

Search history

- Search 1: SFT=(pump* and coupl* and shaft and hub) and PD=19200101:20140110 (Results 30866)
Search 2: STA=(pump* and coupl* and shaft and hub) and PD=19200101:20140110 (Results 614)
Search 3: STA=(pump* and coupl* and shaft and hub and thrust) and PD=19200101:20140110 (Results 41)
Search 4: STA=(pump and couplings and shaft) and PD=19200101:20140110 and EC=(F04B or F16D or F04D) (Results 209)
Search 5: STA=(pump and couplings and shaft) and PD=19200101:20140110 and EC=(F04B or F16D or F04D) (Results 209)

Title: **SHAFT** LOCKING **COUPLINGS** FOR SUBMERSIBLE **PUMP** ASSEMBLIES

Abstract: An electrical submersible **pump** assembly has first and second modular component sections, each of the sections having an outer housing and an inner **shaft** member. A coupling sleeve having a bore is disposed between the modular component sections and receives the **shaft** member of each of the component sections. The bore of the coupling sleeve and the **shaft** members having mating radial load transmitting shoulders for transmitting torque. An axial load transmitting shoulder is affixed to the **shaft** member of the first modular component section and located in the bore of the coupling sleeve. A locking element is carried by the **shaft** member of the second modular section and engages the axial load transmitting shoulder to secure the **shaft** members to one another for transferring axial tension from one of the **shaft** members to the other.

Classifications:

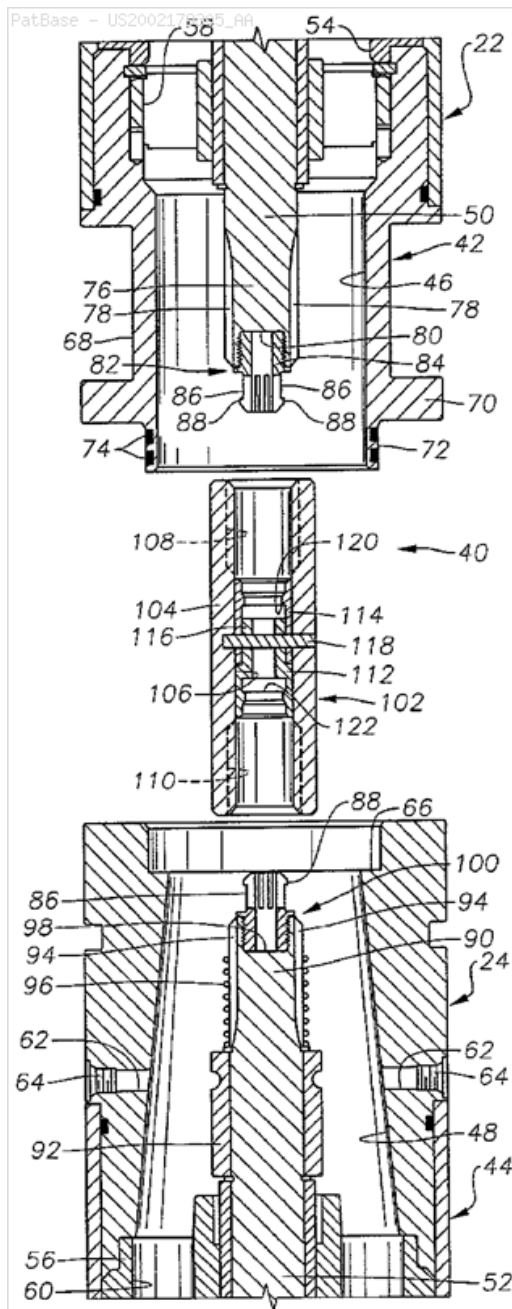
International (IPC 8-9): F04B53/22 F04D13/10 F04D29/04 F16D1/108 (Advanced/Invention)

International (IPC 1-7): E21B23/00 E21B43/00 F04B53/22 F04D13/10 F04D29/04 F16D1/108

