

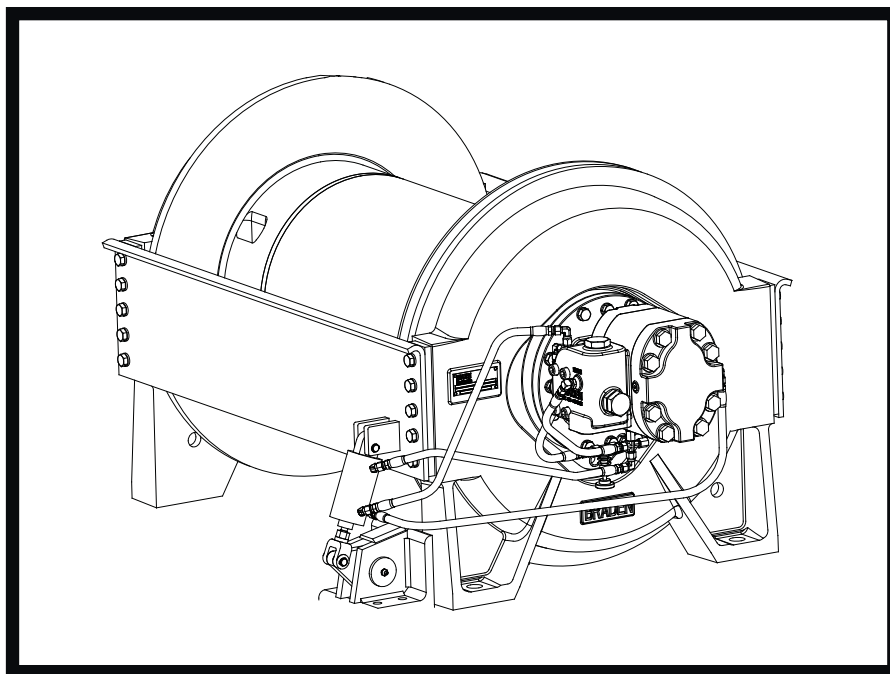
BRADEN®

CH280A

HYDRAULIC WINCH

MATERIAL LIST

Covers Units 06089, 06090, 06091, & 06109

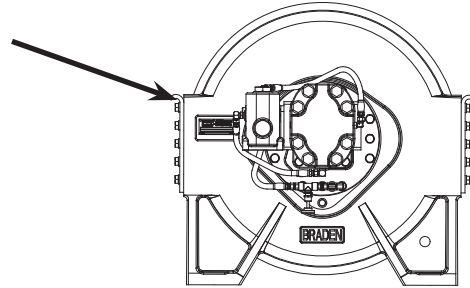


PACCAR WINCH DIVISION

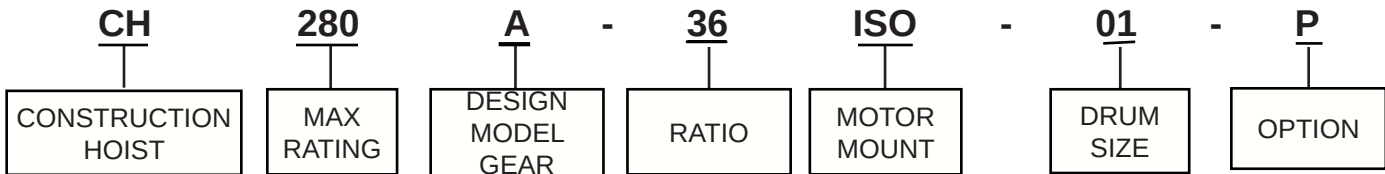
P. O. BOX 547 BROKEN ARROW, OK U.S.A. 74013
PHONE (918) 251-8511 FAX (918) 259-1575
www.paccarwinch.com

