

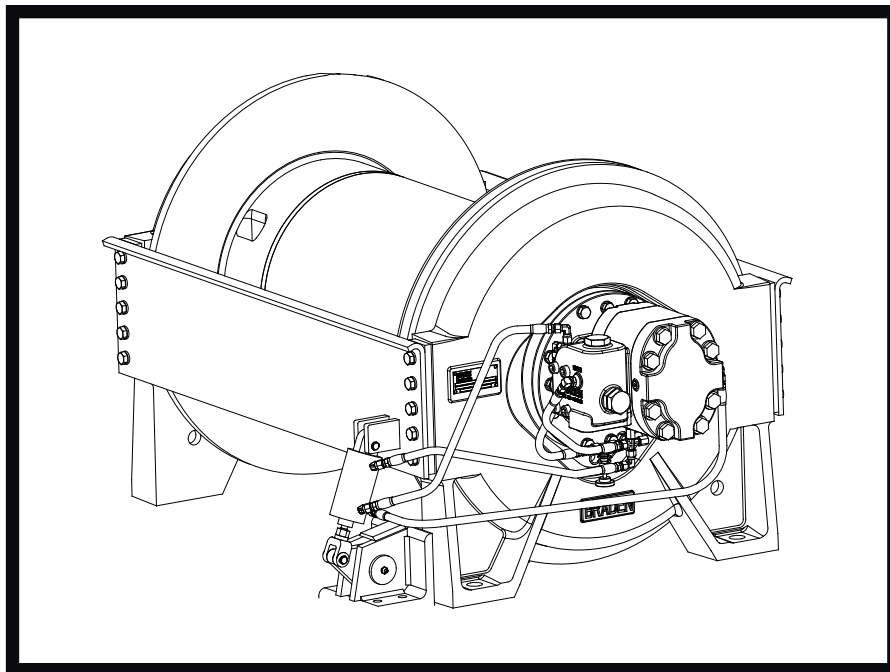
BRADEN®

CH210A

HYDRAULIC WINCH

MATERIAL LIST

Covers Units 06079, 06087, 06088, 06108

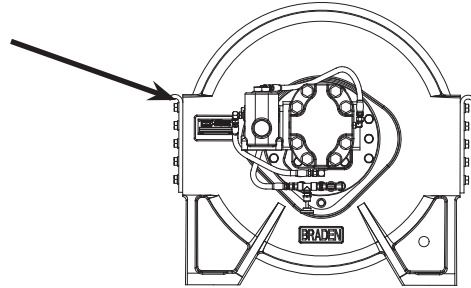


PACCAR WINCH DIVISION

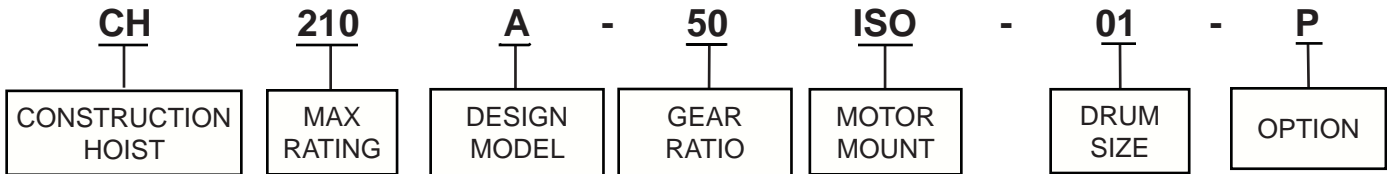
P. O. BOX 547 BROKEN ARROW, OK U.S.A. 74013
PHONE (918) 251-8511 FAX (918) 259-1575
www.paccarwinch.com

FOR BEST RESULTS, USE ONLY GENUINE BRADEN REPLACEMENT PARTS

Serial Numbers and Model Numbers are located to the left hand side of the hydraulic motor, stamped into the base. Always refer to the Serial Number and Model Number when requesting information or service parts.



EXPLANATION OF MODEL NUMBER

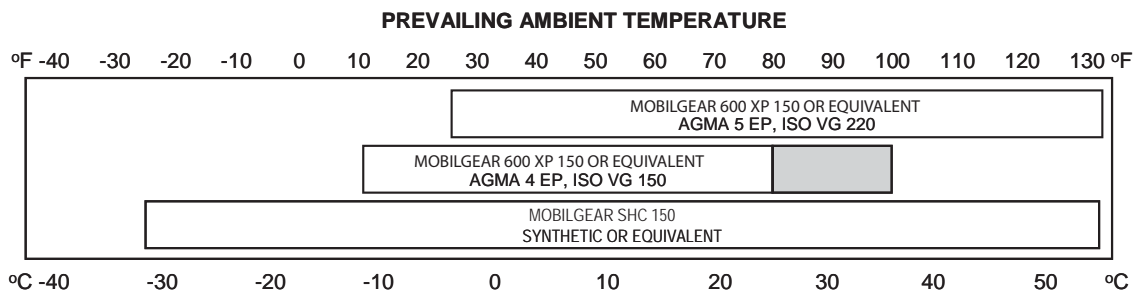


- CH DESIGNATES CONSTRUCTION HOIST
- 210 DESIGNATES 21,000 LB FIRST LAYER LINE PULL
- A DESIGNATES THE MODEL SERIES RELATING TO DESIGN CHANGES
- 50 DESIGNATES TOTAL GEAR REDUCTION (36:1; 50:1)
- ISO DESIGNATES MOTOR MOUNT
- 01 DESIGNATES THE DRUM OPTION
- P DESIGNATES RATCHET AND PAWL

TO ORDER PARTS -

- (1) List model and serial numbers of the winch.
- (2) Refer to exploded view and select the component(s) needed and note item number.
- (3) Find item number on material list, show part number, description and quantity required on your order.
- (4) Refer to Parts Price list and show price for each component or assembly.