CPC: Y10T403/7033 Y10T403/5733 F04D13/021 F04D13/10 F04D29/044 F04D29/043 F16D1/108

European: F04D13/02B F04D13/10 F04D29/04B F16D1/108

US: 166/105 166/105S 166/107 166/107S 166/377 403/305 403/305S 403/359.5 464/182



Family:

Publication number	Publication date	Application number	Application date
CA2418480 AA	20030203	CA20022418480	20020604
CA2418480 C	20070501	CA20022418480	20020604
CA2605887 AA	20071025	CA20062605887	20060425
CA2605887 C	20130423	CA20062605887	20060425
US2002179305 AA	20021205	US20020160899	20020603
US2005199384 AA	20050915	US20050114877	20050425
US6883604 BB	20050426	US20020160899	20020603
US7325601 BB	20080205	US20050114877	20050425
WO02099284 A1	20021212	WO2002US17641	20020604
WO06116467 A1	20061102	WO2006US15760	20060425

Priority:

US20010296014P 20010605
US20050114877 20050425

US20020160899 20020603
WO2006US15760 20060425

WO2002US17641 20020604

Probable Assignee: BAKER HUGHES INC

Assignee(s): (std): BAKER HUGHES INC ; MACK JOHN J

Assignee(s): BROOKBANK EARL B

Inventor(s): (std): BROOKBANK EARL B ; MACK JOHN J

Inventor(s): MACK JOHN ; BROOKBANK EARL

Agent(s): SIM AND MCBURNEY; JAMES E BRADLEY BRACEWELL AND GIULIANI LLP; BRACEWELL AND PATTERSON LLP; BRACEWELL AND GIULIANI LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ
DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE
KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL
NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG
US UZ VC VN YU ZA ZM ZW

Title: **PUMPING** SYSTEM WITH PROGRESSIVE CAVITY **PUMP**

Abstract: **Pumping** system comprising: a progressive cavity **pump** comprising a helical rotor inside a helical cavity of an outer stator; motor means for driving the rotor, with a motor **shaft** coaxial to the axis of the stator cavity; and an intermediate **shaft** coupled, at its ends, by respective **couplings**, to the rotor **shaft** and to the motor **shaft**. Two devices (A, B) consisting of two of these connected parts are constructed as a male device (A) terminated by an axial stub (17) and a female device (B) terminated by an axial housing (18) receiving the stub, at least two radial screws (22, 23), not aligned, one of which is a cone-point set screw (22), connected the stub (17) to the female device (B).

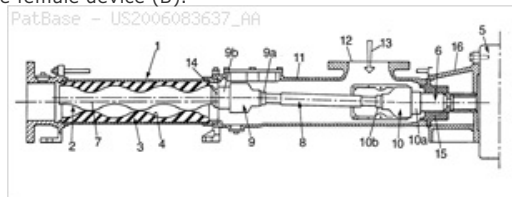
Classifications:

International (IPC 8-9): F01C1/10 F01C17/06 F03C2/00 F04B17/00 F04B35/04 F04C15/00 F04C18/00 F04C2/10 F04C2/107 F04C2/113 F04C5/00 F16D1/02 F16D1/06 F16D1/08 (Advanced/Invention); F01C1/00 F01C17/00 F03C2/00 F04B17/00 F04B35/00 F04C15/00 F04C18/00 F04C2/00 F04C5/00 F16D1/02 F16D1/06 (Core/Invention)

CPC: Y10T403/7041 F01C17/06 F16D1/0847

European: F01C17/06 F16D1/08H

US: 403/362 411/393 417/360 417/410.3 417/410.4 418/182 418/48



Family:

Publication number	Publication date	Application number	Application date
CN100458202 C	20090204	CN200510109463	20051020
CN1763391 A	20060426	CN200510109463	20051020
DE602005005263 D1	20080424	DE200560005263T	20051012
DE602005005263 T2	20090312	DE200560005263T	20051012
EP1650403 A1	20060426	EP20050292135	20051012
EP1650403 B1	20080312	EP20050292135	20051012
FR2876755 A1	20060421	FR20040011160	20041020
FR2876755 B1	20070126	FR20040011160	20041020
JP2006118504 A2	20060511	JP20050304898	20051019
JP4890831 B2	20120307	JP20050304898	20051019
US2006083637 AA	20060420	US20050253168	20051017
US7473082 BB	20090106	US20050253168	20051017