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

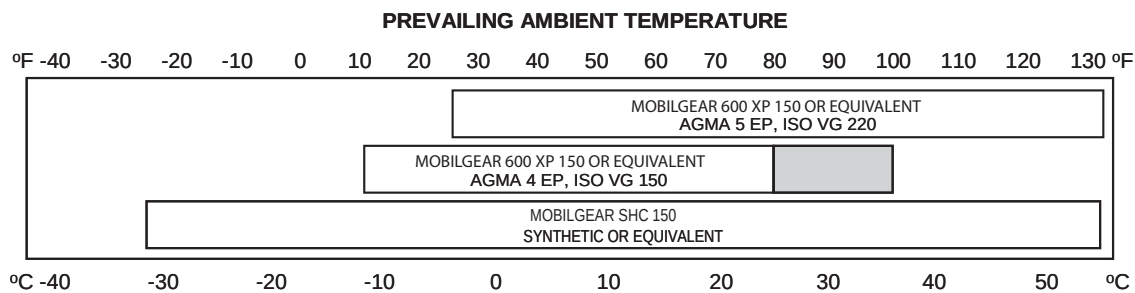


CH	DESIGNATES CONSTRUCTION HOIST
280	DESIGNATES 28,000 LB FIRST LAYER LINE PULL
A	DESIGNATES THE MODEL SERIES RELATING TO DESIGN CHANGES
36	DESIGNATES TOTAL GEAR REDUCTION (36:1; 50:1)
ISO	DESIGNATES MOTOR MOUNT
01	DESIGNATES THE DRUM OPTION
P	DESIGNATES RATCHET AND PAWL

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



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.

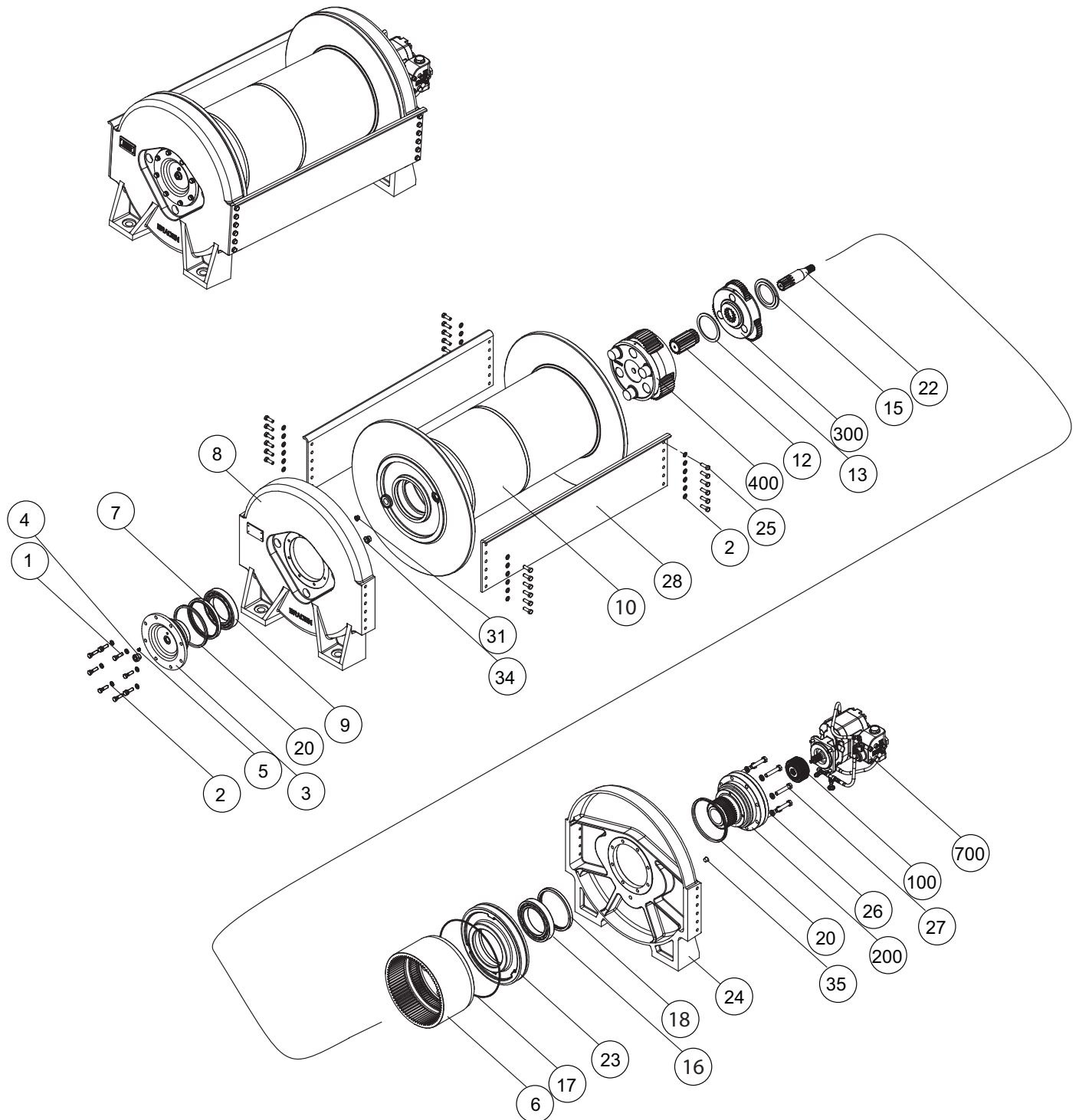
Mobil	Shell	Chevron	Texaco
Mobilgear 600 XP 150	Omala 150	Gear Compounds EP 150	Meropa 150
Mobilgear 600 XP 220	Omala 220	Gear Compounds EP 220	Meropa 220

