



IMPORTANT INFORMATION DO NOT DISCARD!

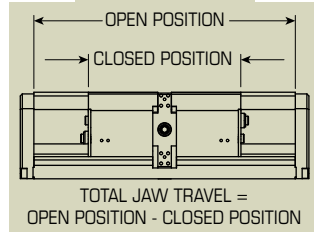
Use this information sheet to assist with gripper installation and setup.
File with maintenance or machine documentation.

ORDERING DATA TO ORDER SPECIFY: Product Line, Series, Type, Grip, Design No., Size, Total Jaw Travel and Options required.

Example Ordering Data:

E	G	R	R	1	2	-	5	-	63	x	200	-	V1-Z1	-	RW151	-	Wxxxx	-	Mxxxx
Electromechanical	Gripper	Regular Duty	Long Travel, High-Capacity Parallel Gripper	Synchronized, Standard Grip	Jaw Style 2		Design No. 5 - Metric 1 - Imperial		Size		Jaw Travel		Options		15:1 Motor Speed Reducer		Motor Mounting Code		Motor Code (requires RW151-W0174)
						See Note				mm in		V1 - Fluoroelastomer seals and wipers Z1 - Fully corrosion-resistant coating on jaw guides and drive racks.			W0174 - Direct mounting for Kollmorgen® AKM33H-AN92CA00 Wxxxx - Open architecture part number code (configure code online) W0000 - Blank Motor Mounting		M1095 - PHD-supplied Kollmorgen® AKM33H-AN92CA00 (performance comparable to PHD Series GRR Gripper)		
											150 5.906 200 7.874 250 9.843 300 11.811 350 13.780		NOTE: Fasteners are corrosion-resistant as standard				No Code - No Motor		
											(Home positioning may reduce usable travel)								

NOTE: Design Number dictates imperial or metric mountings. Dowel pin holes are metric regardless of design number.



8 mm THREADED INDUCTIVE PROXIMITY SWITCHES

PART NUMBER	DESCRIPTION
51422-005-02	NPN (Sink), 2 meter cable
51422-006-02	PNP (Source), 2 meter cable

8 mm & 12 mm THREADED INDUCTIVE PROXIMITY SWITCH TARGET KIT

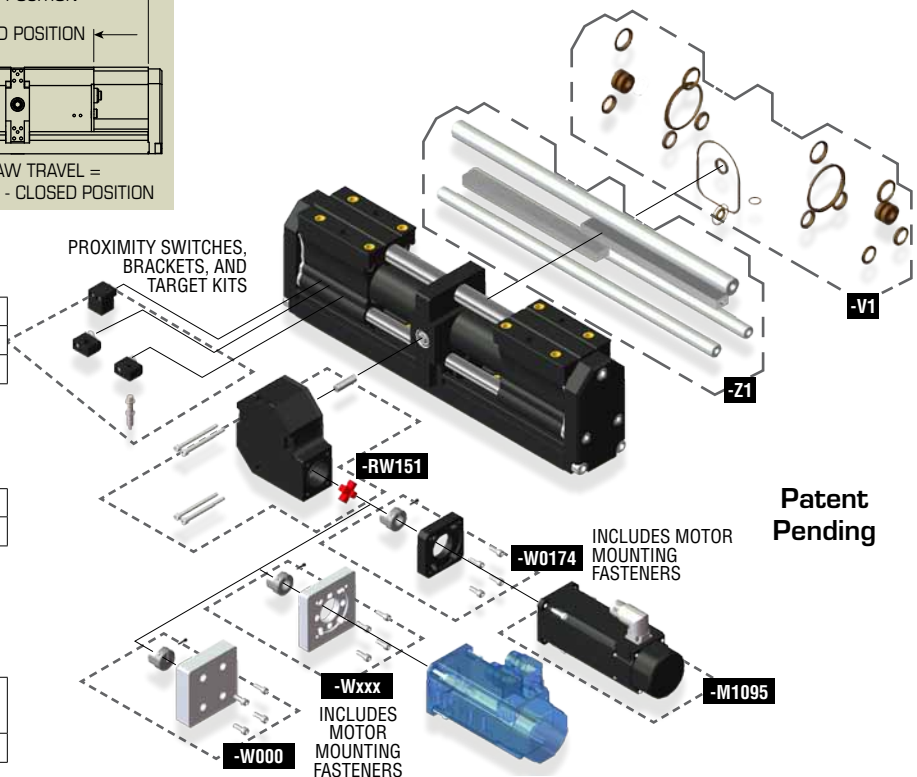
CORROSION-RESISTANT
74994-33

Kit includes: 1 proximity switch target, 2 target mounting screws

THREADED INDUCTIVE PROXIMITY SWITCH MOUNTING BRACKET KITS

CORROSION-RESISTANT FOR 8 mm SWITCH	CORROSION-RESISTANT FOR 12 mm SWITCH
74992-33	74993-33

Kit includes: 1 proximity switch mounting bracket, 1 mounting nut, 1 mounting screw