Priority:

FR20040011160 20041020

Probable Assignee: PCM TECHNOLOGIES

Assignee(s): (std): PCM POMPES ; PCM POMPES SA ; MARIELLE JEAN PIERRE

Assignee(s): PCM ; PCM POMPES SOC ANONYME ; PCM POMPES SOCIETE ANONYME ; PCM TECHNOLOGIES

Inventor(s): (std): JEAN PIERRE MARIELLE ; MARIELLE JEAN PIERRE

Agent(s): GORREE JEAN MICHEL; CABINET PLASSERAUD; MICHAEL L KENAGA DLA PIPER RUDNICK GRAY CARY US LLP; PATZIK FRANK AND SAMOTNY LTD

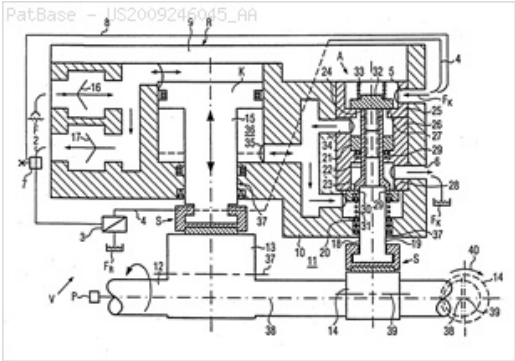
Designated states: DE FR GB IT

Title: DEVICE FOR CONCENTRATING A LIQUID, AND DIFFERENTIAL PISTON **PUMP**

Abstract: Disclosed is a device (V) for concentrating a liquid (F) which is **pumped** through a concentrating apparatus (3) by means of a differential piston **pump** and directly impinges the differential piston (K) in an assisting manner during the conveying stroke at a residual pressure as a concentrate (FK). The differential piston of said device (V) is driven by a drive **shaft** (12) that actuates a linearly guided valve control member (18) of an intake and discharge valve assembly (A). The differential piston **pump** is embodied as a radial piston **pump** (R) in which eccentric attachments (13, 14) for the differential piston (K) and the valve control member (18) are disposed on the drive **shaft** (12), the differential piston (K) and the valve control member (18) being hinged directly to the eccentric attachments (13, 14) by means of traction and pressure **couplings** (S).

Classifications:

International (ipc 8-9): B01D61/10 C02F1/44 F04B5/00 F04B5/02 F04B7/00 F04B9/10 (Advanced/Invention);
B01D61/02 C02F1/44 F04B5/00 F04B7/00 F04B9/00 (Core/Invention);
F04B (Subclass/Invention)
International (ipc 1-7): F04B5/00
CPC: F04B5/00 F04B7/00 F04B9/042 F04B9/107
European: F04B5/00 F04B7/00 F04B9/04C F04B9/107
US: 417/375 417/510



Family:

Publication number	Publication date	Application number	Application date
AT386884 E	20080315	AT20050017334T	20050809
AU2006278957 AA	20070215	AU20060278957	20060609
CN101238288 A	20080806	CN200680028792	20060609
DE502005002928 D1	20080403	DE200550002928T	20050809
EA200800551 A1	20080630	EA20080000551	20060609
EP1752662 A1	20070214	EP20050017334	20050809
EP1752662 B1	20080220	EP20050017334	20050809
ES2302105 T3	20080701	ES20050017334T	20050809
IN01000KN2008 A	20081219	IN2008KN01000	20080306
JP2009504992 T2	20090205	JP20080528359T	20060609
PT1752662 T	20080528	PT20050017334T	20050809
US2009246045 AA	20091001	US20060989803	20060609
WO07016988 A1	20070215	WO2006EP05573	20060609
ZA200802182 A	20090930	ZA20080002182	20060609

Priority:

