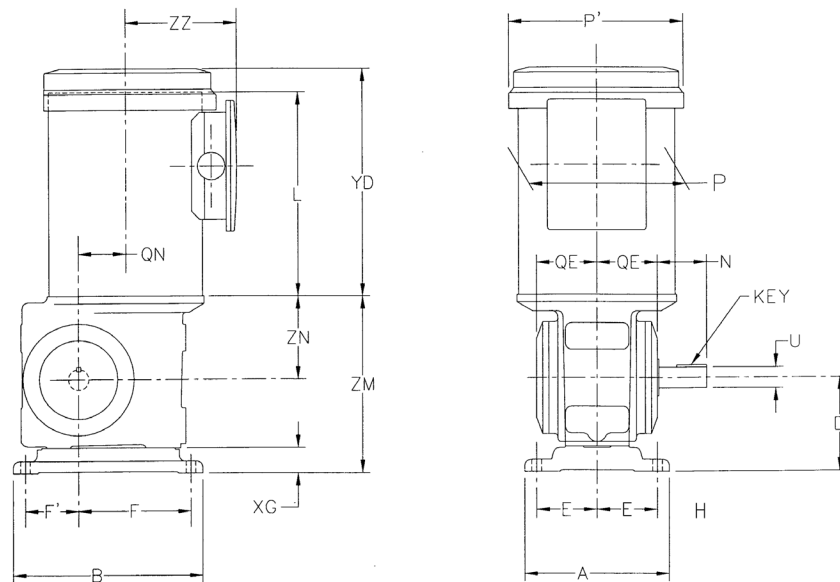
Motor Frame			L	YD	P	P'	ZZ
OPEN	TENV	TEFC					
DB56	FB56	-	8.33	-	6.50	-	-
DB56	FC56	-	8.33	-	6.50	-	-
-	-	FC56	-	9.54	6.50	7.28	4.81
-	-	FD56	-	10.60	6.50	7.28	4.81
-	-	FC140T	-	9.54	6.50	7.28	4.81
-	-	FD140T	-	10.60	6.50	7.28	4.81

Motor Frame	OPEN/TENV L*	TEFC ONLY YD*	P	TEFC ONLY P'
182T 184T	13.13	15.25	9.25	9
213T 215T	15.63	17.75	10.50	10.50

NOTE: Modified 180 Frames are longer than shown.
180T/210T/250T does not apply to WG12B or WG16B.

XL Right Angle Gearmotor - J Mount

SIZES WG12J - WG40J



GEAR CASE	A	B	D	E	F	F'	H	N	U		KEY	
									MIN.	MAX.	SQ.	LGTH.
WG12J	5.50	6.88	3.24	2.25	4.00	2.00	13/32	1.81	0.749	0.750	0.188	1.00
WG16J	6.00	8.00	3.92	2.50	4.75	2.25	13/32	2.06	0.874	0.875	0.188	1.25
WG21J	9.25	12.25	5.49	4.00	6.31	4.69	17/32	2.56	1.124	1.125	0.250	1.75
WG28J	9.25	12.25	6.49	4.00	6.63	4.37	17/32	3.38	1.499	1.500	0.375	2.50
WG40J	15.00	20.50	9.99	6.25	10.63	7.87	1-1/16	4.88	2.124	2.125	0.500	3.75

GEAR CASE	QE	QN	XG	ZM				ZN			
				56/140	180T	210T	250T	56/140	180T	210T	250T
WG12J	2.25	1.50	1.06	5.97	...	...	...	2.72	...	...	...
WG16J	2.50	2	1.06	7.42	...	...	...	3.50	...	...	...
WG21J	3.44	2.625	1.94	9.74	10.08	10.08	...	4.25	4.59	4.59	...
WG28J	4.50	3.50	1.94	12.20	12.46	12.46	12.46	5.71	5.97	5.97	5.97
WG40J	5.75	5	3	...	15.80	15.80	15.80	...	5.81	5.81	5.81

Motor Frame			L	YD	P	P'	ZZ
OPEN	TENV	TEFC					
DB56	FB56	-	8.33	-	6.50	-	-
DB56	FC56	-	8.33	-	6.50	-	-
-	-	FC56	-	9.54	6.50	7.28	4.81
-	-	FD56	-	10.60	6.50	7.28	4.81
-	-	FC140T	-	9.54	6.50	7.28	4.81
-	-	FD140T	-	10.60	6.50	7.28	4.81

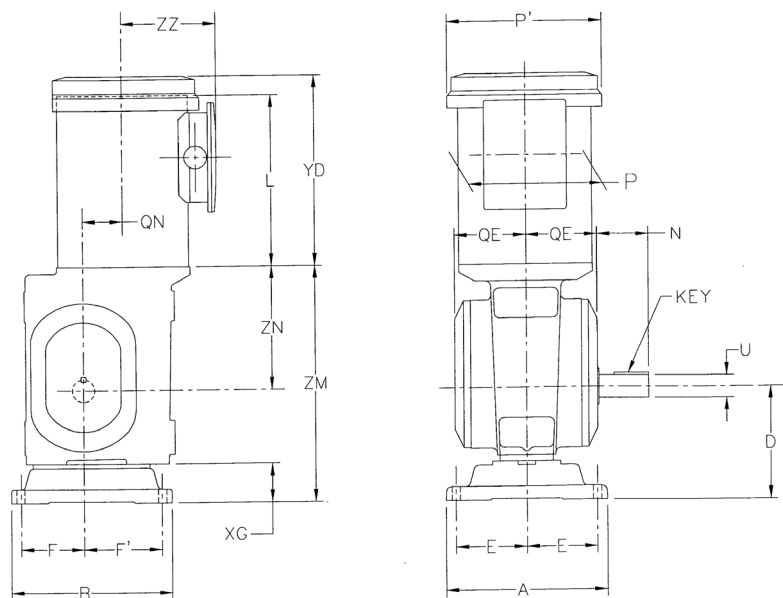
Motor Frame	OPEN/TENV L*	TEFC ONLY YD*	P	TEFC ONLY P'
182T	13.13	15.25	9.25	9
184T				
213T	15.63	17.75	10.50	10.50
215T				
254T	19.13	21.13	13.25	13.25
256T				

NOTE: Modified 180 Frames are longer than shown.
180T/210T does not apply to W12, W16, C12, or C16.

* For WG40 only, add 8.25, to L and YD Dimensions.