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**ENGINEERING DATA: SERIES EGRR DESIGN 5 [1] GRIPPER**

SPECIFICATIONS		SERIES EGRR
INPUT TORQUE	Without Motor Speed Reducer	2.9 Nm min to 43.2 Nm max [26 in-lb min to 382 in-lb max]
	With RW151 Motor Speed Reducer	0.3 Nm min to 3.8 Nm max [2.3 in-lb min to 34 in-lb max]
INPUT RUNNING SPEED	Without Motor Speed Reducer	400 rpm max
	With RW151 Motor Speed Reducer	6000 rpm max
JAW GRIP SPEED*		50 mm/sec max [2 in/s max]
OPERATING TEMPERATURE		-28° to +82° C [-20° to 180° F]
RATED LIFE		5 million cycles minimum
GRIP REPEATABILITY		Within 0.05 mm [.002 inch] of original centered position
LUBRICATION		Factory lubricated for rated life
MAINTENANCE		Field repairable (except reducer)

* Jaw grip speed is speed which jaws contact gripped workpiece. Jaws may operate at faster speeds, but must decelerate to grip speed prior to grip.

MODEL NUMBER	TOTAL JAW TRAVEL TRAVEL TOLERANCE		GRIPPER WEIGHT						FULL TRAVERSE TIME FACTOR**	GRIP FORCE FACTOR G _F *	
	+4.8 +2.1	+ 0.189 + 0.084	WITHOUT MOTOR SPEED REDUCER		WITH MOTOR SPEED REDUCER		WITH REDUCER & M1095 MOTOR			METRIC	IMPERIAL
	mm	in	kg	lb	kg	lb	kg	lb	C _F		
EGRR12-x-63 x 150	150	5.906	12.8	28.2	14.9	32.8	18.3	40.2	1057	937	23.8
EGRR12-x-63 x 200	200	7.874	15.3	33.7	17.4	38.3	20.8	45.7	1410		
EGRR12-x-63 x 250	250	9.843	18.2	40.1	20.3	44.7	23.7	52.1	1762		
EGRR12-x-63 x 300	300	11.811	20.5	45.1	22.5	49.7	25.9	57.1	2115		
EGRR12-x-63 x 350	350	13.780	22.7	50.1	24.8	54.7	28.2	62.1	2467		

* Grip force varies with tooling length

** Time factors assume a total jaw acceleration and deceleration of 1G (0.5 G per jaw) to and from jaw running speed

MAXIMUM ALLOWABLE FORCES AND MOMENTS

MODEL NUMBER	F _a		M _x		M _y		M _z	
	N	lb	Nm	in-lb	Nm	in-lb	Nm	in-lb
EGRR12-x-63 x 150	15570	3500	880	8000	715	6500	715	6500
EGRR12-x-63 x 200	15570	3500	990	9000	825	7500	825	7500
EGRR12-x-63 x 250	15570	3500	990	9000	825	7500	825	7500
EGRR12-x-63 x 300	15570	3500	990	9000	825	7500	825	7500
EGRR12-x-63 x 350	15570	3500	990	9000	825	7500	825	7500

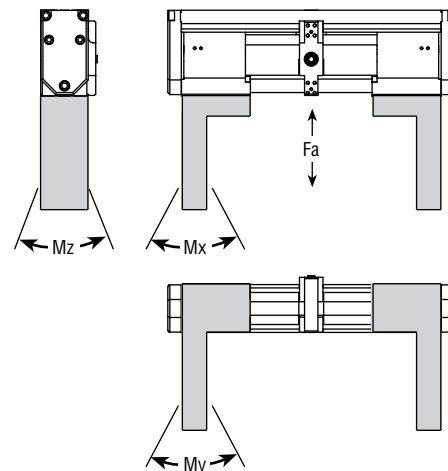
F_a: Total for both jaws

M_x: Allowable moment per jaw, measured from jaw mounting surface

M_y: Allowable moment per jaw, measured from geometric center of jaw

M_z: Allowable moment per jaw, measured from jaw mounting surface

When calculating the value for F_a, include weight of tooling, part weight, acceleration, and external forces. When calculating values for M_x, M_y, and M_z, include the grip force per jaw, part weight, external forces, and acceleration as applicable.