EP20050017334 20050809 WO2006EP05573 20060609

Probable Assignee: SENECA SA

Assignee(s): (std): KATHMANN PETER BERNHARD ; SENECA S A

Assignee(s): SENECA SA

Inventor(s): (std): PETER BERNHARD KATHMANN ; KATHMANN PETER BERNHARD

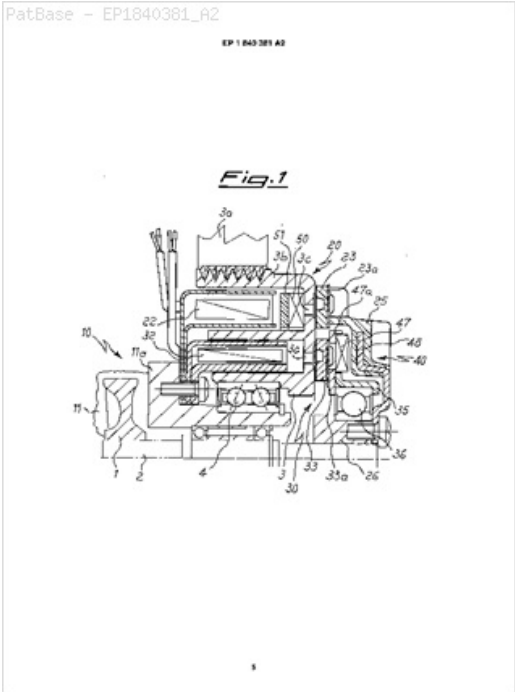
Agent(s): GRIFFITH HACK; BERNHARDT REINOLD ET AL; FRIEDRICH KUEFFNER

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: **PUMP** FOR RECIRCULATING FLUIDS WITH MULTIPLE-SPEED DEVICE FOR TRANSMITTING THE ROTATIONAL MOVEMENT TO THE IMPELLER

Abstract: **Pump** for recirculating a cooling fluid, comprising a device for transmitting the movement from movement generating means (3a,3) to the impeller (1) rigidly connected to a driven **shaft** (2), where said transmission device comprises at least one first friction coupling (20) and at least one second friction coupling (30) which are substantially concentric with each other and at least one induction coupling (40) situated between said movement generating means (3) and the driven **shaft** (2); said first friction coupling (20) and second friction coupling (30) are of the electromagnetic type and one of said friction **couplings** (20,30) comprises a permanent magnet (50) which is integral with said movement generating means (3).

Classifications:
International (IPC 8-9): F04D13/02 (Advanced/Invention);
F04D13/02 (Core/Invention)
CPC: F04D13/027
European: F04D13/02B3



Family:

Publication number	Publication date	Application number	Application date
EP1840381 A2	20071003	EP20070075223	20070323
ITMI20060117 U1	20070929	IT2006MI00117U	20060328