XL Right Angle Gearmotor - J Mount

SIZES CG12J - CG40J



GEAR CASE	A	B	D	E	F	F ₂	H	N	U		KEY	
									MIN.	MAX.	SQ.	LGTH.
CG12J	5.50	6.88	4.11	2.25	2.31	3.69	13/32	2.06	0.874	0.875	0.188	1.25
CG16J	8.00	8.00	5.52	3.50	2.88	4.12	13/32	2.56	1.124	1.125	0.250	1.75
CG21J	9.25	12.25	6.27	4.00	4.69	6.31	17/32	3.38	1.499	1.500	0.375	2.50
CG28J	9.25	12.25	7.49	4.00	5.19	5.81	17/32	4.69	2.124	2.125	0.500	3.50
CG40J	15.00	20.50	9.50	6.25	7.88	10.62	1-1/16	5.88	2.624	2.625	0.625	4.00

GEAR CASE	QE	QN	XG	ZM				ZN			
				56/140	180T	210T	250T	56/140	180T	210T	250T
CG12J	3.06	1.50	1.06	8.83	...	...	...	4.72	...	...	...
CG16J	3.56	2.00	1.94	11.65	...	...	...	6.13	...	...	...
CG21J	4.63	2.625	1.94	14.02	14.72	14.72	...	7.75	8.44	8.44	...
CG28J	5.88	3.50	1.94	17.96	18.21	18.21	18.21	10.47	10.72	10.72	10.72
CG40J	7.44	5.00	3.00	...	21.19	21.19	21.19	...	11.69	11.69	11.69

Motor Frame			L	YD	P	P ¹	ZZ
OPEN	TENV	TEFC					
DB56	FB56	-	8.33	-	6.50	-	-
DB56	FC56	-	8.33	-	6.50	-	-
-	-	FC56	-	9.54	6.50	7.28	4.81
-	-	FD56	-	10.60	6.50	7.28	4.81
-	-	FC140T	-	9.54	6.50	7.28	4.81
-	-	FD140T	-	10.60	6.50	7.28	4.81

Motor Frame	OPEN/TENV L*	TEFC ONLY YD*	P	TEFC ONLY P ¹
182T	13.13	15.25	9.25	9
184T				
213T	15.63	17.75	10.50	10.50
215T				
254T	19.13	21.13	13.25	13.25
256T				

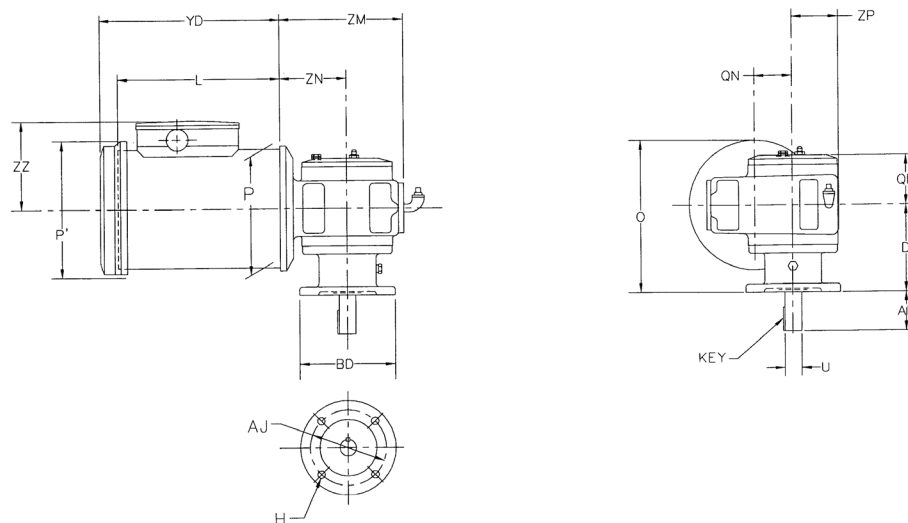
NOTE: Modified 180 Frames are longer than shown.
180T/210T does not apply to W12, W16, C12, or C16.

* For CG40 only, add 8.25, to L and YD Dimensions.

XL Right Angle Gearmotor

Flange Mount

SIZES WG12F - WG40F



GEAR CASE	D	H	AH	U		KEY		AJ	BD	QE	QN	ZP
				MIN.	MAX.	SQ.	LGTH.					
WG12F	3.75	5/16	1.81	0.749	0.750	0.188	1.00	3.125	4.00	2.25	1.50	2.19
WG16F	4.63	13/32	2.06	0.874	0.875	0.188	1.25	4.00	5.00	2.50	2.00	2.44
WG21F	5.88	13/32	2.44	1.124	1.125	0.250	1.75	6.125	7.00	3.44	2.625	3.31
WG28F	6.88	17/32	3.19	1.499	1.500	0.375	2.50	8.50	10.00	4.50	3.50	4.06
WG40F	7.13	17/32	3.50	2.124	2.125	0.500	3.75	15.25	16.50	5.75	5.00	5.63

GEAR CASE	O				ZM				ZN			
	56/140	180T	210T	250T	56/140	180T	210T	250T	56/140	180T	210T	250T
WG12F	7.06	...	...	...	5.00	...	...	...	2.72	...	...	...
WG16F	7.94	...	...	...	6.47	...	...	...	3.50	...	...	...
WG21F	9.31	10.50	11.13	...	7.91	8.25	8.25	...	4.25	4.59	4.59	...
WG28F	11.38	11.50	12.13	13.50	10.40	10.66	10.66	10.66	5.71	5.97	5.97	5.97
WG40F	...	11.75	12.38	13.75	...	13.00	13.00	13.00	...	5.81	5.81	5.81

Motor Frame			L	YD	P	P'	ZZ
OPEN	TENV	TEFC					
DB56	FB56	-	8.33	-	6.50	-	-
DB56	FC56	-	8.33	-	6.50	-	-
-	-	FC56	-	9.54	6.50	7.28	4.81
-	-	FD56	-	10.60	6.50	7.28	4.81
-	-	FC140T	-	9.54	6.50	7.28	4.81
-	-	FD140T	-	10.60	6.50	7.28	4.81

Motor Frame	OPEN/TENV L*	TEFC ONLY YD*	P	TEFC ONLY P'
182T 184T	13.13	15.25	9.25	9
213T 215T	15.63	17.75	10.50	10.50
254T 256T	19.13	21.13	13.25	13.25

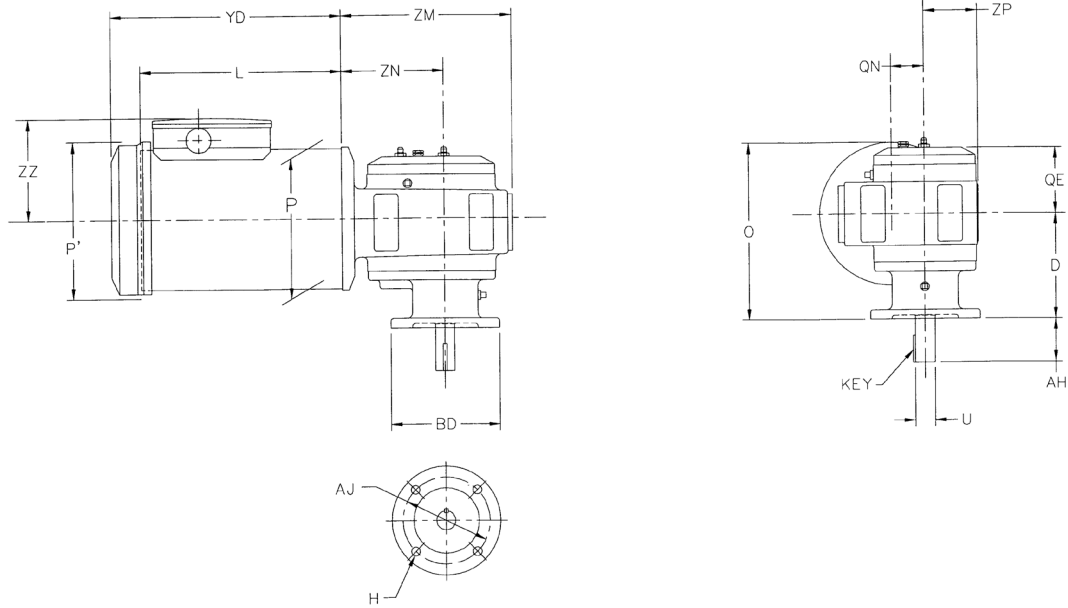
NOTE: Modified 180 Frames are longer than shown.
180T/210T does not apply to W12, W16, C12, or C16.

