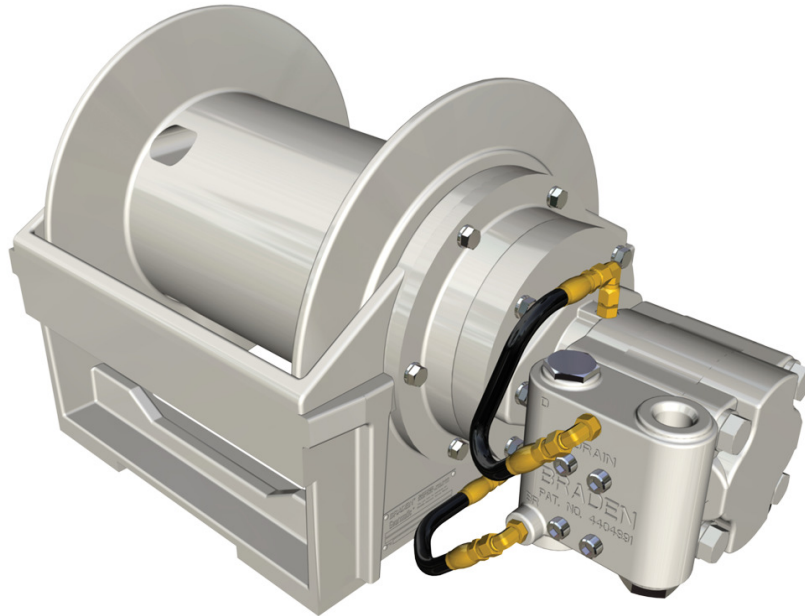




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PARTS LIST



WRITE HOIST SERIAL NUMBER BELOW

--	--	--	--	--	--	--	--

First 2 numbers indicate
year manufactured

For serial number location see page 3

TABLE OF CONTENTS

LUBRICATION.....	4
SERVICE KITS.....	5
BG8B COMMON PARTS	6-7
PRIMARY PLANET CARRIER ASSEMBLY	8
OUTPUT PLANET CARRIER ASSEMBLY.....	9
BRAKE CYLINDER ASSEMBLY	10
OVERRUNNING CLUTCH ASSEMBLY.....	11
MOTOR GROUPS.....	12-17
BRAKE VALVE ASSEMBLY	18
METRIC CONVERSION CHART	19

FOREWORD

Read this entire publication and retain it for future reference.

If you have any questions regarding your BRADEN BG8B Hoist or this publication, call the BRADEN Service Department at 1-918-251-8511, 08:00-16:30 hours Central Time Zone, Monday through Friday.

Some illustrations in this manual may show details or attachments that are different from your hoist. Also, some components have been removed for illustrative purposes. Illustrations and pictures in this manual are of a “typical” unit sold through our distribution channels. Some hoists, particularly those sold to original equipment manufacturers, may differ slightly in appearance.

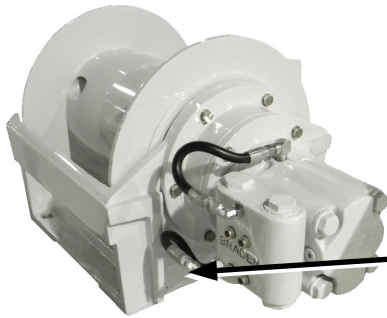
Whenever a question arises regarding your BRADEN Hoist, please contact the BRADEN Service Department for the latest available information.

PACCAR WINCH
Service Department
P.O. Box 547
Broken Arrow, Oklahoma 74013-0547 United States of America
www.paccarwinch.com



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info@pacificmarine.net

EXPLANATION OF MODEL NUMBER



The hoist model number and serial number are stamped onto the data plate of the motor side end plate. Both of these numbers are extremely important in the shipment of the proper replacement parts, and your order should always reference them.

HOIST SERIAL NUMBER

HOIST MODEL NUMBER

<u>BG</u>	<u>8</u>	<u>B</u>	<u>34</u>	<u>039</u>	<u>01</u>	<u>1</u>
BRADEN GEARMATIC	MAX RATING	DESIGN MODEL	GEAR RATIO	MOTOR SIZE	DRUM SIZE	PERSONNEL HANDLING

- BG** DESIGNATES BRADEN GEARMATIC
- 8** DESIGNATE 8,000 LB FIRST LAYER LINE PULL
- B** DESIGNATES THE MODEL SERIES RELATING TO DESIGN CHANGES
- 34** DESIGNATES TOTAL GEAR REDUCTION
(23 = 23.06:1; 34 = 34.2:1; 59 = 59.06:1; 69/23 [69.19:1 Hoist
23.06:1 Lower])
- 039** DESIGNATES HYDRAULIC MOTOR DISPLACEMENT IN CU IN/REV
(DECIMAL POINT ELIMINATED - EXAMPLE 039 – 3.9 CU IN/REV)
- 01** DESIGNATES THE DRUM OPTION
- 1** MEETS API 2C RECOMMENDATION

TO ORDER PARTS -

- (1) List model and serial numbers of the hoist
- (2) Refer to exploded view and select the component(s) needed and note item number
- (3) Find item number on material list, show PART NO., description and quantity required on your order
- (4) Refer to Parts Price list and show price for each component or assembly

FOR BEST RESULTS, ALWAYS USE GENUINE BRADEN REPLACEMENT PARTS



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LUBRICATION



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RECOMMENDED PLANETARY GEAR OIL

Field experience, supported by engineering endurance tests, indicates the use of the proper gear oil and a program of regular preventive maintenance will help provide extended gear train life and reliable hoist brake performance. For this reason, BRADEN has published the following specifications to assist in determining which lubricant is best suited to your application.

For simplicity, BRADEN has listed available products in each temperature range that have been tested and found to meet our specifications. This is not to say that other lubricant brands would not perform equally as well.

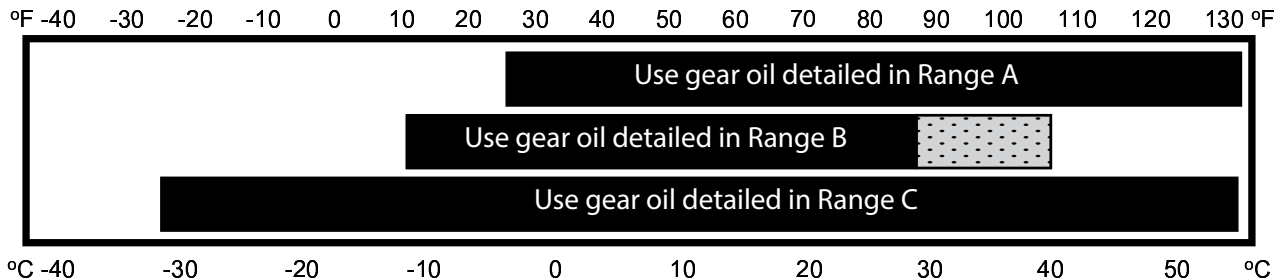
If the following lubricant brands are not available in your area, make certain your lubricant vendor supplies you with oil equivalent to those products listed below.

⚠ WARNING ⚠

Failure to use the proper type and viscosity of planetary gear oil may contribute to intermittent brake clutch slippage, which could result in property damage, severe personal injury, or death. Some gear lubricants contain large amounts of EP (Extreme Pressure) and anti-friction additives, which may contribute to brake clutch slippage or damage to brake friction discs or seals. **NOTE: DO NOT use oil that is labeled as meeting "API Service GL-5."** Oil viscosity, affected by ambient temperature, is also critical to reliable brake clutch operation. Our tests indicate excessively heavy or thick gear oil may contribute to intermittent brake clutch slippage. Make certain the gear oil viscosity used in your hoist is correct for your prevailing ambient temperature.

RECOMMENDED GEAR OIL

PREVAILING AMBIENT TEMPERATURE



SHADED TEMPERATURE RANGE IN THE CHART ABOVE NOT RECOMMENDED FOR SEVERE APPLICATIONS SUCH AS SUSTAINED FAST DUTY CYCLES OR FREQUENT WINCHING.