⚠ MOMENT VALUES ASSUME THE USE OF ALL THREADED MOUNTING HOLES.

START-UP PROCEDURES

Gripper should be securely mounted with all tooling and attached prior to operating unit. Care should be taken to provide adequate clearance for the jaws to open and close. At initial start-up, use reduced input torque and speed until application is fully debugged. Always observe safe operating procedures while installing, operating or servicing gripper.

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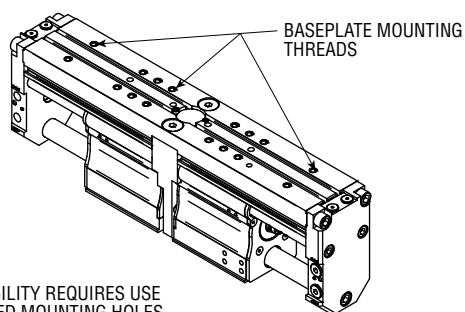
MOUNTING TORQUE INFORMATION: SERIES EGRR DESIGN 5 [1] GRIPPER

RECOMMENDED MOUNTING TORQUES

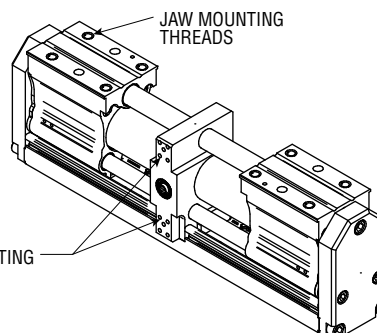
PART DESCRIPTION	TORQUE	
	Nm	in-lb
BASE PLATE MOUNTING THREADS	50.8	450
JAW MOUNTING THREADS	33.9	300
MOTOR SPEED REDUCER MOUNTING THREADS	12.4	110

NOTES:

1. Assumes engagement of 75% of full thread depth.
2. Assumes use of high strength steel socket head cap screws.
3. PHD recommends the use of threadlocker on mounting threads.



BASEPLATE MOUNTING THREADS



JAW MOUNTING THREADS

REDUCER MOUNTING THREADS



MOMENT CAPABILITY REQUIRES USE OF ALL THREADED MOUNTING HOLES

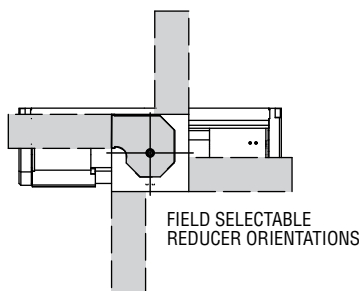
GRIPPER DRIVE INTERFACE

The jaws of the gripper are driven by a hexagonal drive socket accessible on the side of the center plate of the gripper. A coaxial locating boss is included around the socket to allow external driving elements to be properly aligned with the socket. The socket is typically driven with a 10 mm [0.4724 in] hexagonal alloy steel drive link. The link should be relieved as shown in the illustration and the locating boss around the drive socket should be used to locate the driving link to the socket.

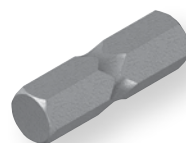
REDUCER MOUNTING AND INDEXING

The motor speed reducer is a pre-lubricated, factory sealed unit which can be repositioned, removed, or replaced in the field. Four fasteners secure the reducer onto the center plate of the gripper. Removing the four fasteners allows the reducer to be rotated into one of four mounting positions. After indexing the reducer to the desired position, apply threadlocker to the reducer mounting fasteners and replace and retorque the fasteners to 12.4 Nm [110 in-lb]. When replacing the drive link, coat all surfaces of the link with grease prior to installation. Home the gripper whenever the reducer is repositioned.

NOTE: Reducer does not contain any field serviceable components.