RECOMMENDED PLANETARY GEAR OIL



i NOTE: SHADED TEMPERATURE RANGE IN THE CHART ABOVE NOT RECOMMENDED FOR SEVERE APPLICATIONS SUCH AS: OFFSHORE CRANES, SUSTAINED FAST DUTY CYCLES OR FREQUENT LIFTING.

Planetary hoists are factory filled with Mobilgear 600 XP 150, or equivalent. Consult your oil supplier for other equivalent oils if required.

Mobil	Shell	Chevron	Texaco
Mobilgear 600 XP 150	Omala 150	Gear Compounds EP 150	Meropa 150
Mobilgear 600 XP 220	Omala 220	Gear Compounds EP 220	Meropa 220

Refer to Bulletin No. 503 Rev. 4 for additional gear oil information.

MISCELLANEOUS PARTS GROUP

ITEM NO.	DESCRIPTION	PART NO.	QTY.
48	End Plate, Motor	103155	1
51	Capscrew (1/2 - 13 X 4 1/2 GD8 Z)	23560	8
52	Lockwasher (1/2)	11026	28
53	Ring Gear (50:1)	104111	1
	Ring Gear (36:1)	104110	1
55	Primary Sun Gear (50:1)	103600	1
	Primary Sun Gear (36:1)	107982	1
56	Drum Closure	103041	1
57	Output Sun Gear	103244	1
59	Cable Drum (01P Drum)	103870	1
	Cable Drum (02 Drum)	83047	1
60	Capscrew (1/2 - 13 X 1 1/2 GD8 Z) (160 mm Pilot)	103314	20
	Capscrew (1/2 - 13 X 2.00 GD8Z) (180 mm Pilot)	107278	20
61	Tie Plate (50:1)	103211	2
	Tie Plate (36:1)	103815	2
64	Ball Bearing	24487	1
65	Ball Bearing	24486	1
66	Thrust Washer	103239	1
67	Thrust Washer	29512	1
68	O-Ring	100589	1
69	Seal, Oil	107297	1
70	Seal	70167	1
71	Cable Wedge (NS)	24493	1
72	Plug, O-Ring Flush	32411	1
103	V-Ring Seal	103393	1
105	Drive Screw	11842	4
107	Nameplate	76381	1
108	Closure	70686	1
109	Spacer (36:1) (NS)	104108	4
200	Brake Cylinder Assembly See Pg. 7		
300	Primary Planet Carrier See Pg. 8		
400	Output Planet Carrier See Pg. 9		
500	Drum Support Assembly See Pg. 12		