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

	Mobil	Shell	Chevron	Texaco
Range A	Mobilgear 600 XP 220	Omala S2 G 220	Gear Compounds EP 220	Meropa 220
Range B	Mobilgear 600 XP 150	Omala S2 G 150	Gear Compounds EP 150	Meropa 150
Range C	Mobilgear SHC 150	Omala S4 GX 150		

⚠ WARNING ⚠

Failure to properly warm up the winch, particularly under low ambient temperature conditions, may result in temporary brake slippage due to high back pressures attempting to release the brake, which could result in property damage, severe personal injury or death.

If you have any questions regarding this bulletin or your BRADEN planetary winch, please contact the BRADEN Product Support Department at 1-918-251-8511, Monday through Friday from 08:00 to 16:30 hours CST, or by fax at 1-918-259-1575.



SERVICE KITS

SEAL KIT - EQUAL-SPEED HOIST

PART NO.	DESCRIPTION
63674	BG8B - EQUAL SPEED HOISTS INCLUDES ITEMS 2, 8, 9, 29, 43, 67, 80

64572 BEARING KIT - EQUAL-SPEED HOIST

PART NO.	DESCRIPTION	QTY.
25299	BALL BEARING	1
72385	BEARING	1
25300	THRUST RING	1
76142	THRUST RING	1
24914	THRUST WASHER	6
25333	ROLLER BEARING	3
12026	ROLLPIN	3
25332	PRIMARY PLANET GEAR SHAFT	3
25361	BEARING RACE	6
24175	ROLLER BEARING	6
24890	BEARING SPACER	3
21049	ROLLPIN	3
25666	SECONDARY PLANET GEAR SHAFT	3

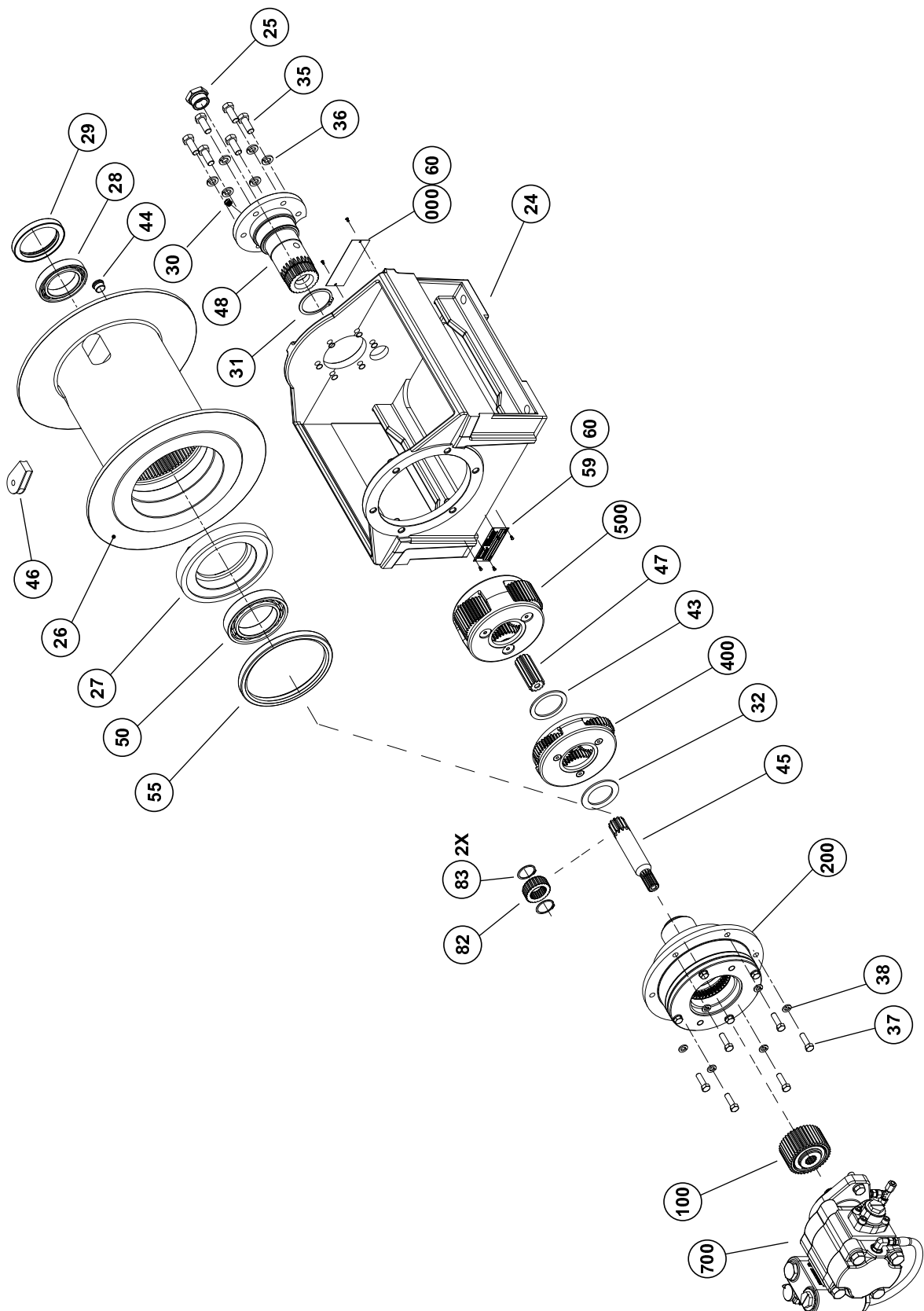
64571 BRAKE SERVICE KIT - EQUAL-SPEED HOIST

PART NO.	DESCRIPTION	QTY.
100027	BRAKE DISC	6
21036	FRICTION DISC	5
25723	SPRING	12

BG8B COMMON PARTS



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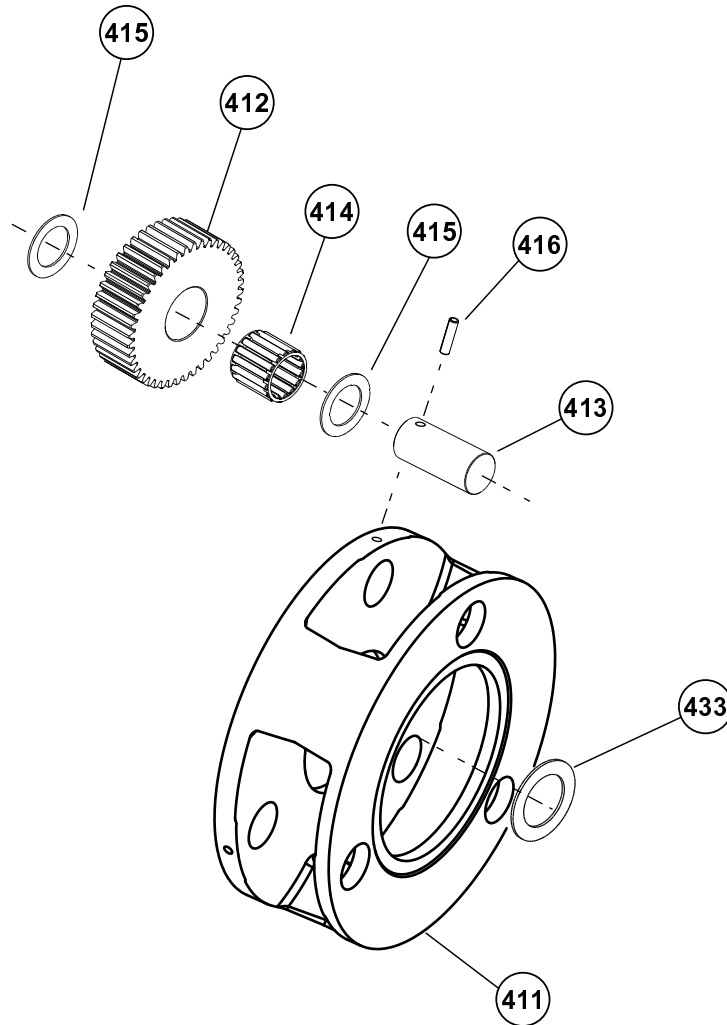
BG8B COMMON PARTS