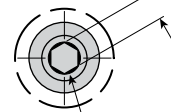


FIELD SELECTABLE REDUCER ORIENTATIONS

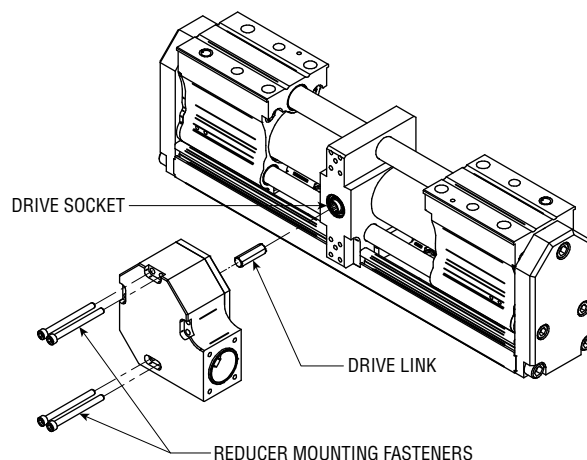
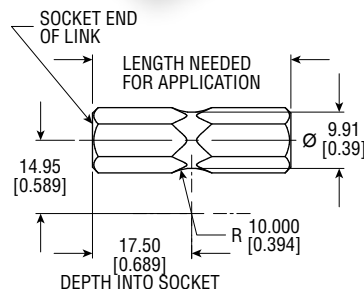


DRIVE SOCKET
10.03 MIN HEX x 19.0 DP
[0.3949 MIN HEX x 0.750 DP]

DRIVE SOCKET DETAIL



DRIVE LOCATING BOSS USED TO LOCATE MATING DRIVE ELEMENTS TO GRIPPER
Ø 13.5 h8
[Ø 0.5310 ± 0.0005]



DRIVE SOCKET

DRIVE LINK

REDUCER MOUNTING FASTENERS

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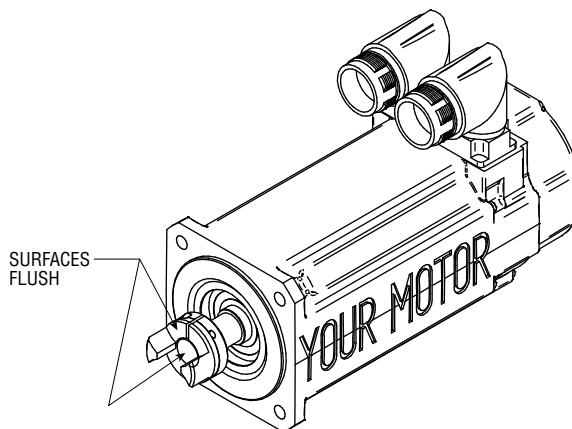


OPERATING INFORMATION: SERIES EGRR DESIGN 5 [1] GRIPPER

MOTOR MOUNTING

A shaft coupling is supplied with the gripper. Slip the coupling onto the shaft of the motor and position the coupling so that the inner face of the coupling is flush with the end of the motor shaft. Torque the clamping screw on the side of the coupling to 1.4 Nm [12 in-lb] to secure the coupling onto the shaft. Position the motor so that the protruding fingers of the coupling will engage the mating openings in the red colored spider within the reducer, and slide the motor shaft into the reducer until the mounting flange of the motor contacts the motor mounting plate of the reducer. If the motor does not fully contact the motor mounting plate thus leaving a gap between the motor and motor mounting plate, adjust the position of the motor coupling as discussed in the COUPLING ADJUSTMENT section. Rotate the motor to align the fastener holes in the mounting flange of the motor with the fastener holes in the motor mounting plate of the reducer. Use the motor mounting fasteners supplied with the gripper to mount the motor onto the motor mounting plate of the reducer. Torque the fasteners to the torque value listed in the table for the appropriate size of fastener.

NOTE: If desired, the reducer can be temporarily removed from the gripper prior to installing the motor onto the reducer. This allows unrestricted access to all of the motor mounting fasteners.



MOTOR FASTENER

FASTENER SIZE	TORQUE	
	Nm	in-lb
M4	3.6	32
M5	7.3	65
M6	12.4	110
M8	30.5	270

COUPLING ADJUSTMENT

The position of the motor shaft coupling may be adjusted after the motor is assembled onto the reducer. To access the clamping screw that affixes the coupling to the shaft, first unthread the motor shaft coupling screw plug from the reducer housing (see figure to right). Next, rotate the motor shaft (or the entire motor) until the head of the clamping fastener is visible in the unplugged access hole in the reducer housing. Then, insert a 2 mm hex driver to engage the socket in the head of the clamping fastener and loosen the fastener. Push the motor against the reducer motor mounting plate until no gap exists between the motor and plate. Retorque the loosened clamping fastener to 1.4 Nm [12 in-lb] and replace the removed plug.