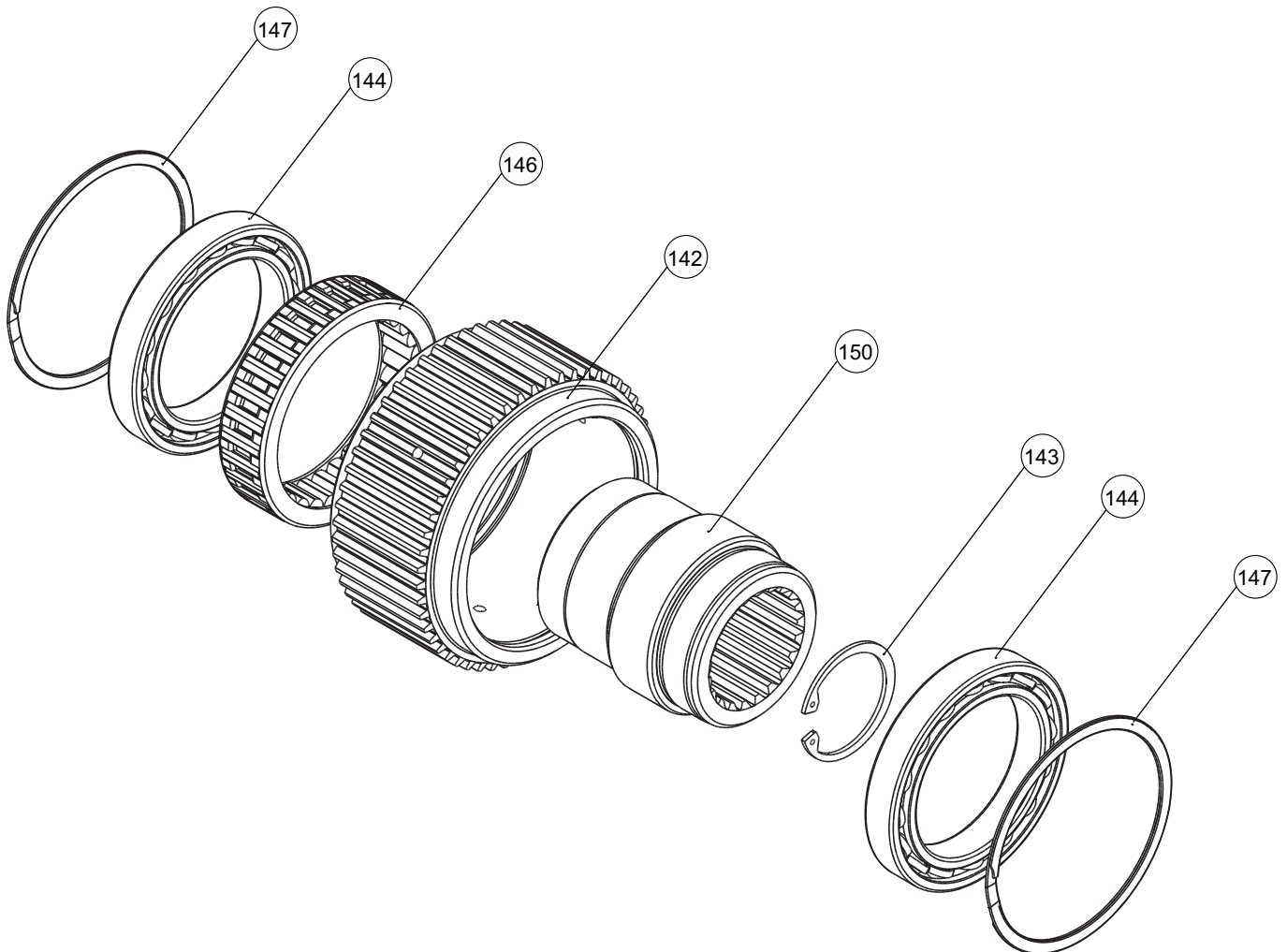
NS - Not Shown

OVERRUNNING CLUTCH GROUP

ITEM NO.	DESCRIPTION	PART NO.	QTY.
142	Outer Race	NSS	1
143	Retaining Ring (140 mm Pilot) (01P Drum)	24506	1
	Retaining Ring (160/180 mm Pilot) (01P/02 Drum)	102150	1
144	Ball Bearing	103104	2
146	Overrunning Clutch	NSS	1
147	Retaining Ring	103110	2
150	Inner Race	NSS	1

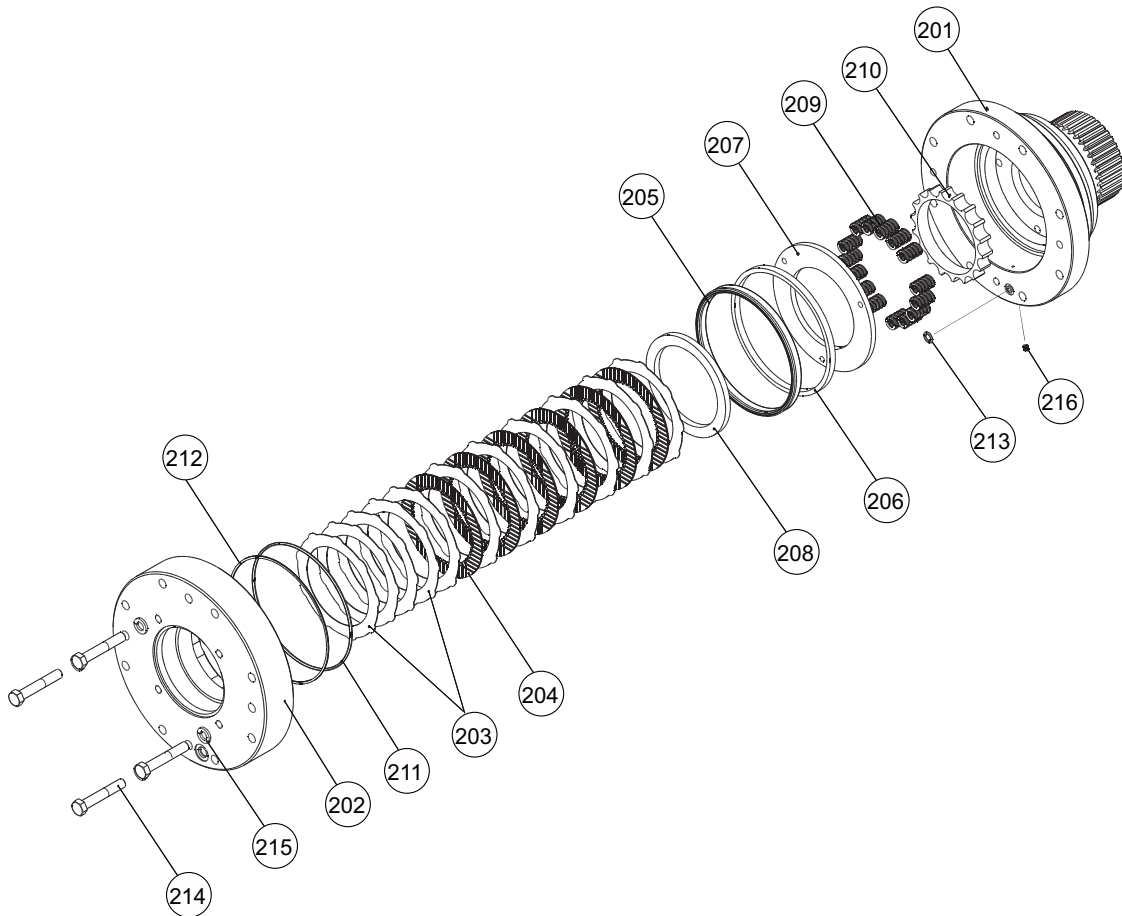
NSS - Not Serviced Separately

ITEM NO.	DESCRIPTION	PART NO.	QTY.
CH210A	Sprag	83751	1
	140 mm Pilot		
	Sprag	83754	1
	160 & 180 mm Pilot		