ITEM	DESCRIPTION	PART NO.	QTY.
24	BASE	25977	1
25	OIL LEVEL PLUG	24420	1
25	OIL LEVEL SIGHT GAUGE	25958	1
26	CABLE DRUM	103312	1
27	CABLE DRUM CLOSURE	103313	1
28	BALL BEARING	25299	1
29	SEAL, LIP	28844	1
30	RELIEF VALVE 7.5-15 PSI	18062	1
31	SNAP RING	25528	1
32	THRUST RING	25300	1
35	CAPSCREW 1/2-13 X 1-1/4 GD8-Z HX HD	104174	6
36	LOCKWASHER 1/2 Z	11026	8
37	CAPSCREW 3/8-16 X 1-1/4 GD8 Z HX HD	104132	6
38	LOCKWASHER 3/8 Z	27152	6
43	THRUST RING	76142	1
44	PLUG, O-RING FLUSH	32411	1
45	SUN GEAR - PRIMARY (34:1 RATIO MODELS)	25511	1
45	SUN GEAR - PRIMARY (23:1 AND 59:1 RATIO MODELS)	102928	1
46	CABLE WEDGE 3/8-9/16 (10-14 MM)	74780	1
47	SUN GEAR - OUTPUT (23:1 AND 34:1 RATIO MODELS)	25509	1
47	SUN GEAR - OUTPUT (59:1 RATIO MODELS)	24891	1
48	BEARING SUPPORT - STANDARD	28843	1
48	BEARING SUPPORT - HEAVY DUTY ("H") MODELS	29685	1
50	BEARING	72385	1
55	SEAL-OIL	22818	1
58	CAPSCREW 1/2-13 X 1-1/2 GD8 Z HX HD	104322	2
59	NAMEPLATE	76381	1
60	DRIVE SCREW (for NAMEPLATE)	11842	4
000	APPROVAL PLATE, PERSONNEL HANDLING (API) MODELS	NSS*	1
82	PRIMARY SUN GEAR (23:1 RATIO MODELS ONLY)	25507	1
83	SNAP RING (23:1 RATIO MODELS ONLY)	24934	2
100	SPRAG CLUTCH ASSEMBLY (SEE PG 11)	81987	1
200	BRAKE CYLINDER ASSEMBLY (SEE PG 10)	82862	1
400	PRIMARY PLANET CARRIER ASSY (59:1 RATIO MODELS)	81800	1
400	PRIMARY PLANET CARRIER ASSY (34:1 RATIO MODELS)	81808	1
400	PRIMARY PLANET CARRIER ASSY (23:1 RATIO MODELS)	81811	1
500	OUTPUT PLANET CARRIER ASSY (59:1 RATIO MODELS)	81803	1
500	OUTPUT PLANET CARRIER ASSY (34:1 AND 23:1 RATIO MODELS)	81810	1
700	HYDRAULIC MOTOR SUBASSEMBLY (SEE PGS 12-14)	-	1
* NOT SERVICED SEPARATELY - CONTACT FACTORY			

PRIMARY PLANET CARRIER ASSY

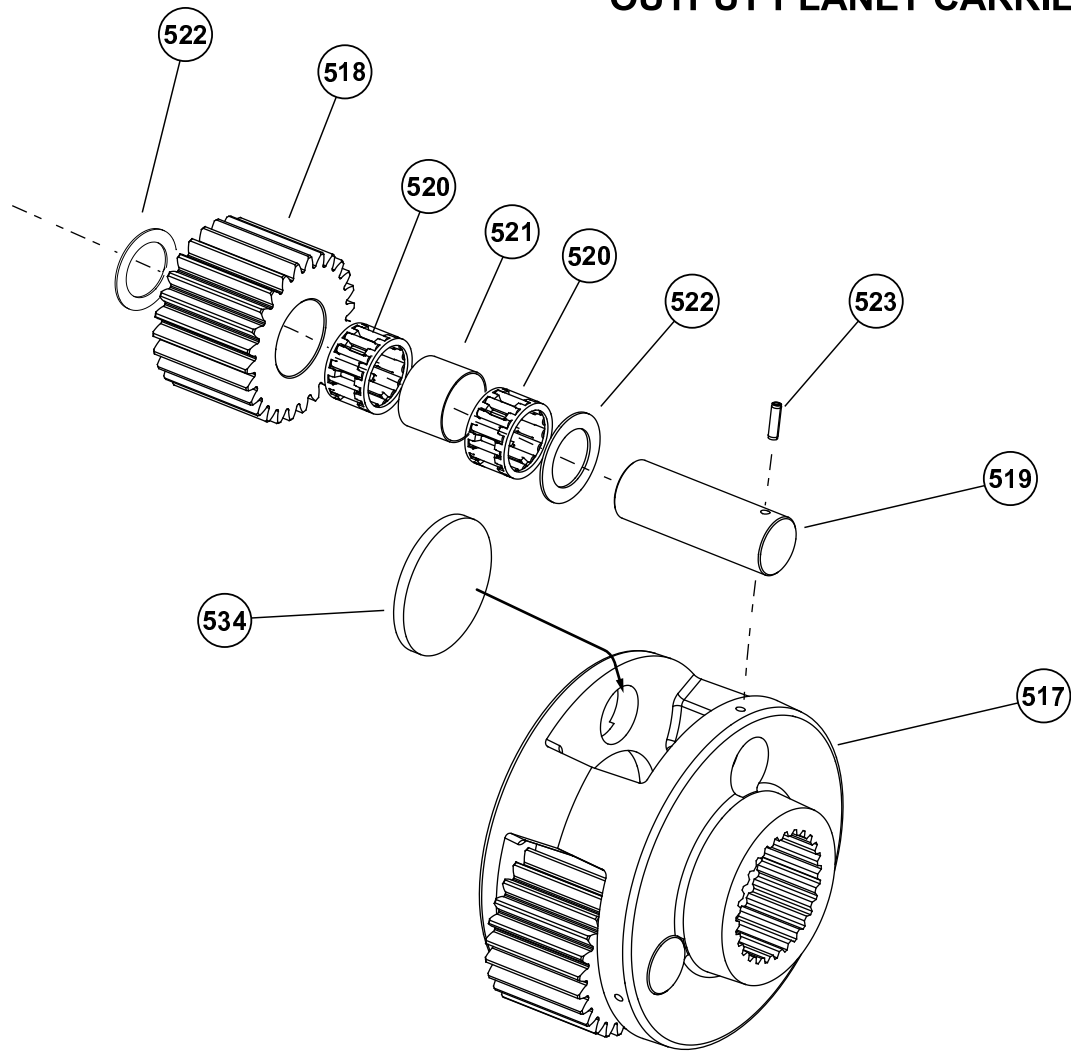


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ITEM	DESCRIPTION	PART NO.	QTY.
400	PRIMARY PLANET CARRIER ASSY (59:1 RATIO MODELS)	81800	1
400	PRIMARY PLANET CARRIER ASSY (34:1 RATIO MODELS)	81808	1
400	PRIMARY PLANET CARRIER ASSY (23:1 RATIO MODELS)	81811	1
411	PRIMARY PLANET CARRIER (59:1 RATIO MODELS)	25329	1
411	PRIMARY PLANET CARRIER (34:1 RATIO MODELS)	25513	1
411	PRIMARY PLANET CARRIER (23:1 RATIO MODELS)	25512	1
412	PLANET GEAR (59:1 RATIO MODELS)	26271	3
412	PLANET GEAR (34:1 RATIO MODELS)	26275	3
412	PLANET GEAR (23:1 RATIO MODELS)	26273	3
413	PRIMARY PLANET GEAR SHAFT	25332	3
414	ROLLER BEARING	25333	3
415	THRUST WASHER	24914	3
416	ROLLPIN	12026	3
433	THRUST WASHER (59:1 RATIO MODELS)	24913	
433	THRUST WASHER (34:1 RATIO MODELS)	25942	1
433	THRUST WASHER (23:1 RATIO MODELS)	27426	