Priority:
IT2006MI00117U 20060328

Probable Assignee: BARUFFALDI SPA

Assignee(s): (std): BARUFFALDI SPA

Assignee(s): BARUFFALDI S P A

Inventor(s): (std): BELLOTTI CLAUDIO ; BOFFELLI PERCARLO ; BOFFELLI PIERCARLO ; DEPOLI ERMINIO ; NATALE FABIO

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL PL PT RO SE SI SK TR YU

Title: A final drive assembly for a vehicle

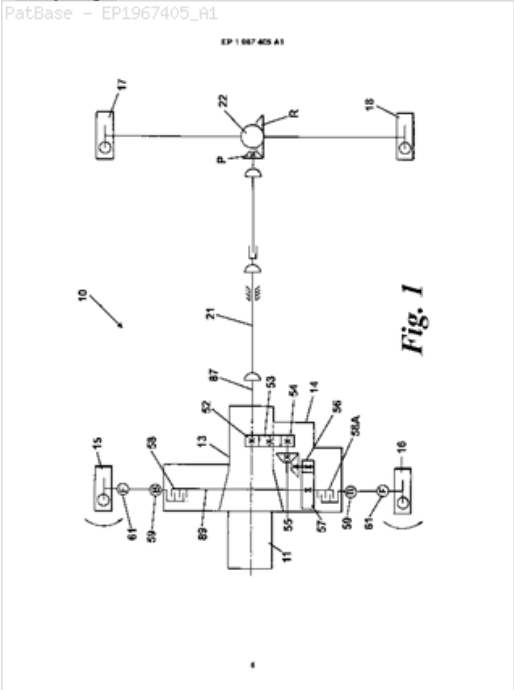
Abstract: A vehicle final drive assembly (14) operable between a pair of wheels (15, 16) across an axle and comprising a pair of **couplings** (58) connected in parallel to a rotary input (57), each coupling (58) having an output **shaft** (91) connected to the rotary input (57) through a hydraulically operable clutch (88) operated by a hydraulic actuator (62) which receives hydraulic fluid from a respective **pump** (63), the hydraulic fluid outputs from the two **pumps** (63) are interconnected by conduit (64) in order to equalize the hydraulic pressures within the two **couplings**.

Classifications:

International (IPC 8-9): B60K17/35 B60K17/354 (Advanced/Invention); B60K17/34 B60K17/35 (Core/Invention)

CPC: B60K5/02 B60K17/3505 F16D43/284 F16D43/30

European: B60K17/35B F16D43/284 F16D43/30 L60K5/02



Family:

Publication number	Publication date	Application number	Application date
CN101357588 A	20090204	CN200810007746	20080307
CN101357588 B	20140730	CN200810007746	20080307
DE602007011388 D1	20110203	DE200760011388T	20070308
EP1967405 A1	20080910	EP20070103808	20070308
EP1967405 B1	20101222	EP20070103808	20070308

Priority:

EP20070103808 20070308

Probable Assignee: FORD GLOBAL TECH LLC

Assignee(s): (std): COUNTYTRAC LTD ; FORD GLOBAL TECH LLC

Assignee(s): FORD GLOBAL TECHNOLOGIES LLC ; COUNTYTRAC LIMITED

Inventor(s): (std): ERIC MAY ; MAY ERIC

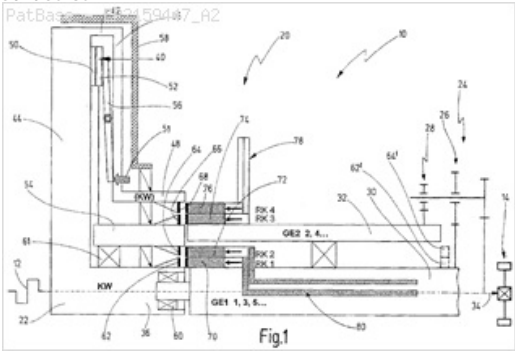
Agent(s): GRUNFELD DAVID PETER

Designated states: AL BA DE GB HR MK RS TR

Title: POWERSHIFT TRANSMISSION

Abstract: Source: EP2159447A3 [DE] Die Erfindung betrifft einen lastschaltbaren Antriebsstrang (20), mit einer Eingangswelle (22), die mit einer Antriebseinheit (12) verbindbar ist, mit einem Stufengetriebe (24), das ein erstes Teilgetriebe (26) mit einer ersten Getriebeeingangswelle (30) und ein zweites Teilgetriebe (28) mit einer zweiten Getriebeeingangswelle (32) sowie eine mit den Ausgängen der Teilgetriebe (26, 28) verbundene Getriebeausgangswelle (34) und eine Mehrzahl von Radsätzen zur Einrichtung unterschiedlicher Gangstufen aufweist, und mit einer Lastkupplungseinrichtung (40), deren Eingangsglied (50) mit der Eingangswelle (22) verbunden ist, wobei die Eingangswelle (22) ueber eine erste Kupplung (62) mit der ersten Getriebeeingangswelle (30) verbindbar ist, wobei ein Ausgangsglied (52) der Lastkupplungseinrichtung (40) mittels einer zweiten Kupplung (64) mit der ersten Getriebeeingangswelle (30) und mittels einer dritten Kupplung (66) mit der zweiten Getriebeeingangswelle (32) verbindbar ist, und wobei die Eingangswelle (22) mittels einer vierten Kupplung (68) mit der ersten Getriebeeingangswelle (30) verbindbar ist, **dadurch gekennzeichnet, dass** wenigstens eine der Kupplungen (62-68) als Reibkupplung ausgebildet ist.