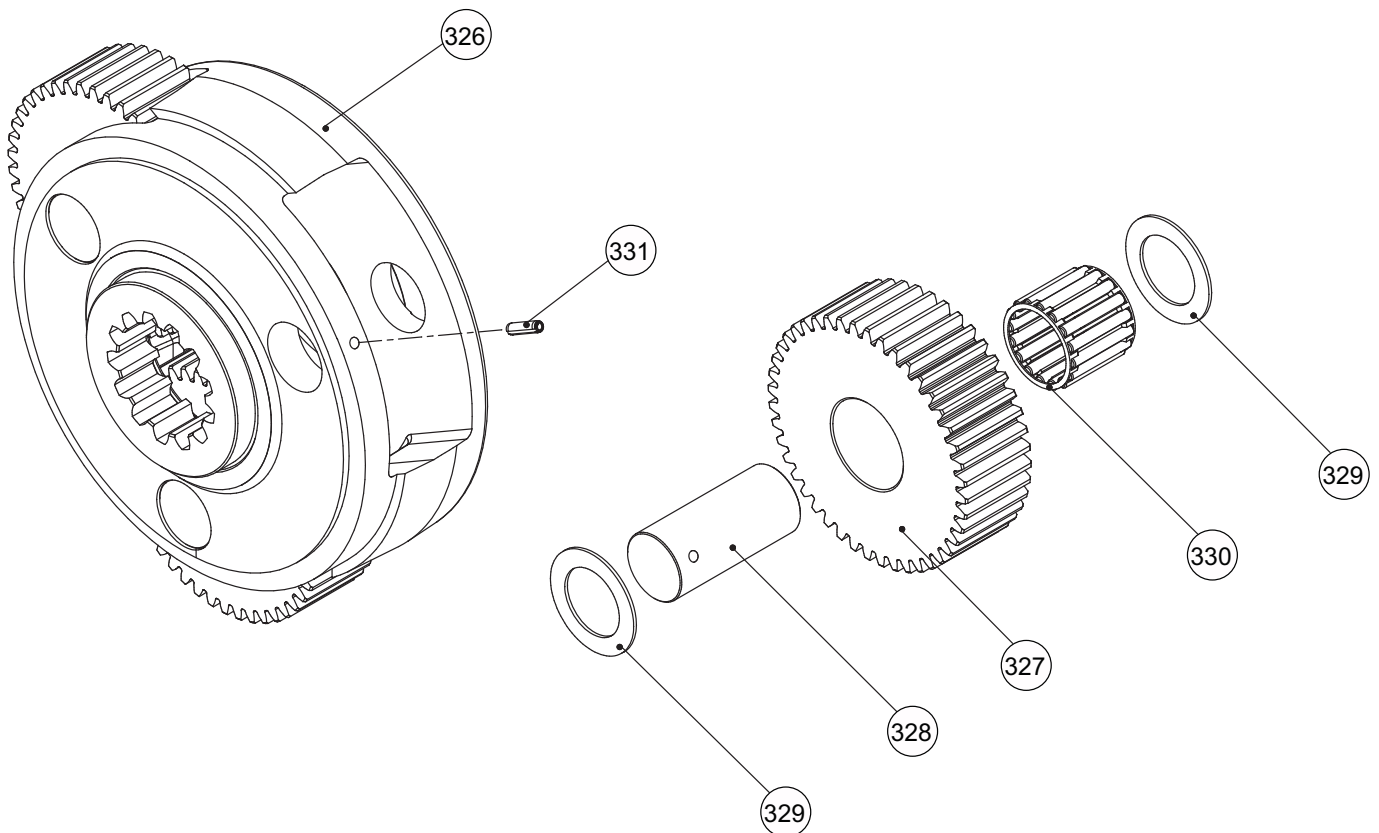
BRAKE CYLINDER ASSEMBLY

ITEM NO.	DESCRIPTION	PART NO.	QTY.
201	Brake Cylinder	102979	1
202	Motor Adapter (140 mm Pilot) (01P Drum)	107976	1
	Motor Adapter (160 mm Pilot) (01P/02 Drum)	107972	1
	Motor Adapter (180 mm Pilot) (02 Drum)	107971	1
203	Brake Disc (140 mm Pilot) (01P Drum)	102954	11
	Brake Disc (160/180 mm Pilot) (02 Drum)	102954	8
204	Friction Disc (140 mm Pilot) (01P Drum)	103167	6
	Friction Disc (180 mm Pilot) (02 Drum)	103167	7
205	Seal, U-Cup	103441	1
206	Piston Back-Up Ring	25746	1
207	Pressure Plate	103168	1
208	Brake Plate Spacer	103169	1
209	Brake Spring (140 mm Pilot) (01P Drum)	24108	15
	Brake Spring (180 mm Pilot) (02 Drum)	24108	18
210	Spring Spacer	103147	1
211	O-Ring	22357	1
212	Back-Up Washer	77278	1
213	O-Ring	13017	1
214	Capscrew (1/2 - 13 X 3.00 GD8 Z) (140/160 mm Pilot)	102347	4
	Capscrew (1/2 - 13 X 2 1/4 GD8 Z) (180 mm Pilot)	107994	4
215	Lockwasher (1/2)	11026	4
216	Expansion Plug	103379	1