* For WG40 only, add 8.25, to L and YD Dimensions.

XL Right Angle Gearmotor

Flange Mount

SIZES CG12F - CG40F



GEAR CASE	D	H	AH	U		KEY		AJ	BD	QE	QN	ZP
				MIN.	MAX.	SQ.	LGTH.					
CG12F	4.88	13/32	2.00	0.874	0.875	0.188	1.25	4.00	5.00	3.06	1.50	2.44
CG16F	5.13	13/32	2.50	1.124	1.125	0.250	1.75	6.125	7.00	3.56	2.00	2.94
CG21F	6.88	17/32	3.19	1.499	1.500	0.375	2.50	8.50	10.00	4.63	2.625	4.06
CG28F	7.81	17/32	4.50	2.124	2.125	0.500	3.50	12.50	14.00	5.88	3.50	5.25
CG40F	10.00	17/32	3.31	2.624	2.625	0.625	4.00	15.25	16.50	7.44	5.00	6.61

GEAR CASE	O				ZM				ZN			
	56/140	180T	210T	250T	56/140	180T	210T	250T	56/140	180T	210T	250T
CG12F	8.19	...	...	...	7.88	...	...	...	4.72	...	...	...
CG16F	8.69	...	...	...	9.81	...	...	...	6.13	...	...	...
CG21F	11.51	11.51	12.13	...	12.19	12.66	12.66	...	7.75	8.22	8.22	...
CG28F	12.50	12.44	13.06	14.44	16.16	16.41	16.41	16.41	10.47	10.72	10.72	10.72
CG40F	...	14.63	15.25	16.63	...	18.38	18.38	18.38	...	11.69	11.69	11.69

Motor Frame			L	YD	P	P'	ZZ
OPEN	TENV	TEFC					
DB56	FB56	-	8.33	-	6.50	-	-
DB56	FC56	-	8.33	-	6.50	-	-
-	-	FC56	-	9.54	6.50	7.28	4.81
-	-	FD56	-	10.60	6.50	7.28	4.81
-	-	FC140T	-	9.54	6.50	7.28	4.81
-	-	FD140T	-	10.60	6.50	7.28	4.81

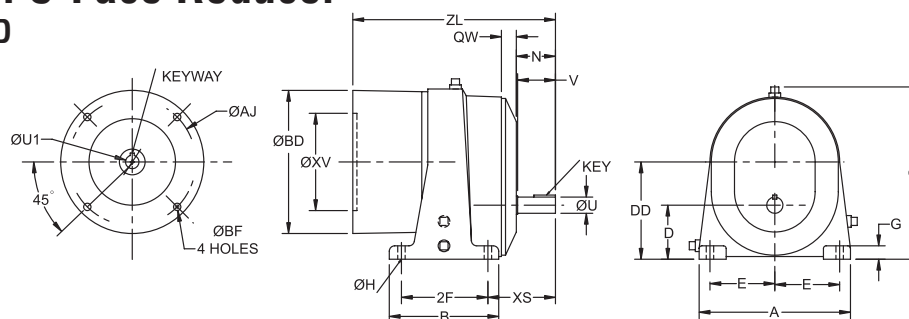
Motor Frame	OPEN/TENV L*	TEFC ONLY YD*	P	TEFC ONLY P'
182T 184T	13.13	15.25	9.25	9
213T 215T	15.63	17.75	10.50	10.50
254T 256T	19.13	21.13	13.25	13.25

NOTE: Modified 180 Frames are longer than shown.
180T/210T does not apply to W12, W16, C12, or C16.

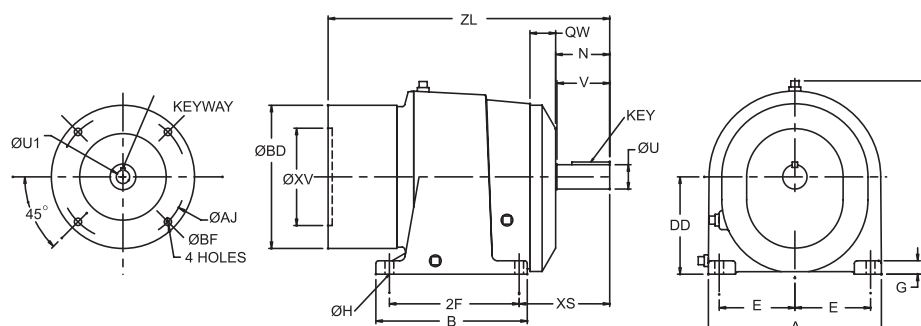
* For CG40 only, add 8.25, to L and YD Dimensions.

XL Parallel C-Face Reducer

FOOT MOUNTED



SINGLE REDUCTION



DOUBLE AND TRIPLE REDUCTION

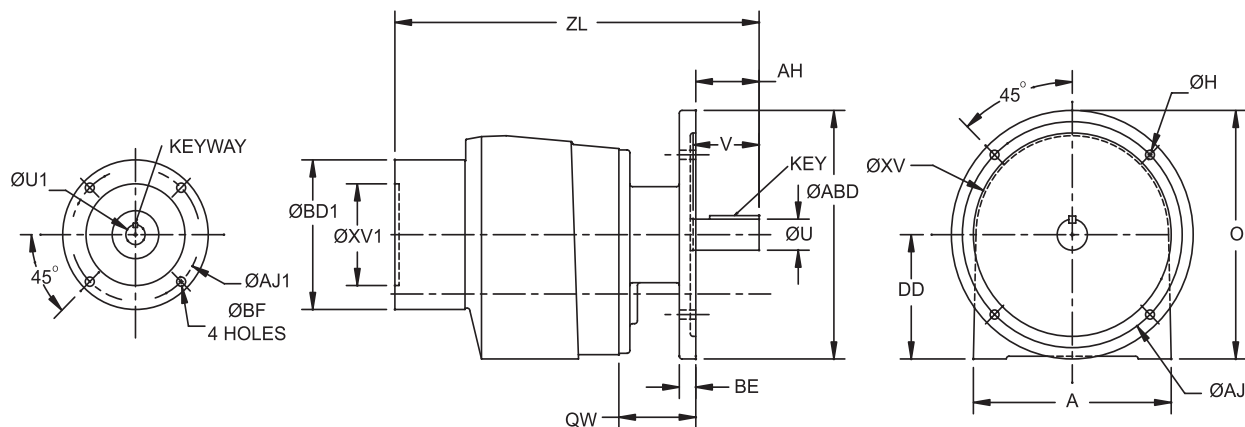
	Reducer Size	A	B	XS	D	DD	E	2F	G	H 4 Holes	N	QW	Output Shaft		
													U (5)	V (6)	Key
Single Reduction	SM16A	7.00	5.06	3.13	2.50	4.50	3.00	4.00	0.63	0.34	1.81	0.69	0.750	1.75	3/16 x 3/16 x 1-1/4
	SM21A	7.75	6.13	4.75	3.50	6.13	3.25	5.00	0.75	0.41	2.56	1.50	1.125	2.50	1/4 x 1/4 x 1-3/4
	SM28A	9.50	8.75	5.50	4.50	8.00	3.94	7.50	0.88	0.66	3.13	1.63	1.375	3.00	5/16 x 5/16 x 2
Double Reduction	DM16A	8.00	7.00	4.31	---	4.50	3.50	6.00	0.63	0.41	2.50	1.19	1.125	2.44	1/4 x 1/4 x 1-3/4
	DM21A	9.00	8.25	5.25	---	5.50	3.75	7.00	0.81	0.53	3.13	1.44	1.375	3.00	5/16 x 5/16 x 2-1/4
	DM28A	11.63	10.81	6.88	---	6.50	4.75	9.25	0.88	0.66	4.44	1.63	2.000	4.25	1/2 x 1/2 x 3
Triple Reduction	TM16A	8.00	9.25	5.75	---	4.63	3.50	8.00	0.63	0.41	3.38	1.81	1.375	3.25	5/16 x 5/16 x 2-1/4
	TM21A	11.00	12.00	7.00	---	6.63	4.88	10.63	0.88	0.63	4.50	1.69	2.000	4.31	1/2 x 1/2 x 3
	TM28A	13.00	15.50	9.63	---	8.25	5.50	13.75	0.88	0.81	6.50	2.13	2.750	6.19	5/8 x 5/8 x 5