Classifications:
International (IPC 8-9): B60K17/08 B60W10/10 B60W30/18 F16D31/08 F16H3/00 F16H3/093 F16H61/04 (Advanced/Invention); B60K17/06 B60W10/10 B60W30/18 F16D31/00 F16H3/00 F16H3/08 F16H61/04 (Core/Invention)
CPC: F16D21/06 F16H3/006 F16H2003/007 F16H2063/3093
European: F16D25/10 R16H3/00F R16H3/00F1 R16H63/30Y



Family:

Publication number	Publication date	Application number	Application date
AT544972 E	20120215	AT20090163859T	20090626
DE102008046321 B3	20100211	DE200810046321	20080902
DE502009002695 D1	20120405	DE200950002695T	20090626
EP2159447 A2	20100303	EP20090163859	20090626
EP2159447 A3	20100421	EP20090163859	20090626
EP2159447 B1	20120208	EP20090163859	20090626

Priority:

DE200810046321 20080902 EP20090163859 20090626

Probable Assignee: GETRAG GETRIEBE ZAHNRAD

Assignee(s): (std): GETRAG GETRIEBE ZAHNRAD

Assignee(s): GETRAG GETRIEBE U ZAHNRADFABRIK HERMANN ; GETRAG GETRIEBE U ZAHNRADFABRIK HERMANN HAGENMEYER GMBH AND CIE KG ; GETRAG GETRIEBE UND ZAHNRADFABRIK HERMANN HAGENMEYER GMBH AND CIE KG

Inventor(s): (std): BUENDER CARSTEN

Inventor(s): BUENDER CARSTEN 74189

Agent(s): WITTE WELLER AND PARTNER PATENTANWAELTE MBB; WITTE WELLER AND PARTNER

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

Title: HYDRAULIC ACTUATOR

Abstract: A **pump** coupling or hydraulic actuator controlling one or more limited slip **couplings** of a distribution system for distribution torque between front and rear axles in all wheel drive vehicles and/or distribution of torque between left and right wheels in two or four wheel drive vehicles. The hydraulic actuator includes an electric motor, a hydraulic **pump**, driven by a drive **shaft** of the electric motor, and the one or more limited slip **couplings**. Each limited slip coupling includes a disc package and a piston acting on the disc package, which piston is actuated by a hydraulic **pump**. A centrifugal regulator is connected to a rotating part of the electric motor or the hydraulic **pump**, which centrifugal regulator controls a pressure overflow valve, connected to the oil outlet of the hydraulic **pump**. The pressure is controlled by current to the electric motor or by control of the motor speed.

Classifications:**International (IPC 8-9):** B60K17/34 B60K17/348 B60K23/08

F16D43/284 F16D48/02 F16D48/06 F16D7/02

G05G15/06 (Advanced/Invention);

B60K17/34 B60K23/08 F16D48/06 (Advanced/Non-invention);

B60K17/34 B60K23/08 F16D48/00 G05G15/00 (Core/Invention)

CPC: F16D48/064 G05G15/06 F16D2048/0209 F16D2048/0272

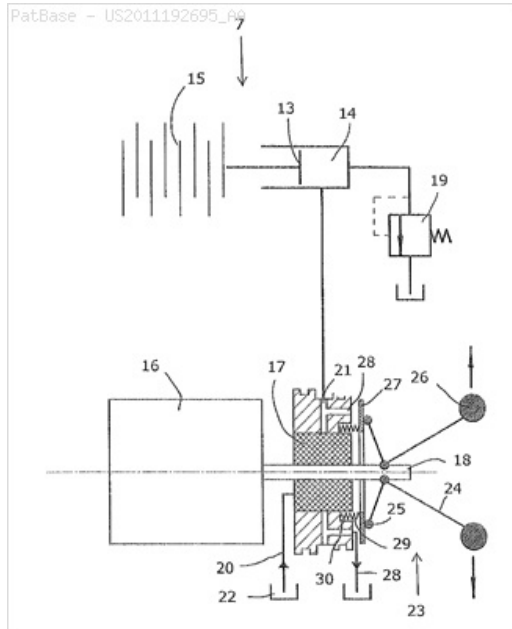
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B60K23/0808 F16D48/02