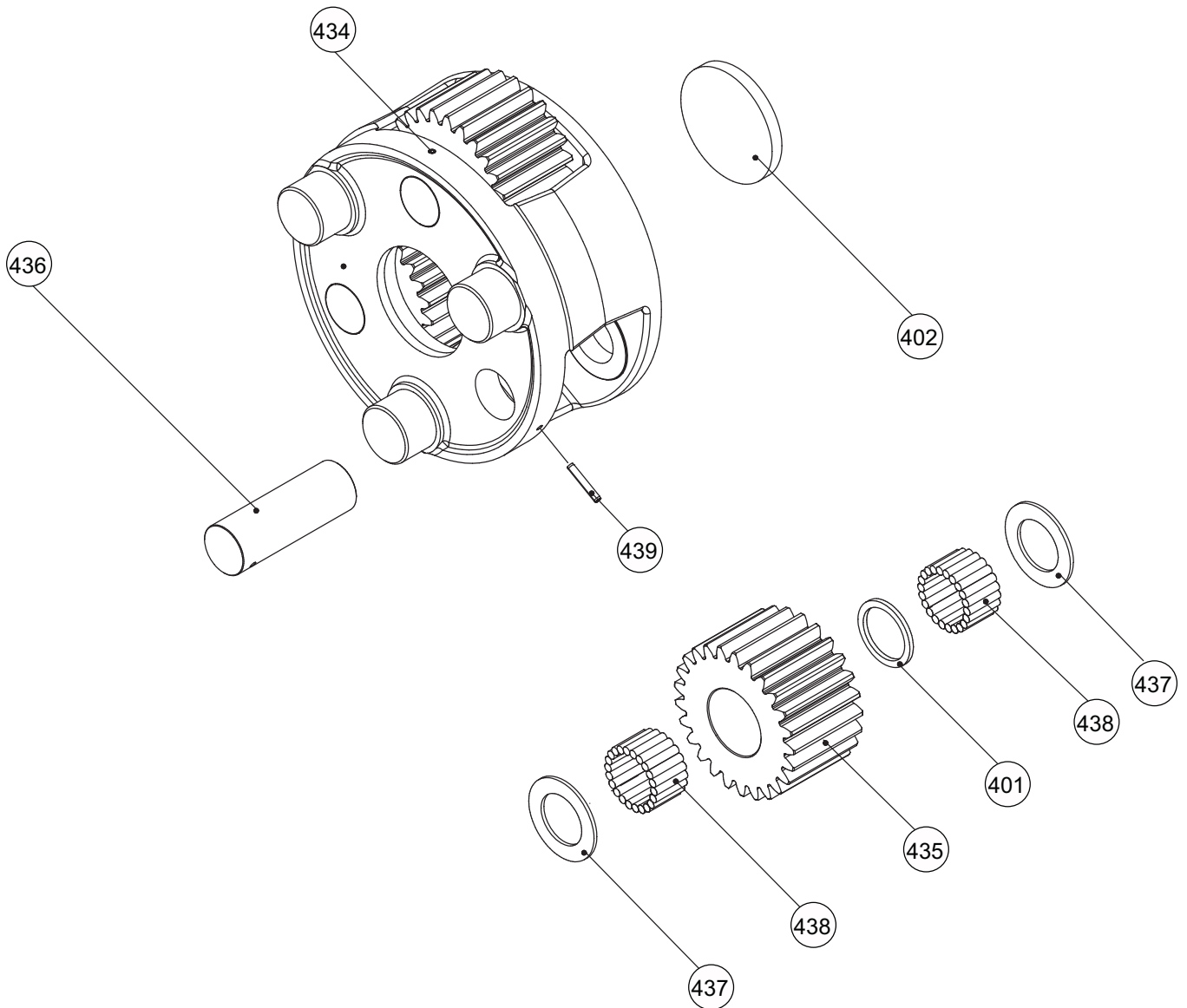
PRIMARY PLANET CARRIER

ITEM NO.	DESCRIPTION	PART NO.	QTY.
326	Primary Planet Carrier (50:1)	103056	1
	Primary Planet Carrier (36:1)	104112	1
327	Primary Planet Gear (50:1)	103237	3
	Primary Planet Gear (36:1)	104114	3
328	Primary Planet Shaft (50:1)	103447	3
	Primary Planet Shaft (36:1)	104113	3
329	Thrust Washer	24306	6
330	Roller Bearing (50:1)	26120	3
	Roller Bearing (36:1)	25292	3
331	Spirol Pin	24113	3