NEMA Frames 56C/ 140TC										
Reducer Size	Wt. (Lbs)	O (7)	AJ	BD	BF	Input Bore		XV1 (10)	ZL	
						U1 (8)	KW (9)			
Single Reduction	SM16A	33	7.88	5.88	6.72	0.41	0.625 (1) 0.875 (2)	3/16 x 3/32	4.50	9.38
	SM21A	44	9.63							11.31
Double Reduction	DM16A	53	8.47							13.05
	DM21A	77	9.88							14.75
	DM28A	167	12.31							18.63
Triple Reduction	TM16A	78	8.47							17.14
	TM21A	139	11.06							20.63
	TM28A	288	14.06							26.38

- (1) For NEMA 56C
- (2) For NEMA 140TC
- (3) For NEMA 180TC
- (4) For NEMA 210TC
- (5) +0.000; -0.0005
- (6) Usable Shaft Length
- (7) At highest point
- (8) +.001; +.002
- (9) Uses a 3/16 x 3/16 x 1-3/8 Key
- (10) +.001; -.003
- (11) 180TC uses a 1/4 x 1/4 x 1-1/8 Key;
210TC uses a 5/16 x 5/16 x 1-1/8 Key
- (12) +.002; -.000

		NEMA Frame 180TC/210TC										
	Reducer Size	180TC Wt (lbs)	210TC Wt (lbs)	O (7)	AJ	BD	BF	Input Bore		XV1 †	180TC ZL	210TC ZL
								U1 □	KW □			
Single Reduction	SM21A	65	75	10.63	7.25	9.22	0.53	1.125 (3) 1.375 (4)	1/4 x 1/8 (3) 5/16 x 5/32 (4)	8.50	13.03	13.53
	SM28A	87	97	12.50							14.69	15.19
Double Reduction	DM21A	95	105	10.11							16.44	16.94
	DM28A	155	165	12.31							20.28	20.78
Triple Reduction	TM21A	157	167	11.23							22.33	22.83
	TM28A	305	305	14.06							28.03	28.53

XL Parallel C-Face Reducer FLANGE MOUNTED



	Reducer Size	AJ	A	XV	AH	DD	BD	BE	H 4 Holes	QW	Output Shaft		
											U (5)	V (6)	Key
Double Reduction	DM16F	8.00	8.00	7.25	2.38	4.50	8.75	0.50	0.41	2.63	1.125	2.44	1/4 x 1/4 x 1-3/4
	DM21F	10.00	9.00	9.00	2.88	5.50	11.00	0.75	0.41	3.50	1.375	3.00	5/16 x 5/16 x 2-1/4
Triple Reduction	TM16F	10.00	8.00	9.25	3.13	4.63	11.00	0.75	0.41	4.13	1.375	3.25	5/16 x 5/16 x 2-1/4
	TM21F	12.50	11.00	11.00	4.25	6.63	14.00	0.88	0.53	4.25	2.000	4.31	1/2 x 1/2 x 3

NEMA Frames 56C/ 140TC										
	Reducer Size	Wt. (Lbs)	O (7)	AJ1	BD1	BF	Input Bore		XV1 (10)	ZL
							U1 (8)	KW (9)		
Double Reduction	DM16F	56	8.88	5.88	6.72	0.41	.625 (1) .875 (2)	3/16 x 3/32	4.50	14.34
	DM21F	78	11.00							16.56
Triple Reduction	TM16F	104	10.13	5.88	6.72	0.41	.625 (1) .875 (2)	3/16 x 3/32	4.50	19.59
	TM21F	151	13.63							22.94

		NEMA Frame 180TC/ 210TC										
	Reducer Size	180TC Wt (lbs)	210TC Wt (lbs)	O (7)	AJ1	BD1	BF	Input Bore		XV1 (12)	180TC ZL	210TC ZL
								U1 (8)	KW (11)			
Double Reduction	DM21F	95	105	11.00	7.25	9.22	0.53	1.125 (3)	1/4 x 1/8 (3)	8.50	18.22	18.72
Triple Reduction	TM21F	157	167	13.63				1.375 (4)	5/16 x 5/32 (4)			24.59

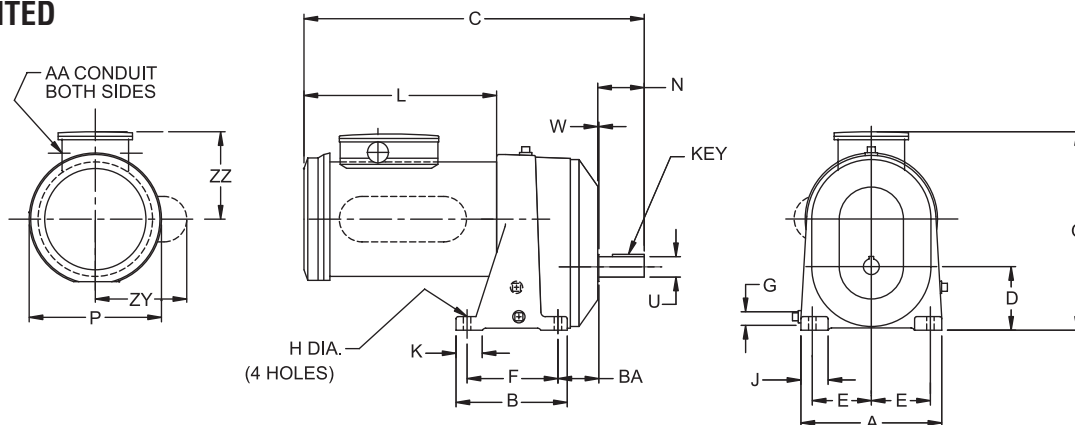
Configurations not shown above are not available in flange mounting.