INPUT TORQUE

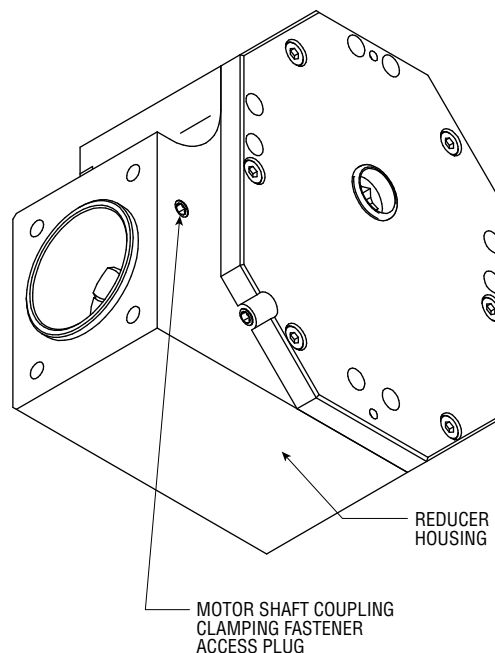
Operate gripper within the specified range of input torque.

WARNING: Applying input torque greater than the specified maximum can permanently damage the gripper or reducer.

Operating the gripper with insufficient input torque can cause sluggish jaw travel which can result in motor controller faults.