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

MISCELLANEOUS PARTS GROUP

ITEM NO.	DESCRIPTION	PART NO.	QTY.
1	Capscrew	104323	8
2	Lockwasher	11026	32
3	Bearing Support	106597	1
4	Sight Gauge	70193	1
5	Relief Valve	18062	1
6	Ring Gear	106641	1
7	Seal	10427	1
8	End Plate, Support	106671	1
9	Ball Bearing	24487	1
10	Cable Drum Assembly - 01P Drum	83539	1
	Cable Drum Assembly - 02 Drum	83536	1
12	Output Sungear	106621	1
13	Thrust Washer	104365	1
15	Thrust Washer	106670	1
16	Ball Bearing	106673	1
17	O'Ring	103317	1
18	Seal	70167	1
20	V-Ring Seal	103393	2
22	Primary Sun Gear - (160 mm Pilot)	107984	1
	Primary Sun Gear - (180 mm Pilot)	107987	1
23	Drum Closure	106625	1
24	End Plate, Motor	106642	1
25	Capscrew (1/2 - 13 X 1 1/2 GD8 Z)	103314	24
26	Lockwasher (5/8 Z Split) (160 mm Pilot)	102423	8
	Lockwasher (5/8 Hi Col) (180 mm Pilot)	102335	8
27	Capscrew (5/8 - 18 X 4 1/2 GD8 Z) (160 mm Pilot)	22512	8
	Capscrew (5/8 - 18 X 3 1/2 GD8 Z) (180 mm Pilot)	107998	8
28	Tie Plate - 02 Drum	106911	1
	Tie Plate - 01P Drum	106647	2
30	Drive Screw	11842	4
31	Plug, O'Ring Flush	32411	1
32	Nameplate	76381	1
33	Cable Wedge	24494	1
34	Plug	22450	1
35	Closure	70686	1
100	Overrunning Clutch Assy. See Pg. 6.		
200	Brake Cylinder Assy. See Pg. 7.		
300	Primary Planet Carrier. See Pg. 8.		
400	Output Planet Carrier. See Pg. 9.		
700	Motor Group		