OUTPUT PLANET CARRIER ASSY

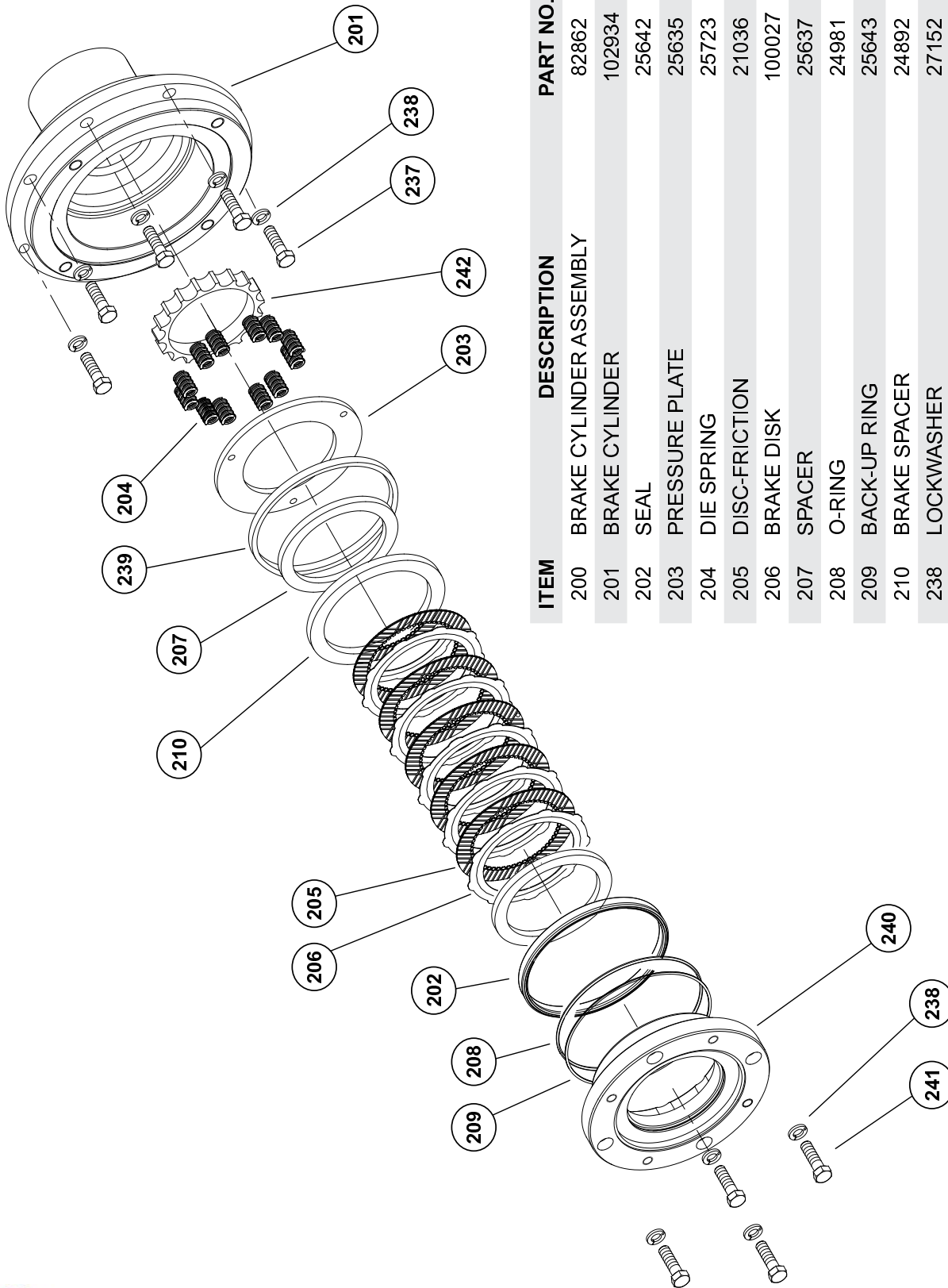


ITEM	DESCRIPTION	PART NO.	QTY.
500	OUTPUT PLANET CARRIER ASSY (59:1 RATIO MODELS)	81803	1
500	OUTPUT PLANET CARRIER ASSY (34:1 AND 23:1 RATIO MODELS)	81810	1
517	OUTPUT PLANET CARRIER (59:1 RATIO MODELS)	25202	1
517	OUTPUT PLANET CARRIER (34:1 AND 23:1 RATIO MODELS)	25514	1
518	OUTPUT PLANET GEAR (59:1 RATIO MODELS)	26272	3
518	OUTPUT PLANET GEAR (34:1 AND 23:1 RATIO MODELS)	26274	3
519	SECONDARY PLANET GEAR SHAFT	25666	3
520	ROLLER BEARING	24175	6
521	BEARING SPACER	24890	3
522	BEARING RACE	25361	6
523	ROLLPIN	21049	3
534	THRUST PLATE	25542	1



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BRAKE CYLINDER ASSEMBLY

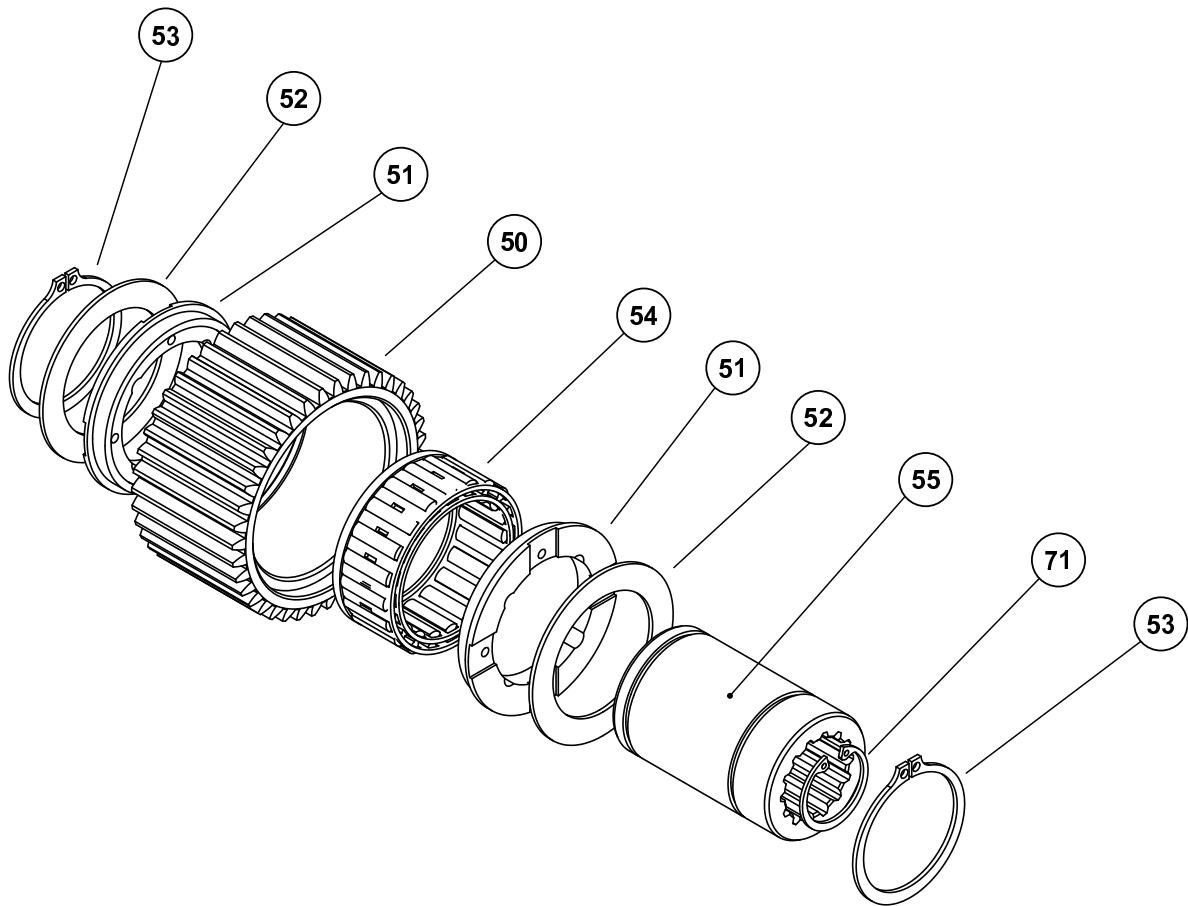


ITEM	DESCRIPTION	PART NO.	QTY.
200	BRAKE CYLINDER ASSEMBLY	82862	1
201	BRAKE CYLINDER	102934	1
202	SEAL	25642	1
203	PRESSURE PLATE	25635	1
204	DIE SPRING	25723	12
205	DISC-FRICTION	21036	5
206	BRAKE DISK	100027	6
207	SPACER	25637	1
208	O-RING	24981	1
209	BACK-UP RING	25643	1
210	BRAKE SPACER	24892	2
238	LOCKWASHER	27152	4
239	PISTON BACKUP RING	25636	1
240	MOTOR SUPPORT	102933	1
241	CAPSCREW 3/8-16 X 1-3/4 GD8 Z HX HD	104311	4
242	SPRING SPACER	100200	1



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OVERRUNNING CLUTCH ASSEMBLY



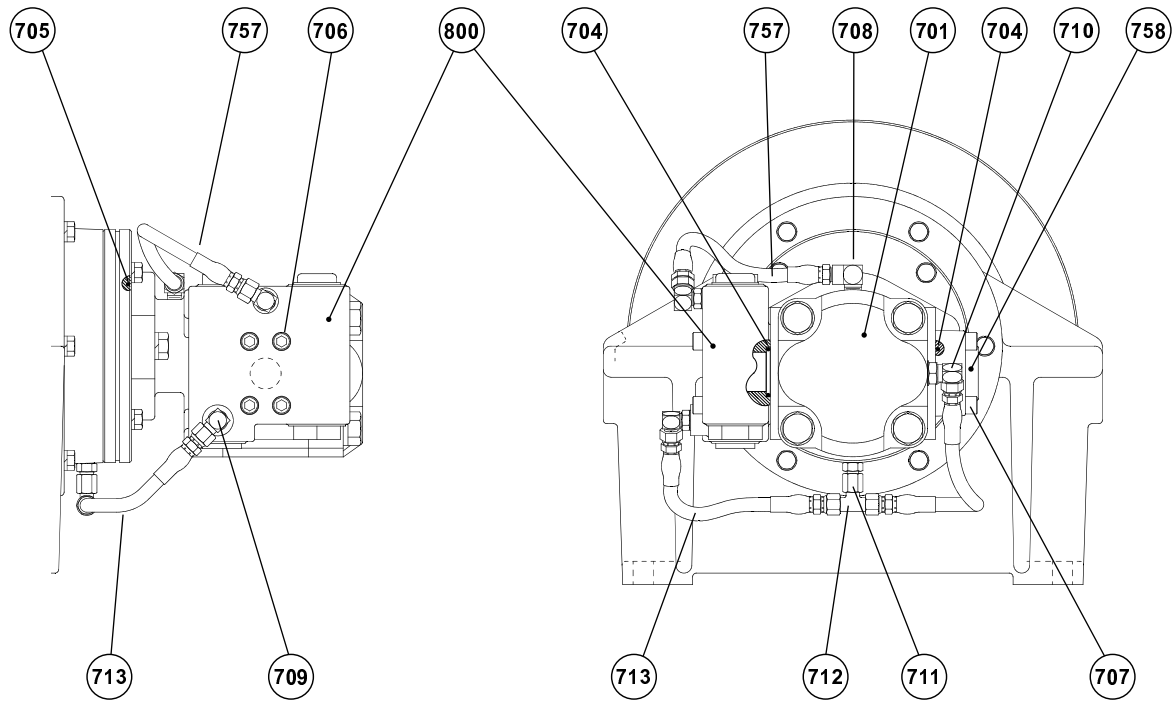
ITEM	DESCRIPTION	PART NO.	QTY.
100	SPRAG CLUTCH ASSEMBLY (13-TOOTH B-MOTOR SHAFT)	81987	1
149	OUTER BRAKE RACE*	NSS*	1
151	SPRAG BEARING	27684	2
152	THRUST BEARING	24581	2
153	SNAP RING	12034	2
154	SPRAG CLUTCH*	NSS*	1
156	INNER BRAKE RACE *	NSS*	1
171	RETAINING RING	32115	1

* NOT SERVICED SEPARATELY



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MOTOR GROUP ASSEMBLY FOR STANDARD-ROTATION (OVERWOUND) MODELS

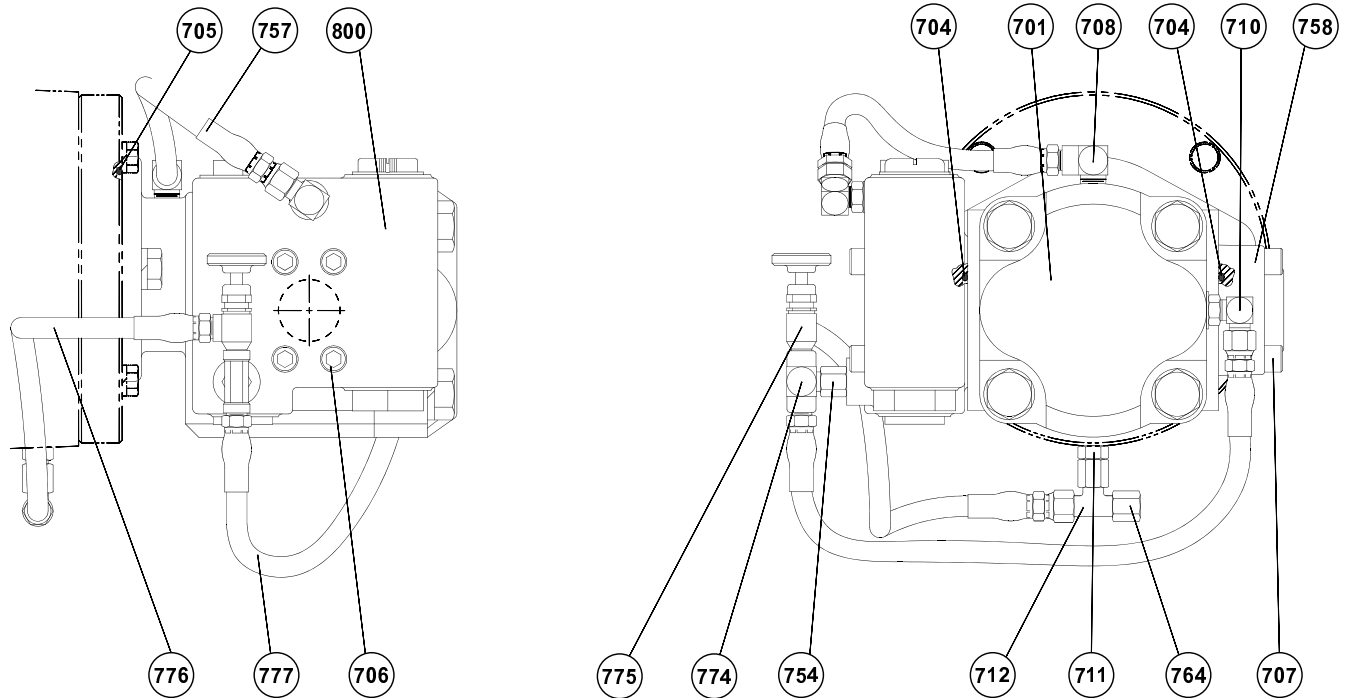


ITEM	DESCRIPTION	PART NO.	QTY.
700	HYD MOTOR SUB-ASSY (020)	63258	1
700	HYD MOTOR SUB-ASSY (029)	63259	1
700	HYD MOTOR SUB-ASSY (039)	62248	1
701	HYD MOTOR (020)	25386	1
700	HYD MOTOR (029)	25385	1
700	HYD MOTOR (039)	25515	1
N/A	MOTOR SEAL KIT (FOR ALL HYDRAULIC MOTORS LISTED ABOVE)	64069	1
704	O-RING	25366	2
705	O-RING	21063	1
706	CAPSCREW 3/8-16 X 2-3/4 GD8 Z HX HD	25622	4
707	CAPSCREW 3/8-16 X 1-1/4 ASTM A574 SKT HD	13827	4
708	REDUCER ELBOW	24236	1
709	ELBOW FITTING	25302	1
710	ELBOW/O-RING	25131	1
711	ADAPTER -4 ORB TO -4 JIC	25864	1
712	SWIVEL TEE	25748	1
713	HOSE ASSY -4 X 10-IN. (254 MM)	25936	1
714	HOSE ASSY -4 X 14-IN. (355 MM)	25935	1
757	HOSE ASSY -2 NPT MALE TO -4 JIC FEMALE X 10-IN. (254 MM)	13711	1
758	SPLIT FLANGE ADAPTER	25539	1
800	BRAKE VALVE ASSY - 1	81715	1



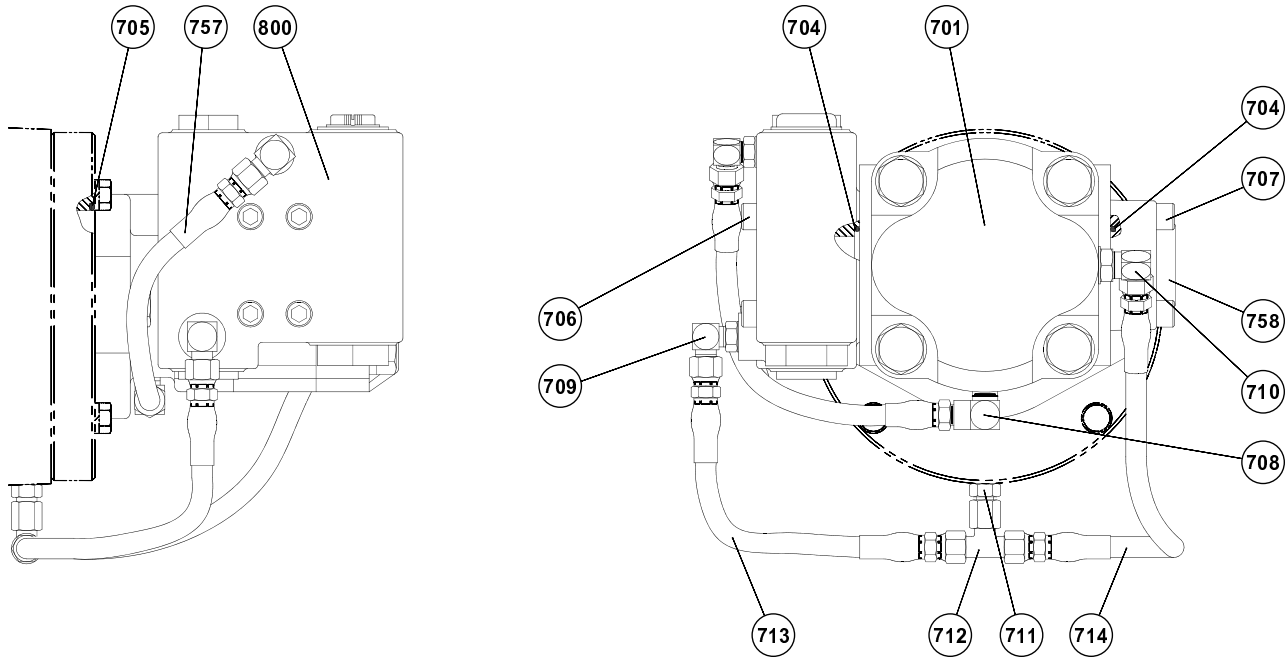
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MOTOR GROUP ASSEMBLY FOR STANDARD-ROTATION (OVERWOUND) MODELS WITH API-REQUIRED EQUIPMENT (-1)



ITEM	DESCRIPTION	PART NO.	QTY.
700	HYD MOTOR SUB ASSY (039)	61722	1
700	HYD MOTOR SUB ASSY (020)	61721	1
700	HYD MOTOR SUB ASSY (029)	62247	1
701	HYD MOTOR (039)	25515	1
701	HYD MOTOR (020)	25386	1
701	HYD MOTOR (029)	25385	1
N/A	MOTOR SEAL KIT (FOR ALL HYDRAULIC MOTORS LISTED ABOVE)	64069	1
704	O-RING	25366	2
705	O-RING	21063	1
706	CAPSCREW 3/8-16 X 2-3/4 GD8 Z HX HD	25622	4
707	CAPSCREW 3/8-16 X 1-1/4 SKT HD	13827	4
708	REDUCER ELBOW	24236	1
710	ELBOW -4 ORB	25131	1
711	ADAPTER -4 ORB TO -4 JIC	25864	1
712	SWIVEL TEE	25748	1
754	DRAIN CONNECTOR	24784	1
757	HOSE ASSY -2 NPT MALE TO -4 JIC FEMALE X 10-IN. (254 MM)	13711	1
758	SPLIT FLANGE ADAPTER	25539	1
759	ELBOW/O-RING	25131	1
764	CAP NUT -4	70182	1
774	TEE-MALE BRANCH	22934	1
775	NEEDLE VALVE	25258	1
776	HOSE ASSY -2 NPT MALE TO -4 JIC FEMALE X 12-IN. (304 MM)	13704	1
777	HOSE ASSY -2 NPT MALE TO -4 JIC FEMALE X 16-IN. (406 MM)	13706	1
778	WARNING TAG (NOT SHOWN)	25257	1
800	BRAKE VALVE ASSY - 1.0 - 61	81715	1

MOTOR GROUP ASSY FOR “-U” (UNDERWOUND) MODELS

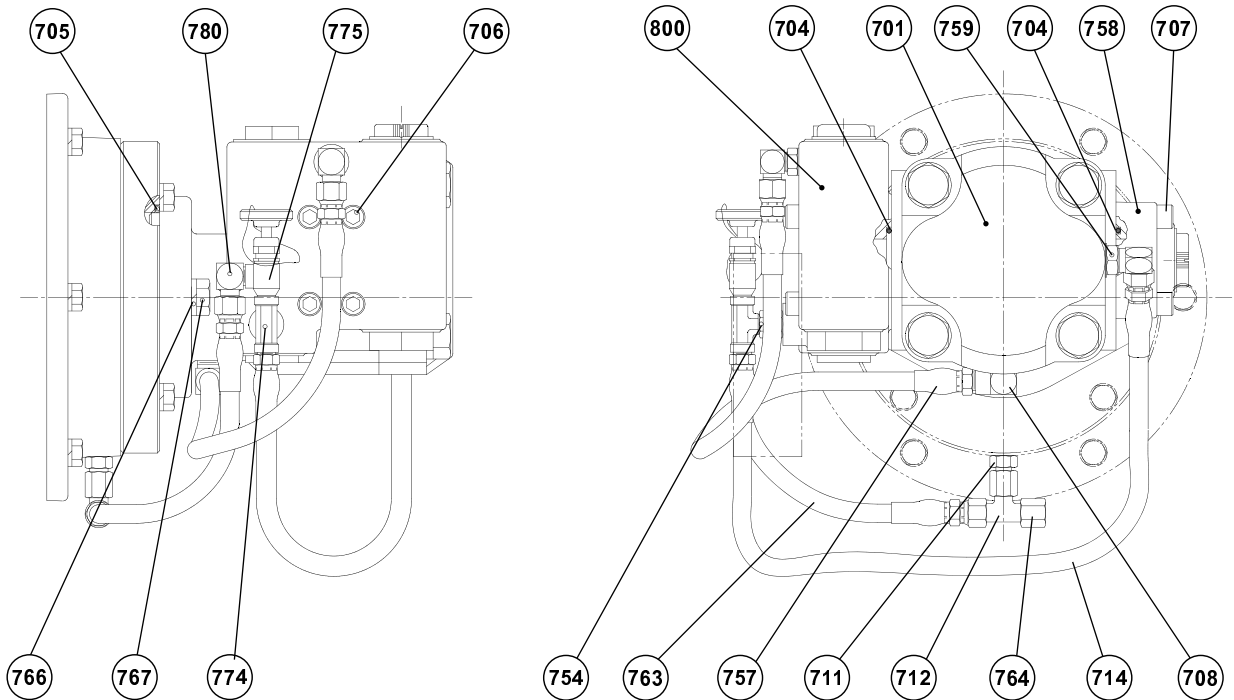


ITEM	DESCRIPTION	PART NO.	QTY.
700	HYD MOTOR SUB-ASSY, UNDERWOUND (020)	62321	1
700	HYD MOTOR SUB-ASSY, UNDERWOUND (029)	62371	1
700	HYD MOTOR SUB-ASSY, UNDERWOUND (039)	62343	1
701	HYD MOTOR (020)	25386	1
701	HYD MOTOR (029)	25385	1
701	HYD MOTOR (039)	25515	1
N/A	MOTOR SEAL KIT (FOR ALL HYDRAULIC MOTORS LISTED ABOVE)	64069	1
704	O-RING	25366	2
705	O-RING	21063	1
706	CAPSCREW 3/8-16 X 2-3/4 GD8 Z HX HD	25622	4
707	CAPSCREW 3/8-16 X 1-1/4 SKT HD	13827	4
708	REDUCER ELBOW	24236	1
709	ELBOW FITTING	25302	1
710	ELBOW/O-RING	25131	1
711	ADAPTER -4 ORB TO -4 JIC	25864	1
712	SWIVEL TEE	25748	1
713	HOSE ASSY -4 X 10-IN. (254 MM)	25936	1
714	HOSE ASSY -4 X 14-IN. (355 MM)	25935	1
757	HOSE ASSY -2 NPT MALE TO -4 JIC FEMALE X 10-IN. (254 MM)	13711	1
758	SPLIT FLANGE ADAPTER	25539	1
800	BRAKE VALVE ASSY - 1.0 - 61	81715	1



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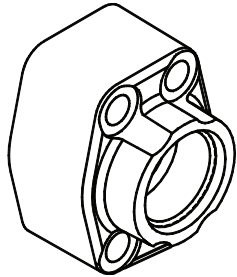
MOTOR GROUP ASSEMBLY FOR “-U” (UNDERWOUND) MODELS WITH API-REQUIRED EQUIPMENT (-1)



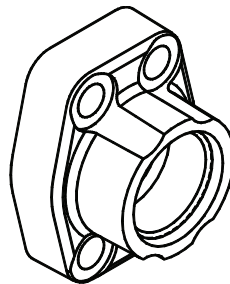
ITEM	DESCRIPTION	PART NO.	QTY.
700	HYD MOTOR SUBASSY (029) -U w/API	63363	1
700	HYD MOTOR SUBASSY (039) -U w/API	63288	1
701	HYD MOTOR (029) -U API	25385	1
701	HYD MOTOR (039) -U API	25515	1
N/A	MOTOR SEAL KIT (FOR ALL HYDRAULIC MOTORS LISTED ABOVE)	64069	1
704	056 O-RING	25366	2
705	024 O-RING	21063	1
706	CAPSCREW 3/8-16 X 2-3/4 GD8 Z HX HD	25622	4
707	CAPSCREW 3/8-16 X 1-1/4 ASTM A574 SKT HD	13827	4
708	062 REDUCER ELBOW	24236	1
710	060 ELBOW/O-RING	25131	1
711	ADAPTER -4 ORB TO -4 JIC	25864	1
712	070 SWIVEL TEE	25748	1
714	HOSE ASSY -4 X 14-IN. (355 MM)	25935	1
754	071 DRAIN CONNECTOR	24784	1
757	HOSE ASSY -2 NPT MALE TO -4 JIC FEMALE X 10-IN. (254 MM)	13711	1
758	061 SPLIT FLANGE ADAPTER	25539	1
763	HOSE ASSY -4 X 17-IN. (431.8 MM)	25750	1
764	072 16445-4 CAP NUT	70182	1
766	LOCKWASHER 1/2 Z	11026	2
767	CAPSCREW 1/2-13 X 1-1/2 GD8 Z HX HD	104322	2
774	057 TEE-MALE BRANCH	22934	1
775	073 NEEDLE VALVE	25258	1
778	076 WARNING TAG	25257	1
780	080 2685008 ELBOW TBG FT	21163	1
800	054 BRAKE VALVE ASSY - 1	81715	1

MOTOR GROUP ASSEMBLY ADAPTERS AND CONTROL CIRCUIT FOR GEAR MOTORS 020, 029, AND 039

SPLIT FLANGE ADAPTER (25539)

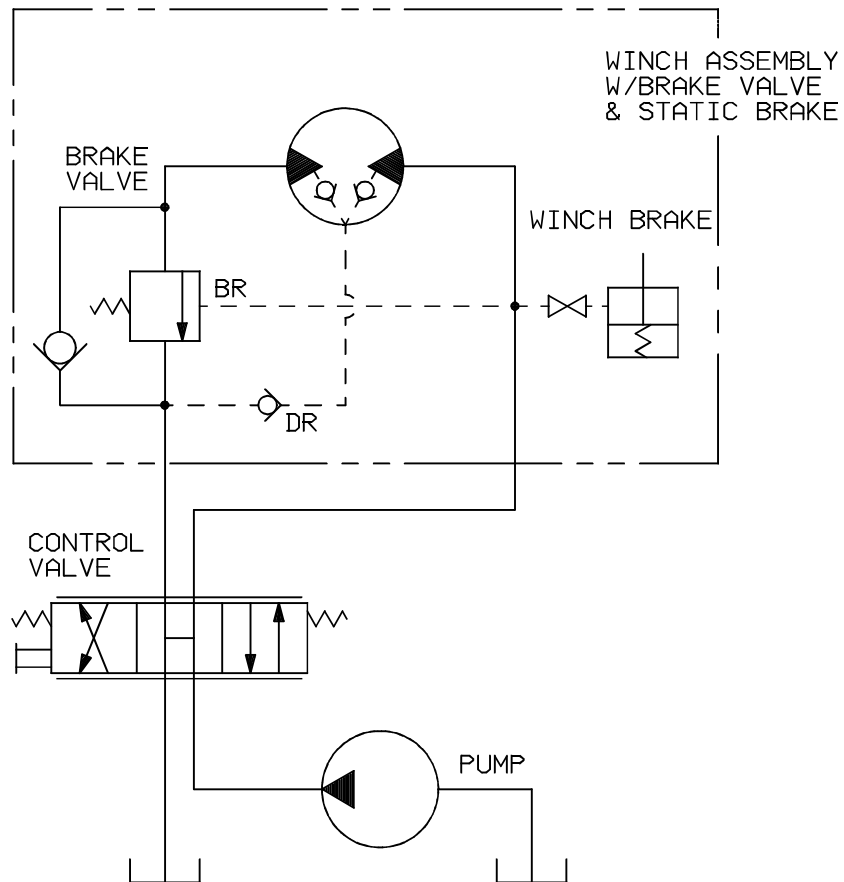


EARLY - Use socket head capscrews 13544.