- (1) For NEMA 56C
- (2) For NEMA 140TC
- (3) For NEMA 180TC
- (4) For NEMA 210TC
- (5) +0.000; -.0005
- (6) Usable Shaft Length

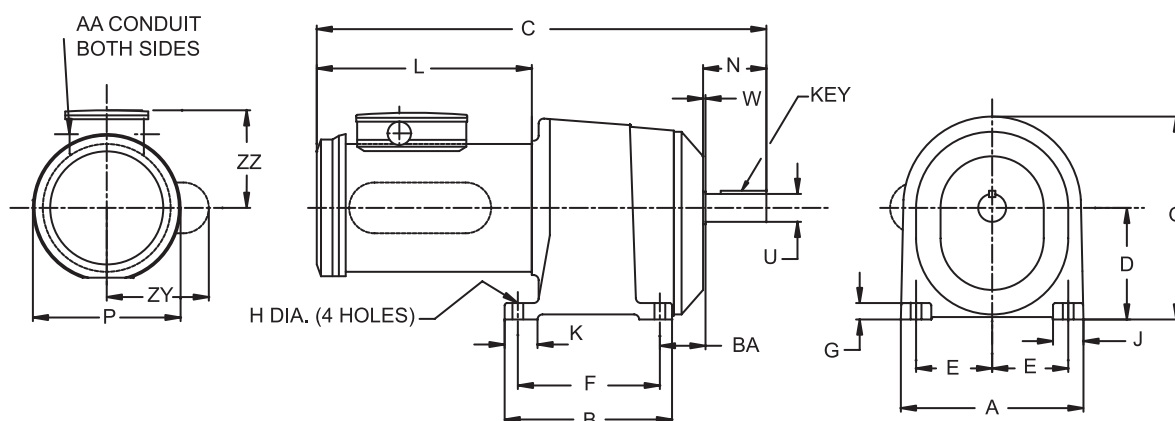
- (7) At highest point
- (8) +.001; +.002
- (9) Uses a 3/16 x 3/16 x 1-3/8 Key
- (10) +.001; -.003
- (11) 180TC uses a 1/4 x 1/4 x 1-1/8 Key; 210TC uses a 5/16 x 5/16 x 1-1/8 Key
- (12) +.002; -.000

XL Parallel Gearmotor

FOOT MOUNTED



SINGLE REDUCTION



DOUBLE/ TRIPLE REDUCTION

	Unit Size	A	B	D	E	F	G	H	J
Single Reduction	SG16A	7.00	5.06	2.50	3.00	4.00	0.63	0.34	1.25
	SG21A	7.75	6.13	3.50	3.25	5.00	0.75	0.41	1.50
	SG28A	9.50	8.75	4.50	3.94	7.50	0.88	0.66	2.00
Double Reduction	DG16A	8.00	7.00	4.50	3.50	6.00	0.63	0.41	1.25
	DG21A	9.00	8.25	5.50	3.75	7.00	0.81	0.53	1.50
	DG28A	11.63	10.81	6.50	4.75	9.25	0.88	0.66	2.31
Triple Reduction	TG16A	8.00	9.25	4.63	3.50	8.00	0.63	0.41	1.38
	TG21A	11.00	12.00	6.63	4.88	10.63	0.88	0.63	1.50
	TG28A	13.00	15.50	8.25	5.50	13.75	0.88	0.81	2.00

	Unit Size	K	N	W	BA	U		KEY	
						Min	Max	Square	Length
Single Reduction	SG16A	1.25	1.81	0.06	1.38	0.7495	0.7500	3/16	1-1/4
	SG21A	1.44	2.56	0.06	2.25	1.1245	1.1250	1/4	1-3/4
	SG28A	1.63	3.13	0.13	2.50	1.3745	1.3750	5/16	2
Double Reduction	DG16A	1.25	2.50	0.06	1.88	1.1245	1.1250	1/4	1-3/4
	DG21A	1.63	3.13	0.13	2.25	1.3745	1.3750	5/16	2-1/4
	DG28A	2.00	4.44	0.19	2.63	1.9995	2.0000	1/2	3
Triple Reduction	TG16A	1.50	3.38	0.13	2.25	1.3745	1.3750	5/16	2-1/4
	TG21A	1.50	4.50	0.19	2.69	1.9995	2.0000	1/2	3
	TG28A	1.88	6.50	0.31	3.44	2.7495	2.7500	5/8	4

XL Parallel Gearmotor

SINGLE REDUCTION

Unit Size	Motor HP	Frame	Encl.	C	O	AA	AB	L	P	ZY		
SG16	1/2	FB56	TENV	14.75	7.88	0.50	---	8.56	6.47	5.03		
		FC56	TENV	15.75				9.56				
		FC56	TEFC	15.63								
	3/4	FC56	TENV	15.75							8.56	
		FC56	TEFC	15.63								9.56
		1	FB56	TENV				14.75		10.63		
			FC56	TEFC				15.63				
	FD56		TEFC	16.69				10.50				
	FC140		TEFC	15.63								
	1-1/2	FC140	TEFC					---				
2	FD140	TEFC	16.69	9.25								
SG21	1	FC140	TEFC		17.56	9.63	9.44		10.50	---		
	1-1/2	FC140	TEFC									
	2	FD140	TEFC								18.63	
	3	182T	TEFC		21.34	10.63	0.75	5.28	12.47			
	5	184T	TEFC	22.50	13.47							
	7-1/2	213T	TEFC	26.41	1.00				8.69		17.53	10.63
SG28	3	182T	TEFC	23.00	12.50	0.75	5.28	12.47	9.25	---		
	5	184T	TEFC	24.00				13.47				
	7-1/2	213T	TEFC	28.06				1.00	8.69		17.53	10.63
	10	215T	TEFC	28.06								