MISCELLANEOUS PARTS GROUP

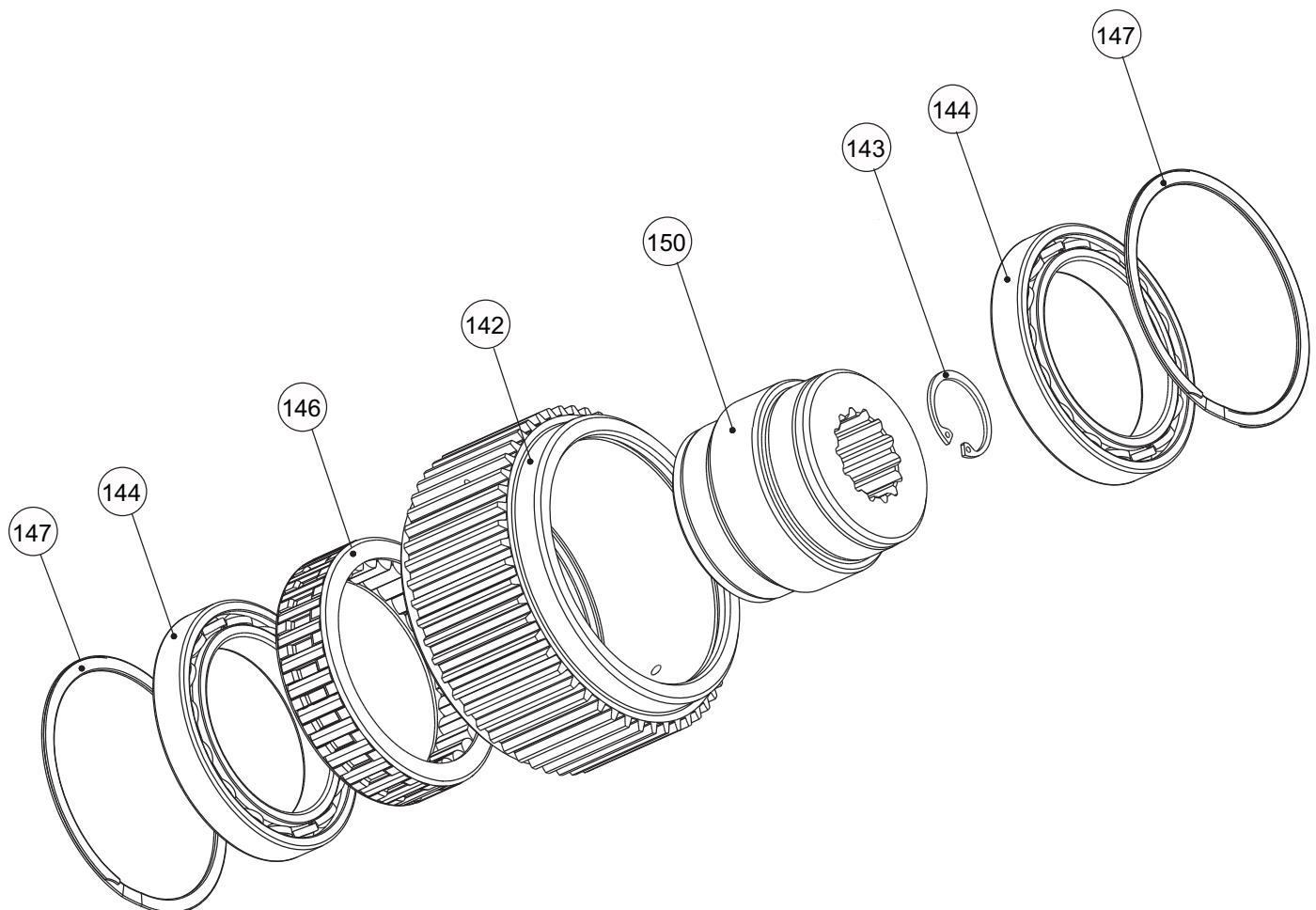


OVERRUNNING CLUTCH ASSEMBLY

ITEM NO.	DESCRIPTION	PART NO.	QTY.
142	Outer Race	NSS	1
143	Retaining Ring (02 Drum) (160 mm Pilot)	102150	1
	Retaining Ring (01P & 02 Drum) (180 mm Pilot)	29140	1
	Retaining Ring (01P Drum) (160 mm Pilot)	24506	1
144	Ball Bearing	103104	2
146	Overrunning Clutch	NSS	1
147	Retaining Ring	103110	2
150	Inner Race	NSS	1