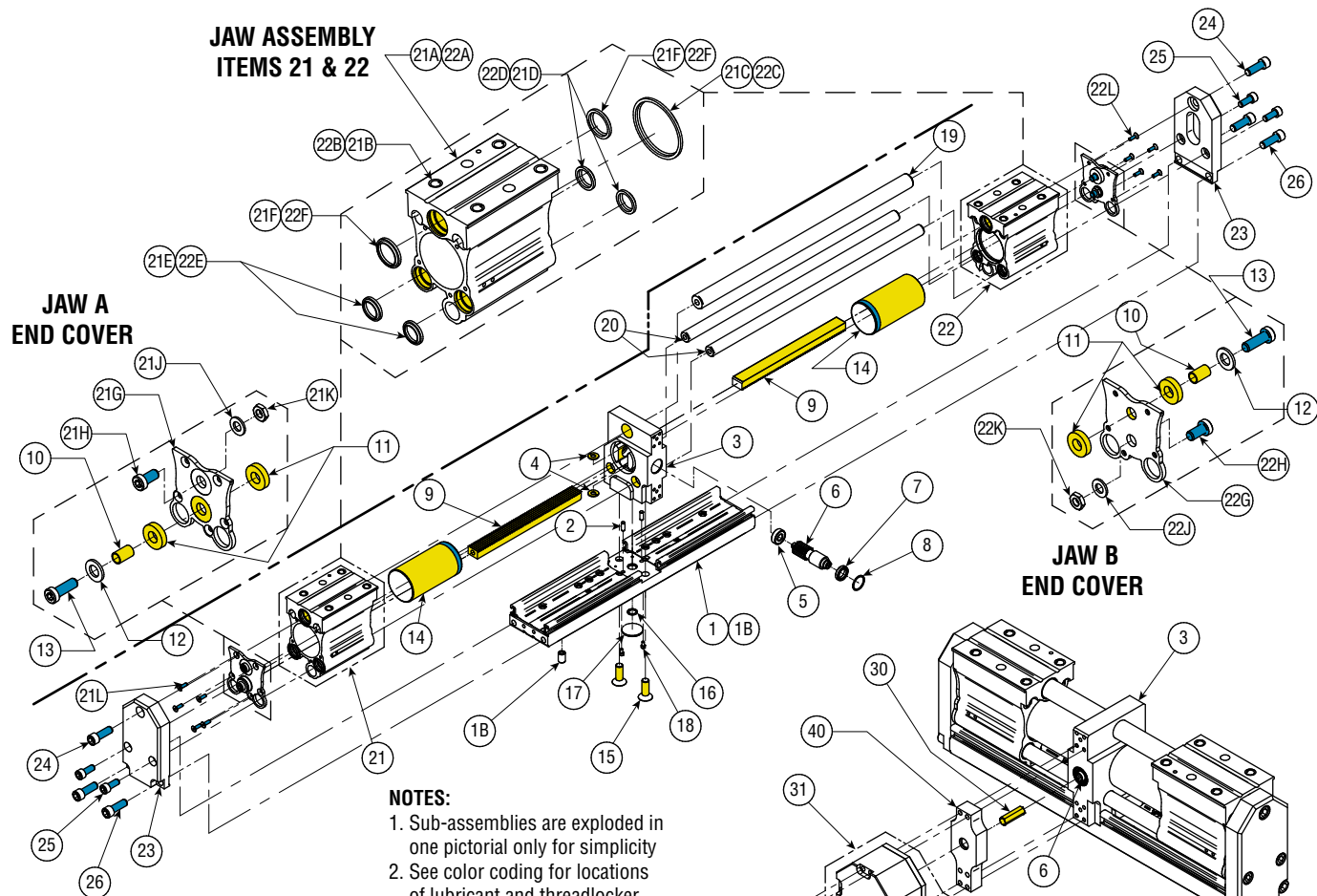
SAFE OPERATION

The gripper is capable of exerting large grip forces which can cause injury to personnel and damage to equipment if misapplied. Always operate the gripper in a safe manner. Prevent physical access to the gripper when in operation. Use appropriate lock-out procedures when installing, inspecting, or servicing the gripper. Use a motor brake or other external brake to physically lock the jaws in position upon loss of power. Establishment of a "gripping zone," based on jaw travel position, is recommended with input torque and position following error limited to low values outside of the gripping zone. The gripping zone should bound the jaw travel position where the gripper is expected to grip the gripped part and be no longer in travel than is necessary to compensate for gripped part dimensional variations and tooling deflection. When gripping multiple parts of differing dimensions, establish a separate gripping zone for each anticipated gripping position.

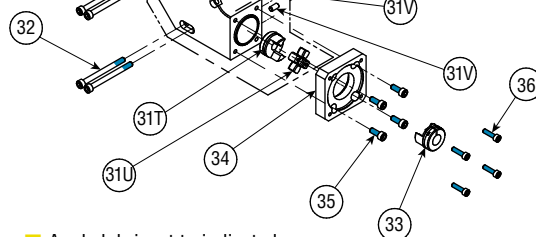


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**PARTS LIST: SERIES EGRR DESIGN 5 [1] GRIPPER****STANDARD COMPONENTS**

ITEM	PART DESCRIPTION	PART NUMBER
1, 1B	Base Plate with Threaded Inserts	Full unit description required -H6100
2	Dowel Pin (Center Plate)	17831-095
3	Center Plate	88114-3
4, 9	Rack & Rack Bearing	Full unit description required -H3310
10	Rack Mounting Spacer	88154
13	LHCS (Rack Attachment)	Full unit description required -H2020
14	Rack Cover Tube	Full unit description required -H1300
15	FHCS (Center Plate)	Full unit description required -H2000
16	Base Plate Cover Seal	Full unit description required -H7400
17	Base Plate Cover	74221
18	SHCS (Base Plate Cover)	Full unit description required -H2040
19	Large Jaw Guide	Full unit description required -H4720
20	Small Jaw Guide	Full unit description required -H4710
21A/22A, 21B/22B	Jaw with Threaded Inserts	Full unit description required -H2605
23	End Plate	88115-3
24	SHCS (Large Jaw Guide)	Full unit description required -H4740
25	SHCS (Small Jaw Guide)	Full unit description required -H4740
26	SHCS (End Plate To Base Plate)	Full unit description required -H2030
30	Drive Link	Full unit description required -H9420
31	Motor Reducer Assembly	Full unit description required -H9400
32	SHCS (Reducer Assembly Mounting)	Full unit description required -H9450
40	Center Extension Plate	Full unit description required -H2680



- Apply lubricant to indicated surfaces prior to assembly
- Apply threadlocker to indicated surfaces prior to assembly

KITS

ITEM	PART DESCRIPTION	PART NUMBER
21C/22C, 21D/22D, 21E/22E, 21F/22F	Wiper Kit	Full unit description required -H9045
21G, 21H, 21J, 21K, 21L	Jaw Cover Kit	89258
11, 12	Rack Shock Pad Kit	Full unit description required -H1840
5, 6, 7, 8	Drive Pinion Kit	89260
31T, 31U	Motor Reducer Coupling Kit	Full unit description required -H9430
33, 34, 35, 36	Motor Mounting Kit	Full unit description required -H9200

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