DOUBLE REDUCTION

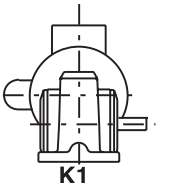
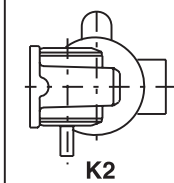
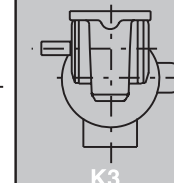
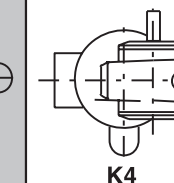
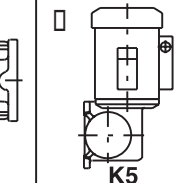
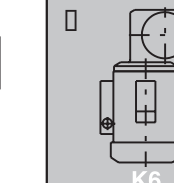
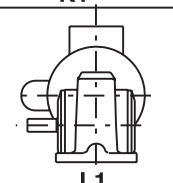
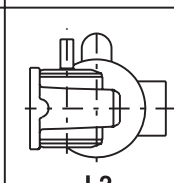
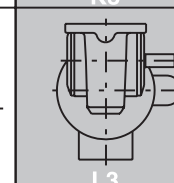
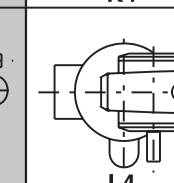
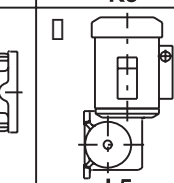
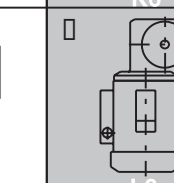
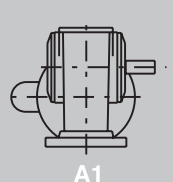
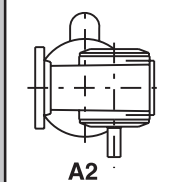
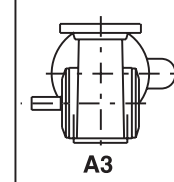
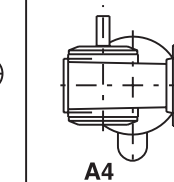
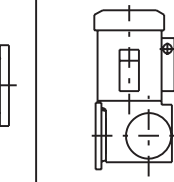
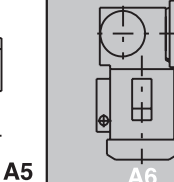
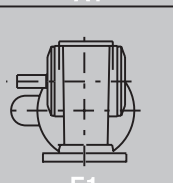
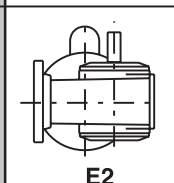
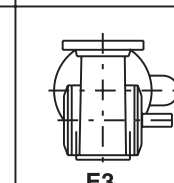
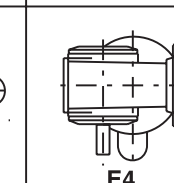
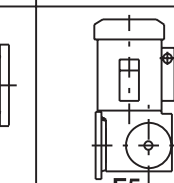
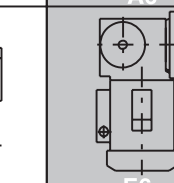
Unit Size	Motor HP	Frame	Encl.	C	O	AA	AB	L	P	ZY
DG16	1/3	FB56	TENV	18.41	8.63	0.50	---	8.56	6.47	5.03
		FC56	TENV	19.41				9.56		
	1/2	FB56	TENV	18.41				8.56		
		FC56	TENV	19.41				9.56		
		FC56	TEFC	19.28						
	3/4	FC56	TENV	19.41				9.56		
		FC56	TEFC	19.28						
	1	FB56	TENV	18.41				8.56		
		FC56	TEFC	19.28				9.56		
		FD56	TEFC	20.34				10.63		
		FC140	TEFC	19.28				9.44		
	1-1/2	FC140	TEFC					10.50		
2	FD140	TEFC	20.34	10.50						
DG21	1	FC140	TEFC	21.00	9.88	0.75	5.28	9.44	9.25	---
	1-1/2	FC140	TEFC					10.50		
	2	FD140	TEFC	22.06				12.47		
	3	182T	TEFC	24.75				13.47		
	5	184T	TEFC	25.75						
DG28	1-1/2	FC140	TEFC	24.88	12.31	0.50	---	9.44	6.47	---
	2	FD140	TEFC	25.94				10.50		
	3	182T	TEFC	28.59		0.75	5.28	12.47	9.25	
	5	184T	TEFC	29.59				13.47		
	7-1/2	213T	TEFC	33.66		1.00	8.69	17.53	10.63	
	10	215T	TEFC							

XL Parallel Gearmotor

TRIPLE REDUCTION

Unit Size	Motor HP	Frame	Encl.	C	O	AA	AB	L	P	ZY			
TG16	1/3	FB56	TENV	22.50	8.63	0.50	---	8.56	6.47	5.03			
		FC56		23.50				9.56					
	1/2	FB56		22.50				8.56					
		FC56		23.50				9.56					
		FC56	TEFC	23.38									
	3/4	FC56	TENV	23.50									
		FC56	TEFC	23.38									
	1	FB56	TENV	22.50				8.56					
		FC56	TEFC	23.38				9.56					
		FD56		24.44				10.63		5.44			
TG21		1	FB56	TENV	26.00	11.06	0.50	---	8.56	6.47	5.03		
	FC56		TEFC	26.88	9.56				5.44				
	FD56			27.94	10.63								
	FC140			26.88	9.44								
	1-1/2	FC140		26.88	0.75		---	12.47	---				
		182T		30.63				10.50					
	2	FD140		27.94	0.50			12.47					
	3	182T		30.63	0.75		5.28	13.47			9.25		
	5	184T		31.63				9.25					
	TG28	1-1/2	FC140	TEFC	32.63		14.06	0.50			---	9.44	6.47
			182T		36.34			0.75				12.47	9.25
		2	FD140		33.69			0.50				10.50	6.47
			184T		37.34			0.75			5.28	13.47	9.25
3		182T	36.34		12.47	9.25							
		213T	41.41		1.00	8.69		17.53		10.63			
5		184T	37.34		0.75	5.28		13.47		9.25			
7-1/2		213T	41.41		1.00	8.69		17.53		10.63			
10		215T											

XL Right Angle

INTEGRALLY CAST FOOT 						
						
MULTI-MOUNT 						
						

NOTE: Multi-Mount foot may also be specified for positions shown in Integrally Cast Foot.

INCLINED MOUNTING

All of the mounting positions shown are suitable for mounting up to = 5° from the vertical or horizontal axis, without changing oil vent, level and drain plugs. If mounting angle exceeds 5°, specify when ordering such that the oil plugs can be repositioned for proper operation.

□ Countershaft is located on the concealed side of these units.

Note: Dotted Boxes show capacitor and/or conduit box locations when supplied as standard construction.

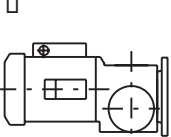
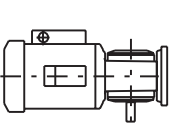
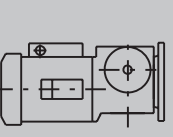
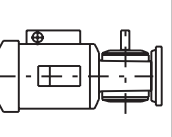
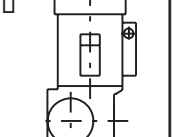
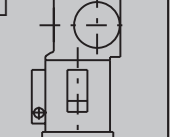
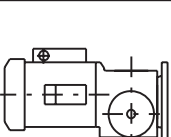
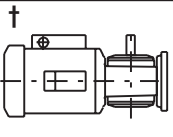
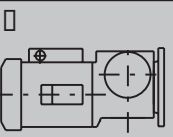
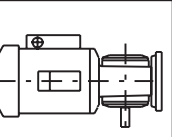
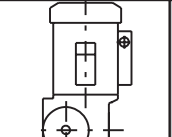
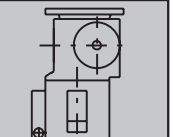
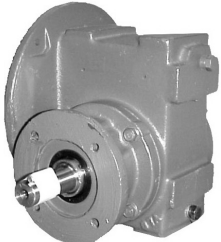
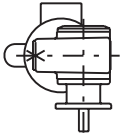
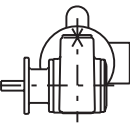
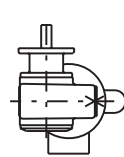
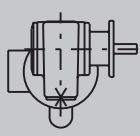
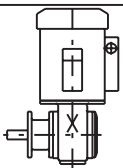
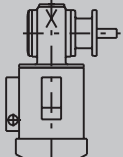
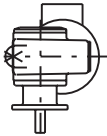
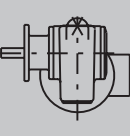
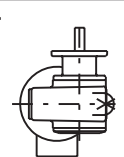
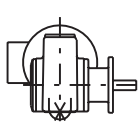
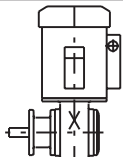
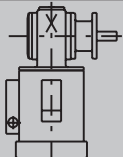
† Not available in CG40 case

X Reference Surface

NOTE: Also available as KL (double output shaft extends from both sides of case)

Note: Shaded boxes indicate mounting not recommended. These should be avoided. Use of product in positions not recommended negates time-in-use warranty.