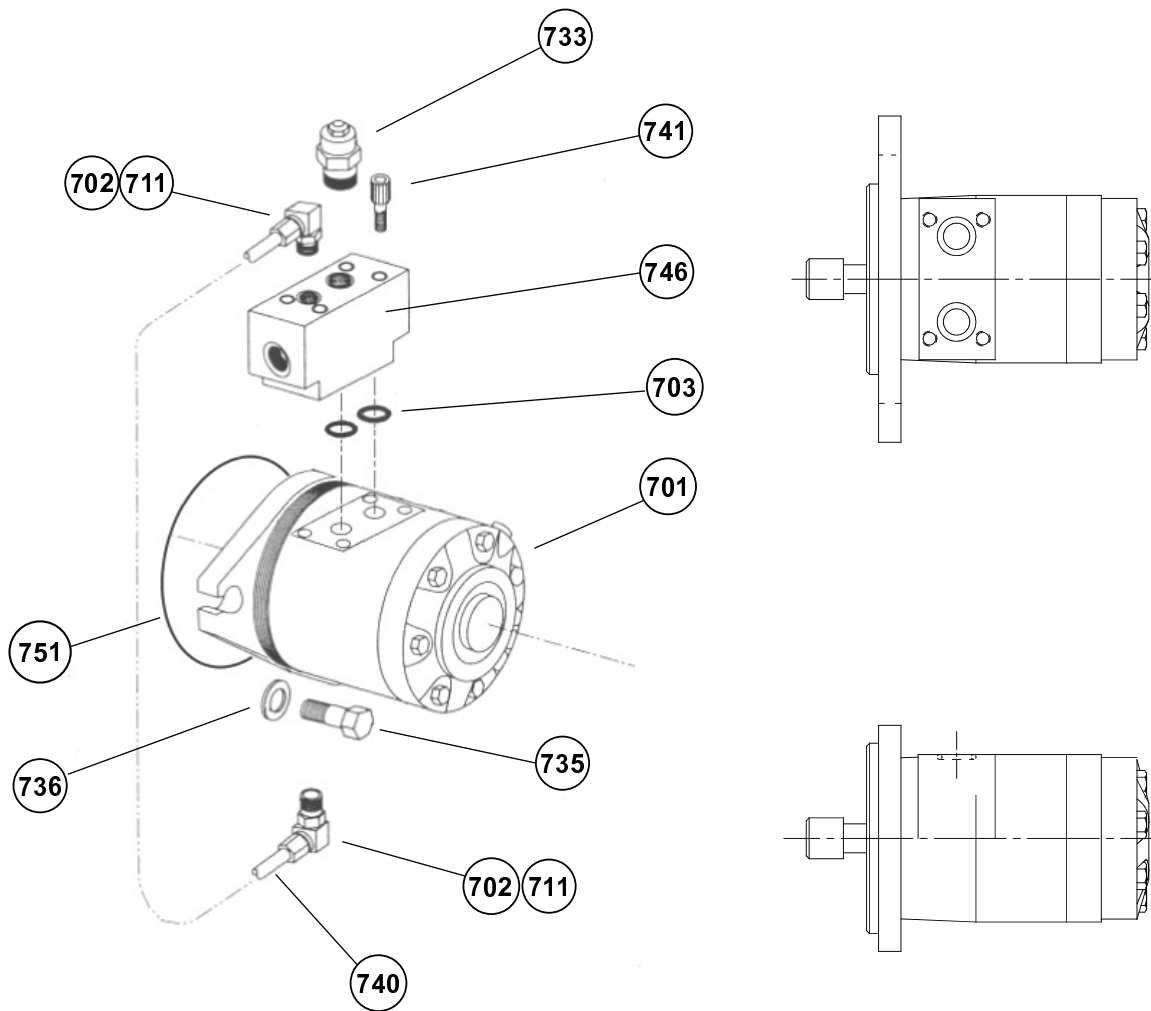
CURRENT - Use socket head capscrews 13827.

HOIST CONTROL CIRCUIT (TYPICAL)



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MOTOR GROUP ASSY, 062 HYDRAULIC MOTOR

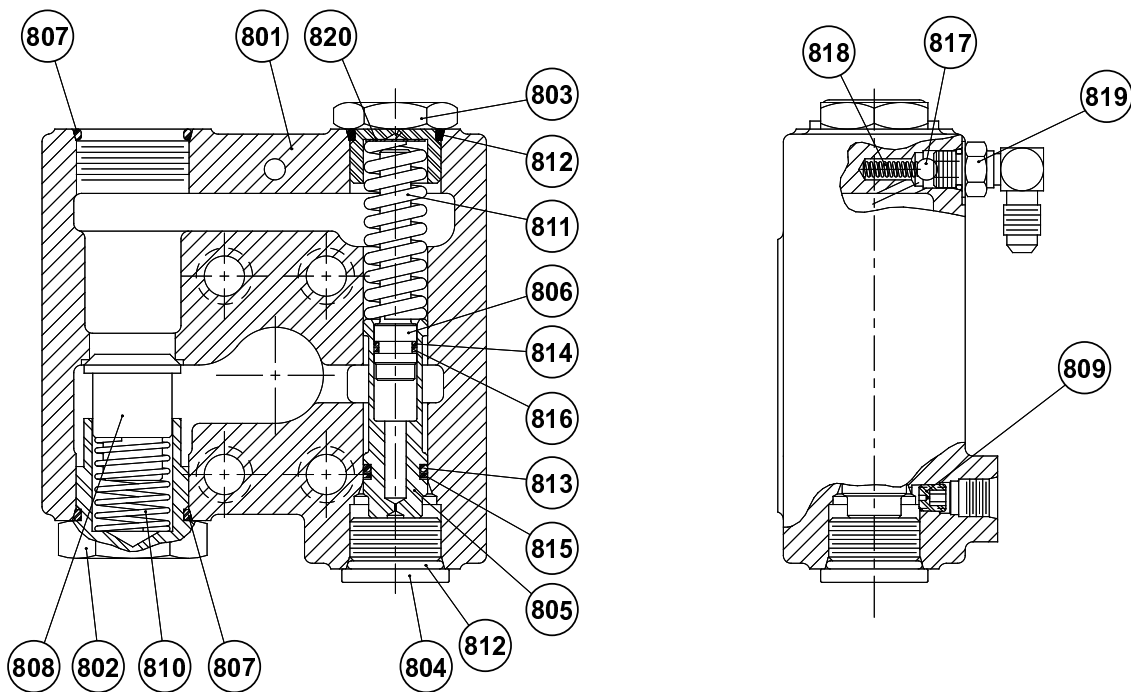


ITEM	DESCRIPTION	PART NO.	QTY.
700	MOTOR SUB-ASSY (062)	62503	1
701	MOTOR, HYDRAULIC (062)	106079	1
702	SWIVEL NUT 90 DEG. ELBOW	26140	2
703	O-RING	12273	2
711	ADAPTER -4 JIC TO -4 ORB	25864	2
733	COUNTERBALANCE VALVE* CARTRIDGE	27258	1
N/A	COUNTERBALANCE VALVE SEAL KIT	29872	1
735	CAPSCREW 1/2-13 X 1-1/4 GD8-Z HX HD	104174	2
736	LOCKWASHER 1/2 Z	11026	2
740	HOSE ASSY -4 X 20-IN. (508 MM)	25952	1
741	CAPSCREW 5/16-18 X 3 ASTM A574 SKT HD	29631	4
751	O-RING	21063	1
746	BRAKE VALVE BLOCK	27403	1



Authorized Distributor:
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BRAKE VALVE ASSY FOR GEAR MOTORS 020, 029, AND 039



ITEM	DESCRIPTION	PART NO.	QTY.
800	BRAKE VALVE ASSEMBLY	81715	1
801	BRAKE VALVE HOUSING	NSS*	1
802	VALVE SPRING RETAINER	24424	1
803	SPRING RETAINER	24183	1
804	PLUG	22450	1
805	SPOOL	NSS*	1
806	DAMPER PISTON	NSS*	1
807	O-RING	24186	2
808	CHECK VALVE POPPET	24423	1
809	PILOT ORIFICE	24200	1
810	CHECK VALVE SPRING	24190	1
811	SPOOL SPRING	24192	1
812	O-RING	23601	1
813	O-RING	24193	1
814	O-RING	24194	1
815	BACK-UP RING	24195	1
816	BACK-UP RING	24196	1
817	BALL, STEEL	21158	1
818	COMPRESSION SPRING	25480	1
819	ELBOW FITTING	25302	1
820	SHIPPING PLUG HYD	25403	1
821	SHIPPING PLUG	25487	1
822	SHIM, VALVE SPRING (NOT SHOWN)	25661	1-2

METRIC CONVERSION TABLE

English to Metric			Metric to English		
LINEAR					
inches (in.)	X 25.4	= millimeters (mm)	millimeters (mm)	X 0.03937	= 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	= millileters (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					
°Celsius = 0.556 (°F - 32)			°Fahrenheit = (1.8 °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



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