European: B60K17/34 B60K23/08 F16D43/284 F16D48/02

F16D48/06E G05G15/06 L60K17/35B L60K23/08B

US: 192/103.0FA 192/103FA 192/56.6 192/56.600P 192/85.63**Family:**

Publication number	Publication date	Application number	Application date
BRPI0918575 A2	20151201	BR2009PI18575	20090709
CN102105716 A	20110622	CN200980129335	20090709
CN102105716 B	20130605	CN200980129335	20090709
DE602009012335 D1	20130314	DE200960012335T	20090709
EP2310709 A1	20110420	EP20090806916	20090709
EP2310709 A4	20120425	EP20090806916	20090709
EP2310709 B1	20121226	EP20090806916	20090709
IN00369MN2011 A	20111216	IN2011MN00369	20110224
JP2011530452 T2	20111222	JP20110522932T	20090709
JP5408745 B2	20140205	JP20110522932T	20090709
KR101546859 B1	20150824	KR20117002293	20090709
KR20110059836 A	20110607	KR20117002293	20090709
RU2011108119 A	20120920	RU20110108119	20090709
RU2471097 C2	20121227	RU20110108119	20090709
SE200801794 A	20100215	SE20080001794	20080814
SE200801794 L	20100215	SE20080001794	20080814
SE532772 C2	20100406	SE20080001794	20080814
US2011192695 AA	20110811	US20110021316	20110204
US8123016 BB	20120228	US20110021316	20110204
WO10019094 A1	20100218	WO2009SE50883	20090709

Priority:

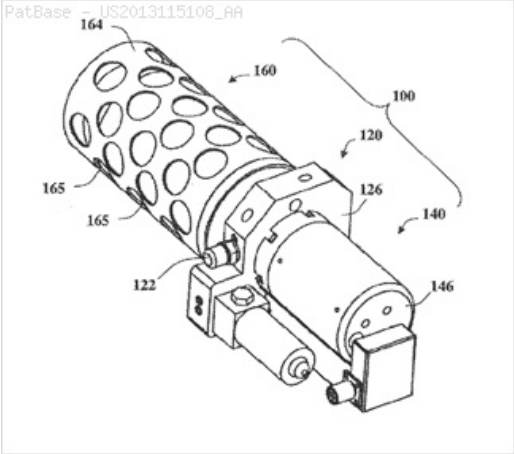
SE20080001794 20080814 EP20090806916 20090709 WO2009SE50883 20090709

Probable Assignee: BORGWARNER TORQTRANSFER SYSTEMS AB**Assignee(s):** (std): BORGWARNER TORQTRANSFER SYSTEMS AB ; HALDEX TRACTION AB ; KHALDEKS TREHKSHN AB ; LUNDSTROEM BO ; LUNDSTROM BO**Inventor(s):** (std): BO LUNDSTROEM ; LUNDSTROM BO ; LUNDSTROEM BO ; LUNDSTROM BO**Inventor(s):** LUNDSTR M BO**Agent(s):** HAFNER AND PARTNER; STROEM AND GULLIKSSON AB; Ström &, Gulliksson AB; ST ONGE STEWARD JOHNSTON AND REENS LLC; PETRI STELLAN**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: HYDRAULIC POWER SYSTEM

Abstract: A hydraulic power system comprises a hydraulic pump coupled to a brushless motor. The brushless motor may comprise stators having a plurality of windings and at least one outrunning rotor having a plurality of magnetic poles and optionally coupled to a drive shaft via flexible couplings which may be coaxial with the drive shaft and rotor.