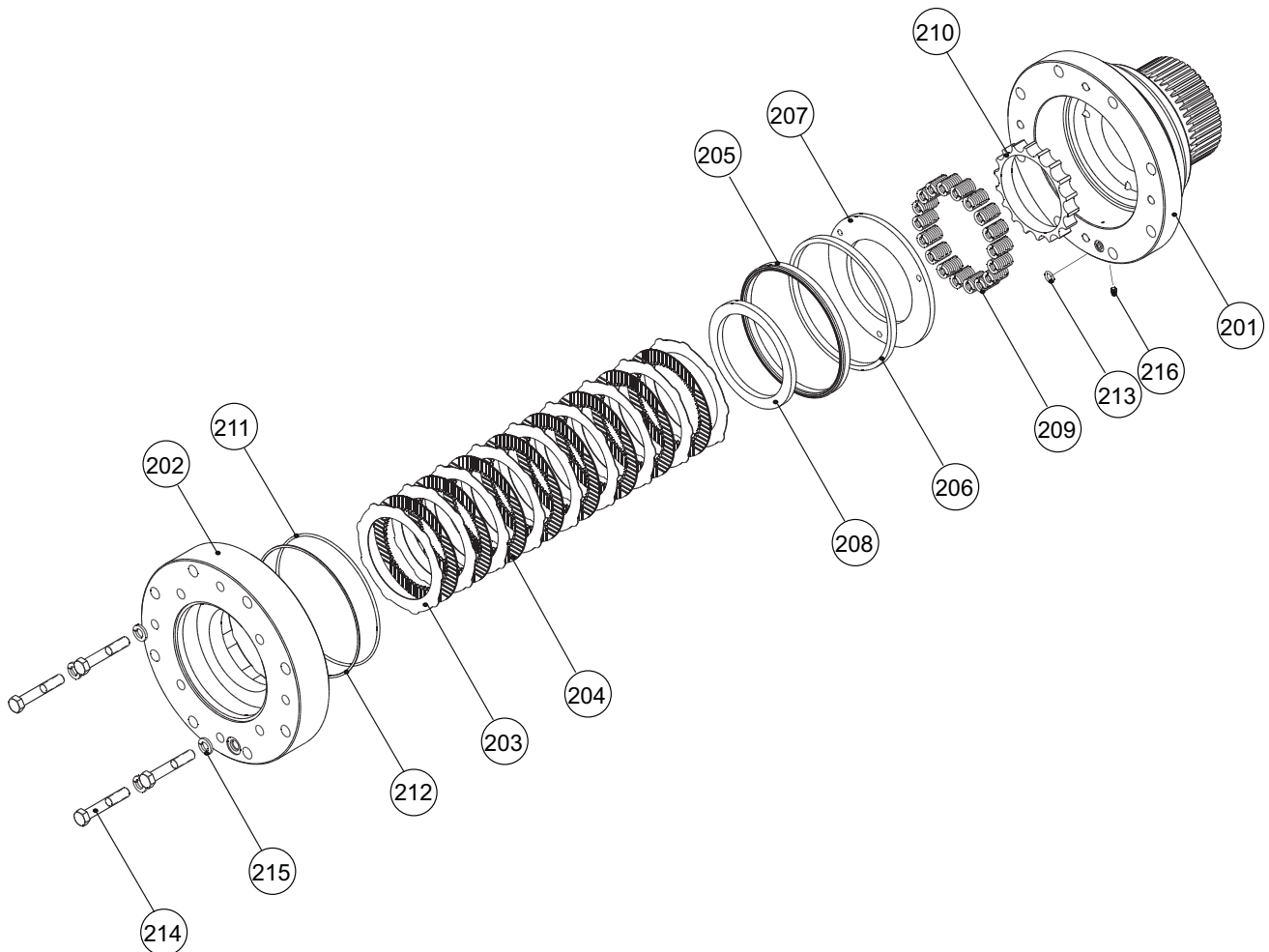
NSS - Not Serviced Separately

ITEM NO.	DESCRIPTION	PART NO.	QTY.
CH280A	Sprag	83754	1
	160 mm Pilot, 02 Drum		
	Sprag	82908	1
	160 mm Pilot, 01P		
	Sprag	83759	1
	180 mm Pilot		