XL Right Angle

J-MOUNT  JL-5 SHOWN	 JK1	 JK2	 JK3	 JK4	 JK5	 JK6
	 JL1	 JL2	 JL3	 JL4	 JL5	 JL6
FLANGE MOUNT  B-2 SHOWN	 B1	 B2	 B3	 B4	 B5	 B6
	 H1	 H2	 H3	 H4	 H5	 H6

INCLINED MOUNTING

All of the mounting positions shown are suitable for mounting up to = 5° from the vertical or horizontal axis, without changing oil vent, level and drain plugs. Be sure to specify when ordering, if angle of mounting is known to exceed = 5° such that the oil plugs can be repositioned for proper operation.

□ Countershaft is located on the concealed side of these units.

Note: Dotted Boxes show capacitor and/or conduit box locations when supplied as standard construction.

† Not available in CG40 case

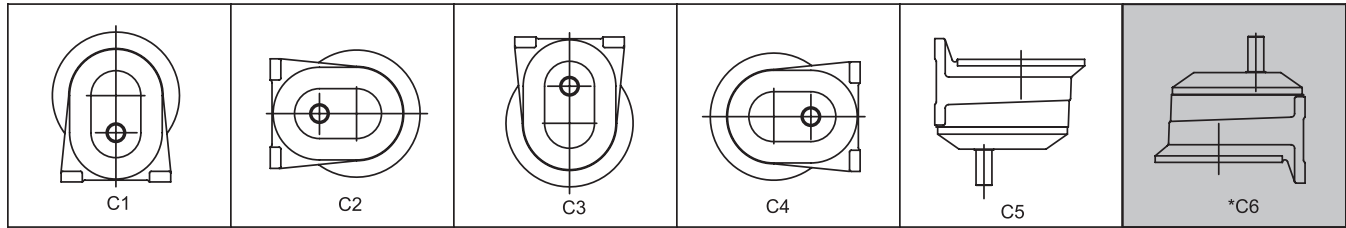
X Reference Surface

Note: Shaded boxes indicate mounting not recommended. These should be avoided. Use of product in positions not recommended negates time-in-use warranty.

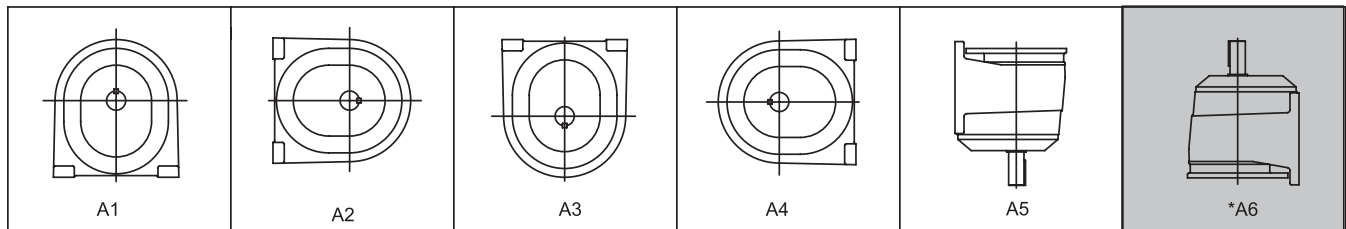
Also available: Dead Flange D1 or F1; output shaft comes out opposite side from flange.

XL Parallel

SINGLE REDUCTION



DOUBLE/TRIPLE REDUCTION



Note: * Shaded boxes indicate mounting not recommended. These should be avoided. Use of product in positions not recommended negates time-in-use warranty.

XL Reducers and Gearmotors

SHIPPING WEIGHTS

RIGHT ANGLE GEARMOTORS

HP							
1/3	56WG12A 36	56CG12A 55	56WG16A 46	56CG16A 77	56CG21A 136	56CG16A 83	
1/2	56WG12A 42	56WG16A 51	56CG16A 81	56WG21A 80	56CG21A 131		
3/4	56WG16A 55	56CG16A 82	56WG21A 78	56CG21A 132	143CG21A 135	143CG28A 283	
1	56WG16A 56	56CG16A 87	56WG21A 86	56CG21A 132			
1	143WG16A 65	143CG16A 89	143WG21A 88	143CG21A 137	143CG28A 258	145CG28A 263	
1 1/2	145WG16A 61	145CG16A 89	145WG21A 90	145CG21A 153	145CG28A 273	182CG28A 315	184CG28A 330
2	145WG21A 296	145CG21A 143	145WG28A 141	145CG28A 269	184CG28A 360	182CG40A 660	
3	182WG21A 142	182CG21A 205	182WG28A 200	182CG28A 310	213CG28A 386	184CG40A 675	
5	184WG28A 218	184CG28A 330	184CG40A 683				
7 1/2	213WG28A 261	213CG28A 395	213WG40A 705	254CG40A 860	213CG40A 755		

WEIGHT ADDITIONS - TO BE ADDED TO ABOVE LISTINGS

GEARCASE	W12	W16	W21	W28	WG40	CG12	CG16	CG21	CG28	CG40
Multi-Mount J Mount	5	10	20	40	80	6	10	50	60	55
Flange	6	10	18	35	52	6	10	45	50	35

BRAKES

BRAKE	3,6 ft./lb.	10 ft./lb.	15 ft./lb.
WEIGHT	15	15	16

XL Parallel Integral Gearmotors

APPROXIMATE SHIPPING WEIGHTS FOR MASTER XL PARALLEL INTEGRAL GEARMOTORS

Weights shown on the chart below are for Three Phase motors. For single phase motors, add 5 lbs. Weights shown are for unit in standard mounting position (A1 or C1) and include the factory filled lubricant.

	Motor HP									
Unit Size	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10
56SG16A	50	47	51	48	---	---	---	---	---	---
56DG16A	86	74	77	79	---	---	---	---	---	---
56TG16A	106	106	111	133	---	---	---	---	---	---
145SG21A	---	---	---	84	79	90	---	---	---	---
182SG21A	---	---	---	---	97	---	135	---	---	---
184SG21A	---	---	---	---	---	---	---	150	---	---
56DG21A	---	---	---	104	---	---	---	---	---	---
145DG21A	---	---	---	110	108	115	---	---	---	---
182DG21A	---	---	---	---	145	---	160	---	---	---
184DG21A	---	---	---	---	---	150	---	185	---	---
56TG21A	---	184	191	181	---	---	---	---	---	---
145TG21A	---	---	---	---	195	203	---	---	---	---
182TG21A	---	---	---	---	231	---	230	---	---	---
184TG21A	---	---	---	---	---	---	---	255	---	---
184SG28A	---	---	---	---	---	---	---	187	---	---
213SG28A	---	---	---	---	---	---	---	---	231	---
215SG28A	---	---	---	---	---	---	---	---	---	255
182DG28A	---	---	---	---	---	---	300	---	---	---
184DG28A	---	---	---	---	---	---	---	315	---	---
213DG28A	---	---	---	---	---	---	---	---	350	---
215DG28A	---	---	---	---	---	---	---	---	---	363
182TG28A	---	---	---	---	375	---	420	---	---	---
184TG28A	---	---	---	---	---	485	---	397	---	---
213TG28A	---	---	---	---	---	---	471	---	476	---
215TG28A	---	---	---	---	---	---	---	---	---	495

Weight Additions for Flanged Units

Add to above

Unit Size	Weight (lbs)
D16	8
XL1	10
T16	10
T21	15

XL Reducers and Gearmotors

MODIFICATIONS AND ACCESSORIES

BRAKES

Standard brakes are fail-safe type, spring set and electrical release. Designed for holding and intermittent braking.