OUTPUT PLANET CARRIER

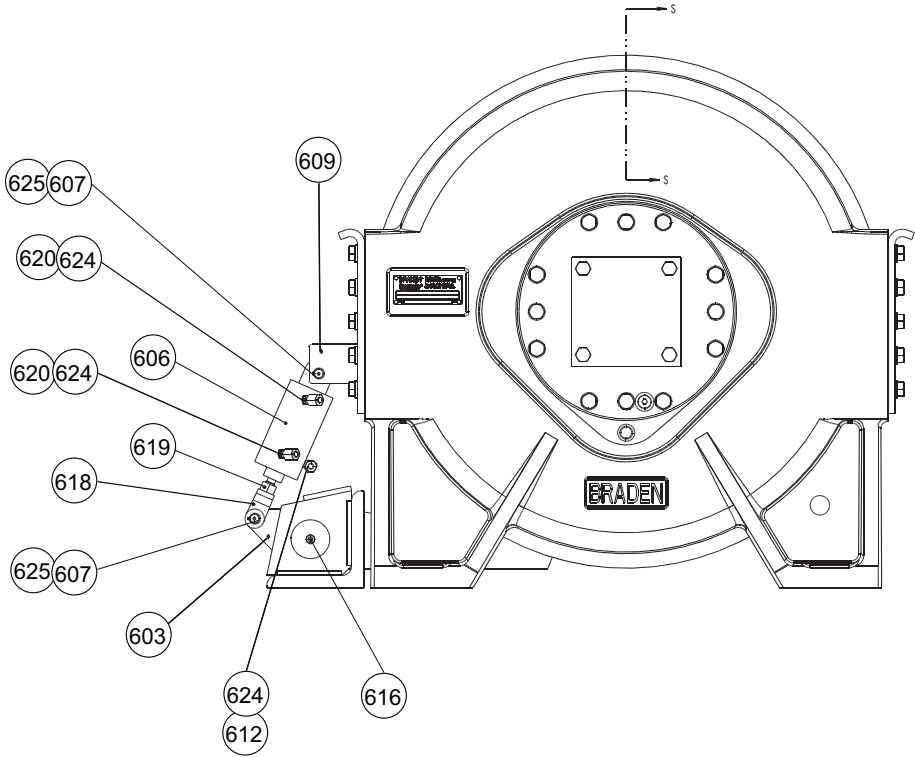
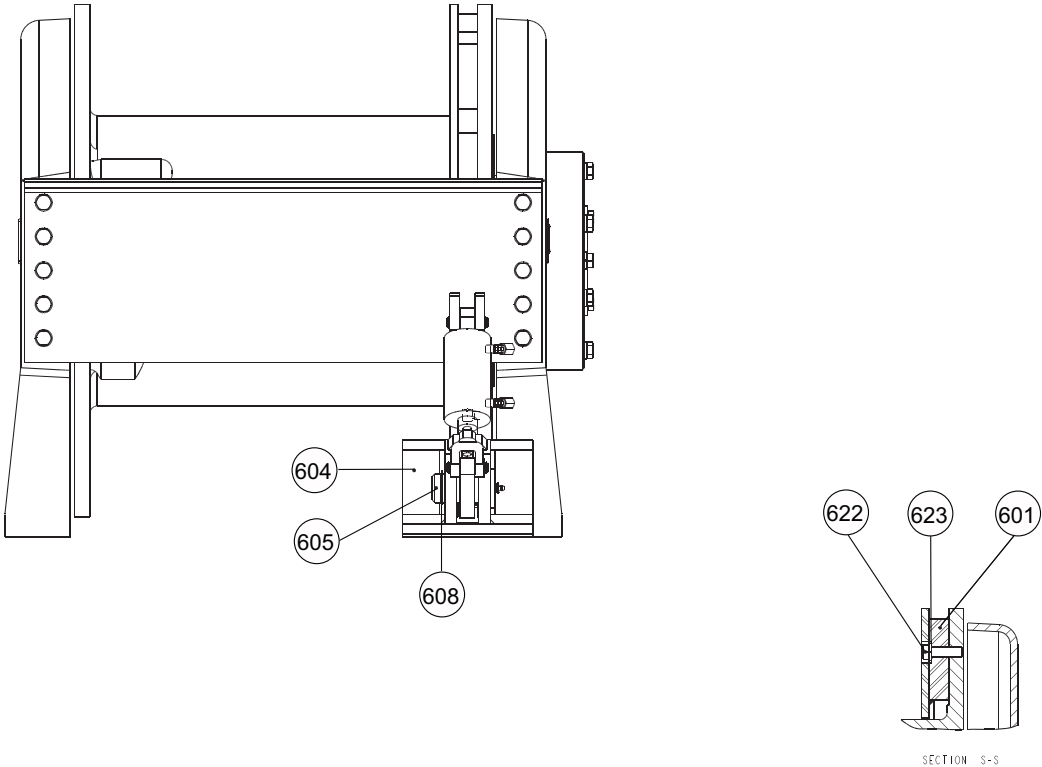
ITEM NO.	DESCRIPTION	PART NO.	QTY.
401	Spacer, Bearing	103682	3
402	Output Thrust Plate	103279	1
434	Output Planet Carrier	103060	1
435	Output Planet Gear	103236	3
436	Output Planet Shaft	103138	3
437	Thrust Washer	103681	6
438	Roller	103683	132
439	Spirol Pin	24582	3