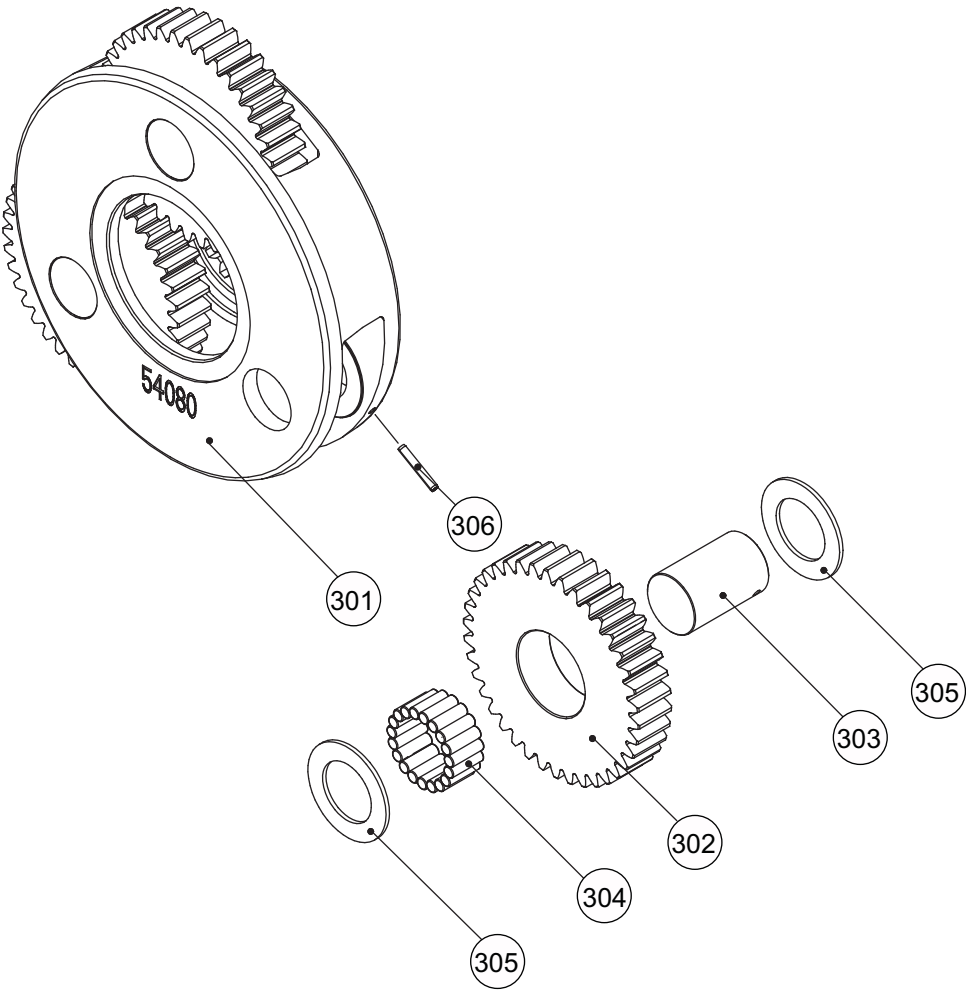
BRAKE CYLINDER ASSEMBLY

ITEM NO.	DESCRIPTION	PART NO.	QTY.
201	Brake Cylinder	106599	1
202	Motor Adapter - 160 mm Pilot	107988	1
	Motor Adapter - 180 mm Pilot	107989	1
203	Brake Disc	102954	9
204	Friction Disc	103167	8
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 (54:1)	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) (160 mm Pilot)	102347	4
	Capscrew (1/2 - 13 X 2 1/4 GD8 Z) (180 mm Pilot)	27247	4
215	Lockwasher, Hi Collar (1/2) (180 mm Pilot)	103254	4
	Lockwasher, Z Split (1/2) (160 mm Pilot)	11026	4
216	Expansion Plug	103379	1