Also available: add-on brakes and double-C-face brake modules. Most ratings are available from stock. Ratings not stocked can be ordered at standard production lead times.

CLUTCH/BRAKE MODULES

Where frequent starting or stopping is required or where it is desirable to disconnect the motor from the reducer, double-C-face clutch/brake modules (mounted between C-face motor and gearbox C-face input flange) are available. These modules are not fail-safe, as electrical power is required to operate both the clutch and the brake. Open enclosure.

The gearbox must have a minimum 1.5 service factor to compensate for the shock developed during starts/stops of clutch/brake operation.

Double-C-face modules with clutch only and brake only are also available.

EASY CLEAN

MASTER XL EASY CLEAN gearmotors are designed to meet the requirements of food processors, canners, meat packers, bakeries, dairies, drug and cosmetic manufacturers.

EASY CLEAN gearmotors feature smooth, corrosion resistant frames and end shields, easily removable fan covers and fans, corrosion proof hardware and no exposed threads or pockets which are hard to clean or not self-draining. These gearmotors may be used in either "wet" or "dry" areas and are cleanable by dry methods or washdown. EASY CLEAN gearmotors are recommended for use in bakeries, dairy processes, ice cream plants, confectionery plants, pharmaceutical and vitamin manufacturing, cosmetic plants, beverage and bottling plants, canneries and any other application requiring this special construction.

Some EASY CLEAN fractional horsepower ratings are also available in special totally enclosed, non-fan-cooled construction, featuring a smooth exterior and epoxy treated windings suitable for both wet and dry locations. The gearmotor is readily cleanable without removing the fan cover or fan. While corrosion resistant to a large degree and suitable for detergent washdown, these gearmotors are better suited for applications where ease of cleaning is of utmost importance and air movement is objectionable.

MOTORS

Standard motor construction in the XL product line is partial gearmotor construction. C-face adapters are available for mounting C-face motors. Special designs and enclosures are available. Consult MASTER Customer Service with your requirements.

RING TACHOMETER

Kit consists of ring tachometer with special three-piece coupling and mounting hardware. Mounts between C-face motor and C-face adapter. Note: Motors are shipped separately when these kits are supplied with C-face reducers.

FOOD-GRADE LUBRICANT

Chevron FM460X available. USDA class AA and H1.

SPECIAL LUBRICANTS

Available for low temperatures.

SIGHT GAGES (OIL LEVEL)

Available for all MASTER XL reducers. Parallel reducers require revised venting for this modification. Gages shipped separately to prevent shipping damage. Customer installation required.

SPECIAL MOUNTINGS

- Flange
- J-Mount
- Multi-Mount

Refer to Dimension and Mounting Positions pages.

SPECIAL PAINT

Contact MASTER Customer Service.

SPECIAL SHAFTS

Special output shaft extensions are available and considered on an individual basis. Limited to diameters equal to or smaller than standard shaft. Consult MASTER Customer Service.

XT (EXTRA TOUGH) PACKAGE

Modifications to make gearbox suitable for use outdoors or in chemical, dairy or food processing plants or other locations with high humidity, steam, chemical fumes, etc. or where gearmotor is washed frequently. Features cast-iron construction, stainless steel nameplate, soft copper washers, brass lubrication fittings, brass spring-loaded vent, double lip output shaft seal and stainless steel output shaft seal sleeve.

XL Parallel Reducers and Gearmotors

INSTALLATION:

Proper installation of MASTER XL parallel speed reducers and gearmotors will insure reliable service and maximum life. Key items to minimize possible failures include:

- **Gear Case Mounting** - To insure uniform pressure mount gear case on flat surface. Use uniform torque when mounting bolts are tightened.
- **Shaft Overhung Loads** - Excessive overhung loads due to over tightening of belts or chains can result in broken shafts and reduce bearing life or failure.
- **Couplings** - Improper coupling alignment can result in excessive stresses on gear unit shaft and bearings
- **Shock Loads** - Excessive shock loads can also result in damaging stresses on shafting and bearings.

LUBRICATION:

Proper lubrication of MASTER XL speed reducers is extremely important if long trouble-free operation is to be expected. Proper lubrication consists of:

- Use of proper type and grade of lubricant
- Maintenance of correct oil level
- Drain, flush and refill at the required intervals

MASTER XL speed reducers and gearmotors have been lubricated at the factory for the K1/L1 mounting position. Before starting, check the mounting position diagrams to make sure that the oil level plug and oil level are in the correct location for which the unit is to be operated. This is extremely important, as insufficient lubricant will damage gears and bearings in a very short time. If any change is necessary, require relocation of the level plug and adding or draining lubricant to insure the proper amount of lubricant is required. The correct amount of oil is important to the performance of a speed reducer. Each **MASTER XL** speed reducer or gearmotor has a red oil level plug which indicates the proper oil mounting level for a given mounting position. Check the oil level plug location diagrams in the Installation and Instruction Manuals available on www.master-pt.com.

RECOMMENDED LUBRICANTS:

Use only the best grade of automotive engine lubricants, unless otherwise specified. Where gear units are used outdoors, seasonal changes may be necessary. It is impossible to select one gear lubricant of petroleum origin which is usable over a wide range of temperatures. Use lubricants of the proper group as required by the ambient temperature in which the reducer will operate. The proper grade of oil is listed as follows:

Ambient (Room) Temp.	SAE Grades of Oil For Output Shaft Speeds (in RPM) of:			
	13.5 - 500	501 - 1000	1001 - 3000	3000 +
110°F to 165°F	50 (1)	40	30	20W
60°F to 110°F	40	30	20W	10W
35°F to 70°F	30	20W	10W	10W
10°F to 40°F	20W	10W	10W	---
-10°F to 20°F	10W (2)	(2) (3)	---	---
-30°F to 10°F	(2) (3)	(2) (4)	---	---
-65°F to -20°F	(2) (4)	---	---	---

- (1) Use SAE 50 heavy duty automotive oil with oxidation inhibitor
- (2) Use Gulf Paramount Number 22 (A naphthenic base oil with a low pour point and viscosities of 109.8 SUS @ 100°F or 39.1 SUS @ 210°F.) Any other oil meeting these specifications would be a suitable substitute.
- (3) Use Mobil Oil Co. Avrex number 903.
- (4) Special oil seals are required for temperatures below 10°F.

MAINTENANCE:

Periodic changing of lubricant is important for maximum reducer or gearmotor performance. Lubricant should be drained and refilled after the first 250 hours of operation; then every 1500 hours or six months thereafter, whichever occurs first.

In addition to lubrication and installation, regular inspection to insure tightness of bolts and screws, correct alignment of shaft couplings, no major oil leaks, no excessive heating and no unusual vibration or noises will guarantee maximum performance and life of your **MASTER** product.

Manuals available at www.master-pt.com.

Notes

APG

MASTER XL

COMBOGEAR

MOTO DRIVE

ULTIMA

PULLEYS