RATCHET & PAWL GROUP

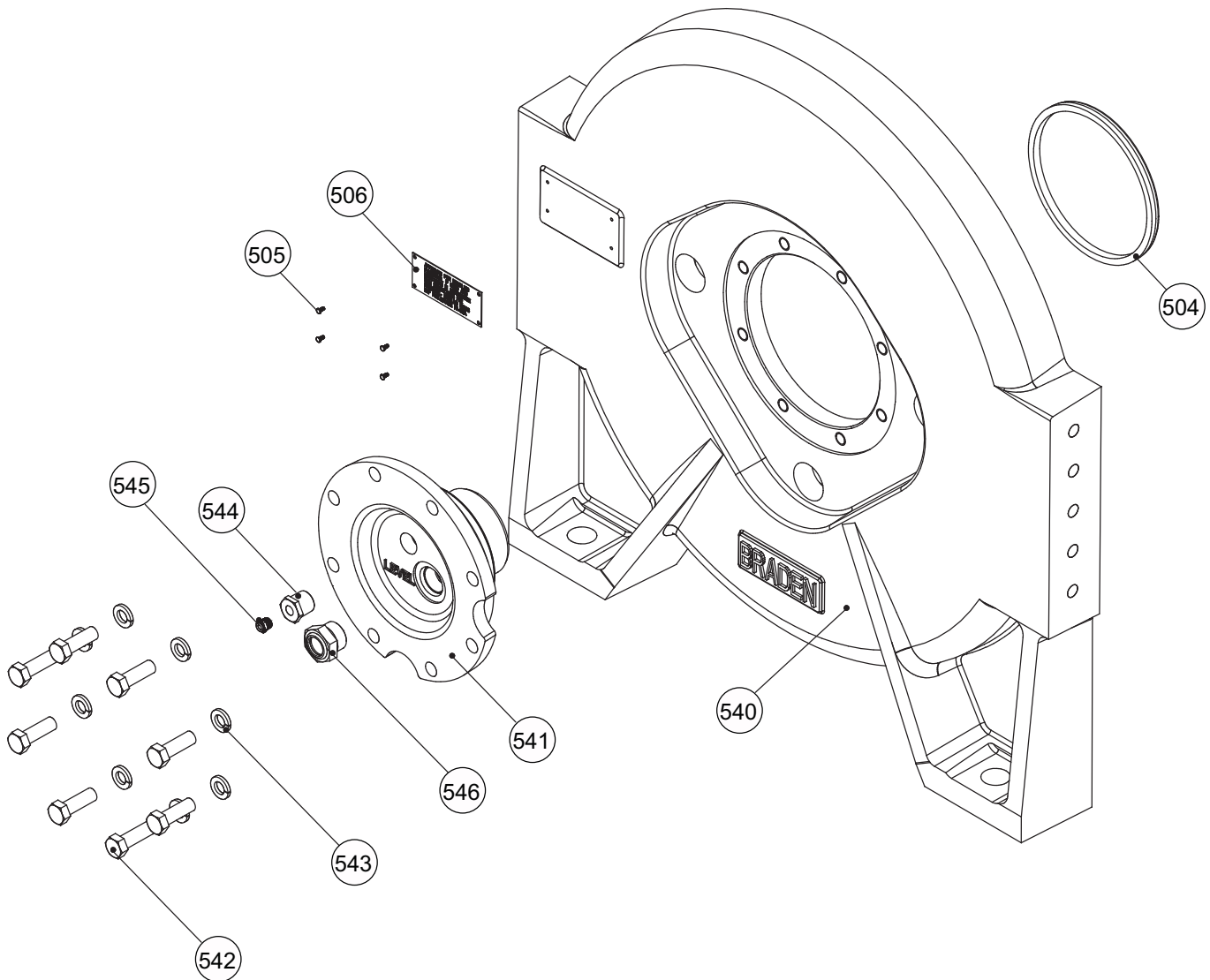
ITEM NO.	DESCRIPTION	PART NO.	QTY.
601	Ratchet Half Assy	83074	2
603	Pawl Assembly	81651	1
604	Pivot Base	24871	1
605	Pin	24876	1
606	Cylinder Assembly	81663	1
607	Pivot Pin	104153	2
608	Snap Ring	12035	1
609	Mounting Plate	52495	2
612	Elbow Tbg Ftg	21163	1
616	Grease Fitting	18047	1
618	Clevis	24882	1
619	Nut-Jam	18004	1
620	Elbow Tbg Ftg	21165	2
622	Capscrew (1/2 - 13 X 1 3/4 GD8 Z)	104323	12
623	Lockwasher (1/2)	11026	12
624	Cap Nut	70182	3
625	Ring, External Retaining	101082	4

RATCHET & PAWL GROUP



DRUM SUPPORT ASSEMBLY

ITEM NO.	DESCRIPTION	PART NO.	QTY.
504	V-Ring Seal	103380	1
505	Drive Screw	11842	4
506	Approval Plate	103501	1
540	End Plate, Support	103156	1
541	Bearing Support	24453	1
542	Capscrew (1/2 - 13 X 1 1/2 GD8 Z)	104322	8
543	Lockwasher (1/2)	11026	8
544	Reducer Bushing	18066	1
545	Relief Valve	18062	1
546	Sight Gauge	70193	1



METRIC CONVERSION TABLE

English to Metric

Metric to English

LINEAR

inches (in.)	X 25.4	= millimeters (mm)	millimeters (mm)	X 0.3937	= inches (in.)
feet (ft.)	X 0.3048	= meters (m)	meters (m)	X 3.281	= feet (ft.)
miles (mi.)	X 1.6093	= kilometers (km)	kilometers (km)	X 0.6214	= miles (mi.)

AREA

inches ² (sq.in.)	X 645.15	= millimeters ² (mm ²)	millimeters ² (mm ²)	X 0.000155	= inches ² (sq.in.)
feet ² (sq.ft.)	X 0.0929	= meters ² (m ²)	meters ² (m ²)	X 10.764	= feet ² (sq.ft.)

VOLUME

inches ³ (cu.in.)	X 0.01639	= liters (l)	liters (l)	X 61.024	= inches ³ (cu.in.)
quarts (qts.)	X 0.94635	= liters (l)	liters (l)	X 1.0567	= quarts (qts.)
gallons (gal.)	X 3.7854	= liters (l)	liters (l)	X 0.2642	= gallon (gal.)
inches ³ (cu.in.)	X 16.39	= centimeters ³ (cc)	centimeters ³ (cc)	X 0.06102	= inches ³ (cu.in.)
feet ³ (cu.ft.)	X 28.317	= liters (l)	liters (l)	X 0.03531	= feet ³ (cu.ft.)
feet ³ (cu.ft.)	X 0.02832	= meters ³ (m ³)	meters ³ (m ³)	X 35.315	= feet ³ (cu.ft.)
fluid ounce (fl.oz.)	X 29.57	= milliliters (ml)	milliliters (ml)	X 0.03381	= fluid ounce (fl.oz.)

MASS

ounces (oz.)	X 28.35	= grams (g)	grams (g)	X 0.03527	= ounces (oz.)
pounds (lbs.)	X 0.4536	= kilograms (kg)	kilograms (kg)	X 2.2046	= pounds (lbs.)
tons (2000 lbs.)	X 907.18	= kilograms (kg)	kilograms (kg)	X 0.001102	= tons (2000 lbs.)
tons (2000 lbs.)	X 0.90718	= metric tons (t)	metric tons (t)	X 1.1023	= tons (2000 lbs.)
tons (long) (2240 lbs.)	X 1013.05	= kilograms (kg)	kilograms (kg)	X 0.000984	= tons (long) (2240 lbs.)

PRESSURE

inches Hg (60°F)	X 3600	= kilopascals (kPa)	kilopascals (kPa)	X 0.2961	= inches Hg (60°F)
pounds/sq.in. (PSI)	X 6.895	= kilopascals (kPa)	kilopascals (kPa)	X 0.145	= pounds/sq.in. (PSI)
pounds/sq.in. (PSI)	X 0.0703	= kilograms/sq.cm. (kg/cm ²)	kilograms/sq.cm. (kg/cm ²)	X 14.22	= pounds/sq.in. (PSI)
pounds/sq.in. (PSI)	X 0.069	= bars	bars	X 14.5	= pounds/sq.in. (PSI)
inches H ₂ O (60°F)	X 0.2488	= kilopascals (kPa)	kilopascals (kPa)	X 4.0193	= inches H ₂ O (60°F)
bars	X 100	= kilopascals (kPa)	kilopascals (kPa)	X 0.01	= bars

POWER

horsepower (hp)	X 0.746	= kilowatts (kW)	kilowatts (kW)	X 1.34	= horsepower (hp)
ft.-lbs./min.	X 0.0226	= watts (W)	watts (W)	X 44.25	= ft.-lbs./min.

TORQUE

pound-inches (in.-lbs.)	X 0.11298	= newton-meters (N-m)	newton-meters (N-m)	X 8.851	= pound-inches (in.-lbs.)
pound-feet (ft.-lbs.)	X 1.3558	= newton-meters (N-m)	newton-meters (N-m)	X 0.7376	= pound-feet (ft.-lbs.)
pound-feet (ft.-lbs.)	X .1383	= kilograms/meter (kg-m)	kilogram/meter (kg-m)	X 7.233	= pound-feet (ft.-lbs.)

VELOCITY

miles/hour (m/h)	X 0.11298	= kilometers/hour (km/hr)	kilometers/hour (km/hr)	X 0.6214	= miles/hour (m/h)
feet/second (ft./sec.)	X 0.3048	= meter/second (m/s)	meters/second (m/s)	X 3.281	= feet/second (ft./sec.)
feet/minute (ft./min.)	X 0.3048	= meter/minute (m/min)	meters/minute (m/min)	X 3.281	= feet/minute (ft./min.)

TEMPERATURE

$$^{\circ}\text{Celsius} = 0.556 (^{\circ}\text{F} - 32)$$

$$^{\circ}\text{Fahrenheit} = (1.8^{\circ}\text{C}) + 32$$

COMMON METRIC PREFIXES

mega	(M)	= 1,000,000 or 10 ⁶	deci	(d)	= 0.1 or 10 ⁻¹
kilo	(k)	= 1,000 or 10 ³	centi	(c)	= 0.01 or 10 ⁻²
hecto	(h)	= 100 or 10 ²	milli	(m)	= 0.001 or 10 ⁻³
deka	(da)	= 10 or 10 ¹	micro	(μ)	= 0.000.001 or 10 ⁻⁶