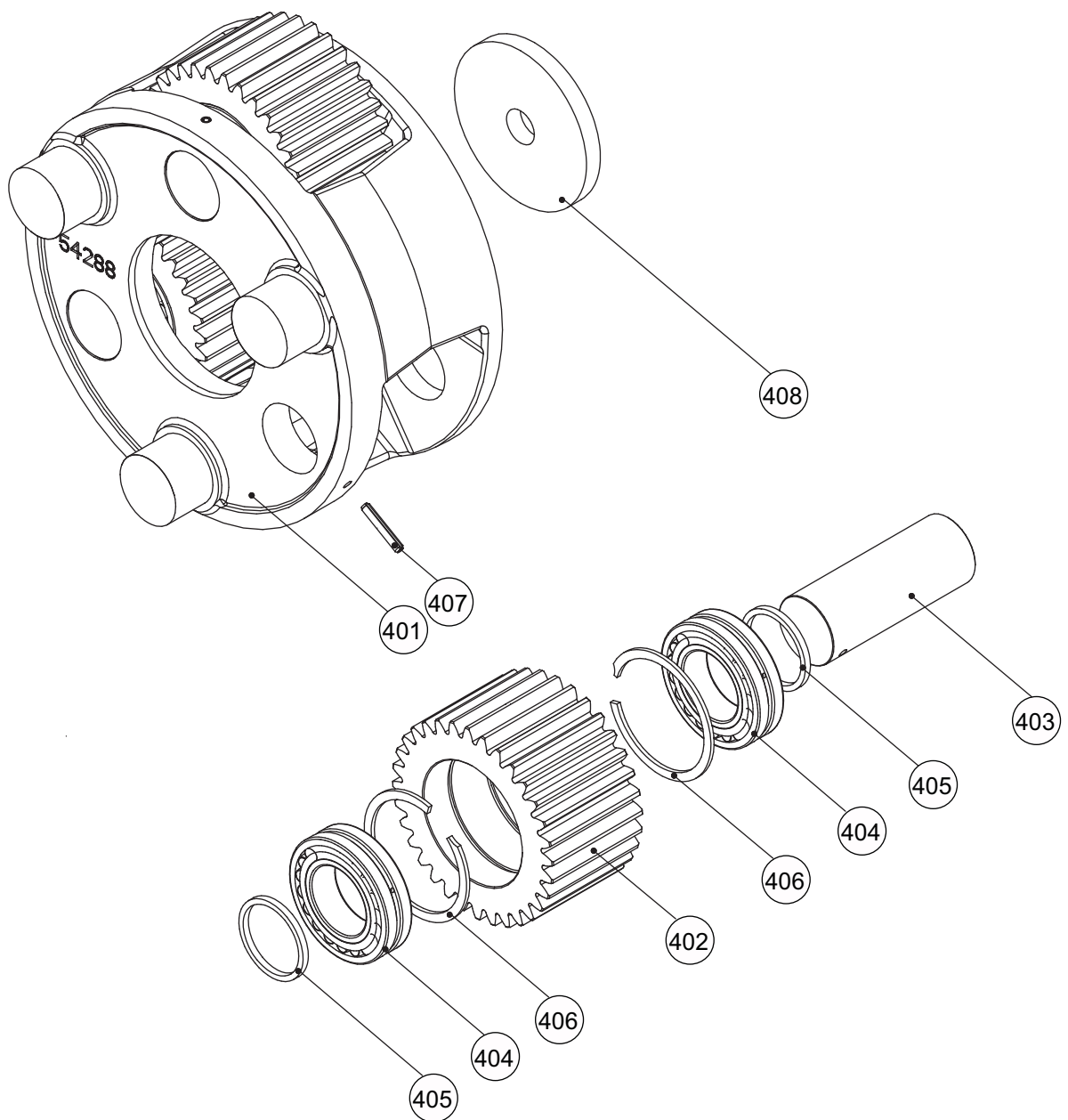
PRIMARY PLANET CARRIER

ITEM NO.	DESCRIPTION	PART NO.	QTY.
301	Primary Planet Carrier	106648	1
302	Primary Planet Gear	104151	3
303	Primary Planet Shaft	104355	3
304	Rotor Roller	11104	57
305	Thrust Washer	103681	6
306	Spirol Pin	24582	3



OUTPUT PLANET CARRIER

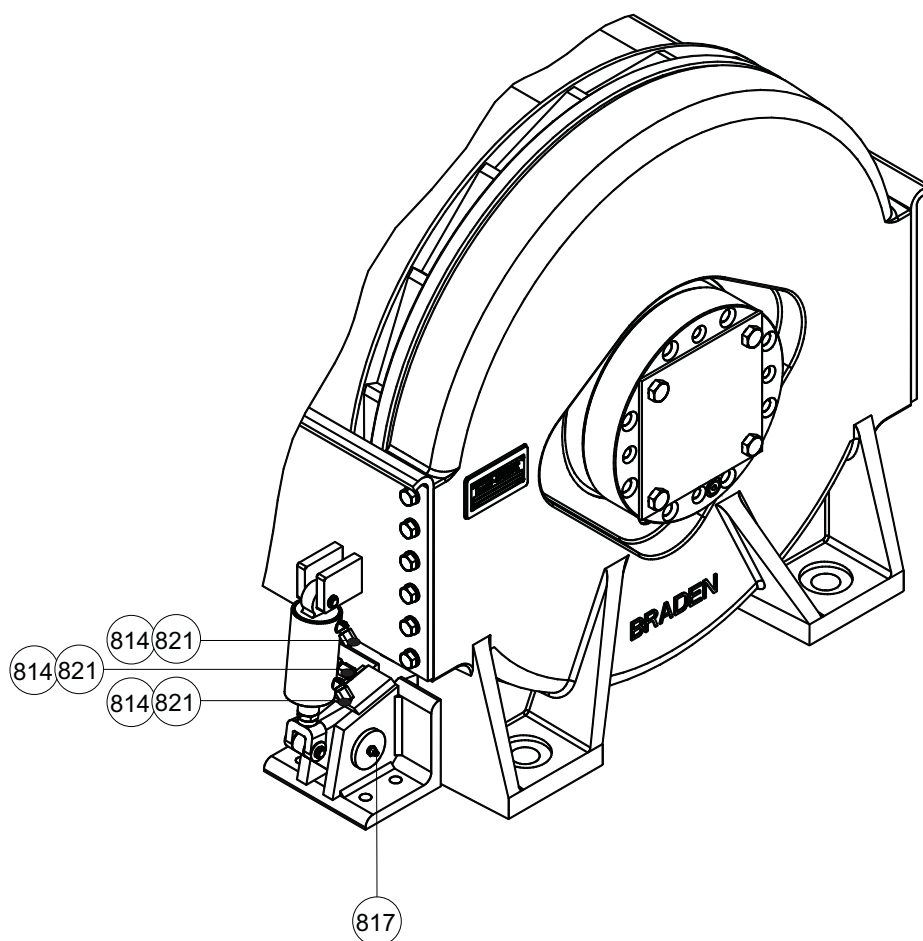
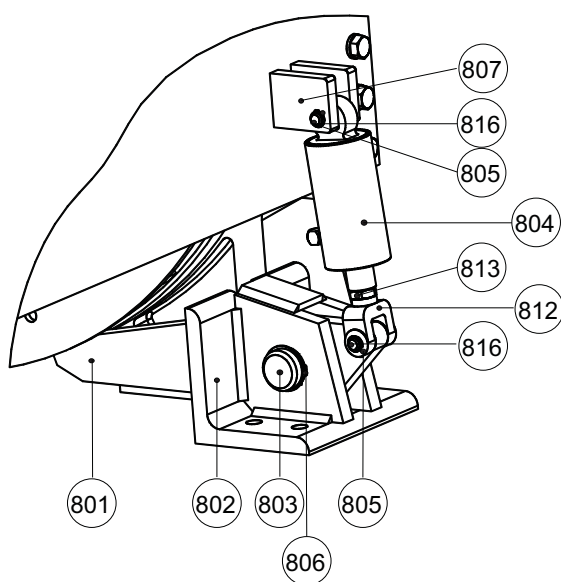
ITEM NO.	DESCRIPTION	PART NO.	QTY.
401	Output Planet Carrier	106634	1
402	Ouput Planet Gear	106620	3
403	Ouput Planet Shaft	106643	3
404	Bearing	107715	6
405	Spacer	107713	6
406	Retaining Ring	107716	3
407	Rollpin	18055	3
408	Output Thrust Plate	106649	1



RATCHET & PAWL GROUP

ITEM NO.	DESCRIPTION	PART NO.	QTY.
801	Pawl Assembly	40155	1
802	Pivot Base	24871	1
803	Pin	24876	1
804	Cylinder Assembly	81663	1
805	Pivot Pin	104153	2
806	Snap Ring	12035	1
807	Mounting Plate	52495	2
808	Elbow Tbg Ftg	21163	1
812	Clevis	24882	1
813	Nut-Jam	18004	1
814	Elbow Tbg Ftg	21165	2
816	Ring, External Retaining	101082	4
817	Grease Fitting	18047	1
821	Cap Nut	70182	3

RATCHET & PAWL GROUP



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