Classifications:
International (IPC 8-9): F04B17/03 F04B49/06
H02K (Advanced/Invention);
H02K (Subclass/Invention)
CPC: F04B49/06 F04B17/03
European: F04B17/03
US: 417/410.1 417/44.1



Family:

Publication number	Publication date	Application number	Application date
IL206839 A0	20101230	IL20100206839	20100706
IL206839 A1	20160229	IL20100206839	20100706
US2013115108 AA	20130509	US20110808290	20110705
WO12004788 A1	20120112	WO2011L00527	20110705

Priority:

IL20100206839 20100706 WO2011L00527 20110705

Probable Assignee: SAN HITEC LTD

Assignee(s): (std): ILAN MEIRI ; JACOB SEGEL ; MEIRI ILAN ; NAKASH RAHAMIN ; SAN HITEC LTD ; SEGAL JACOB

Inventor(s): (std): SEGAL JACOB ; NAKASH RAHAMIN ; MEIRI ILAN ; JACOB SEGEL ; ILAN MEIRI

Agent(s): GOLD PATENTS LTD; GOLD PATENTS AND FINANCIAL SERVICES LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: ADJUSTMENT MECHANISM FOR **PUMP** SEAL

Abstract: An adjustment mechanism (85) for a seal assembly (80) for a **pump** drive **shaft** (52) of a **pump**, the **pump shaft** (52) mounted for rotation about a rotation axis. The seal assembly (80) comprises a rotating seal (81) mounted for rotation with the drive **shaft** (52) about the rotation axis and a static seal (84) adjacent the rotating seal (81) and axially moveable relative thereto. The adjustment mechanism (85) comprises an adjustment member (87) which is axially moveable so as to cause axial movement of the static seal (84) relative to the rotating seal (81). The mechanism further includes an actuator (88) and a transmission (93) for transmitting a motive force from the actuator to the adjustment member as a result of activation of the actuator. The transmission (93) is operatively connected to the adjustment member (87) at two spaced apart **couplings** (98) whereby activation of the actuator causes simultaneous transmission of the motive force to the two spaced apart **couplings**. The actuator (88) is disposed externally of all **pump** parts.

Classifications:

International (IPC 8-9): F04D29/10 F04D29/12 F04D29/28

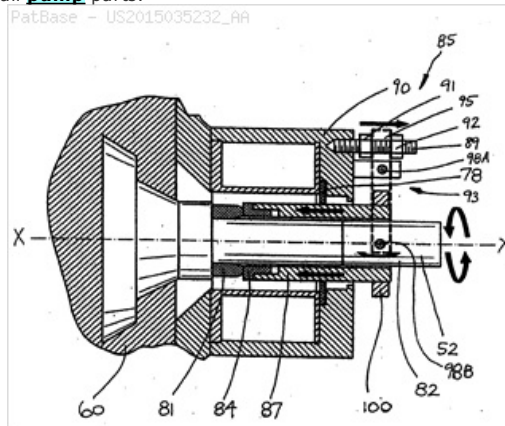
F04D29/62 F16J15/34 (Advanced/Invention)

CPC: F16J15/346 F04D29/106 F04D29/622 F04D29/628 F16J15/3452

F04D29/126 F04D29/28 F04D29/12

European: F04D29/10P F04D29/62A F04D29/62P F16J15/34C8

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Family:

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AU2010359843 AA	20120308	AU20100359843	20101018
AU2010359843 BB	20140821	AU20100359843	20101018
BR112013004883 A2	20160503	BR20131104883	20101018
CA2809869 AA	20130228	CA20102809869	20101018
CA2809869 C	20170530	CA20102809869	20101018
CA2937932 AA	20120308	CA20102937932	20101018
CA2937932 C	20180515	CA20102937932	20101018
PE13472013 A1	20131119	PE20130000350	20101018
US2015035232 AA	20150205	US20100820144	20101018
US2016273544 AA	20160922	US20160084774	20160330
US9322412 BB	20160426	US20100820144	20101018
US9657745 BB	20170523	US20160084774	20160330
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Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW