

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT2621819

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ACKNOWLEDGEMENT OF SECURITY INTEREST IN IP

CONVEYING PARTY DATA

Name	Execution Date
TRIUMPH GROUP, INC.	11/19/2013
TRIUMPH INSULATION SYSTEMS, LLC	11/19/2013
TRIUMPH ACTUATION SYSTEMS, LLC	11/19/2013
TRIUMPH AEROSTRUCTURES, LLC	11/19/2013
TRIUMPH ENGINE CONTROL SYSTEMS, LLC	11/19/2013

RECEIVING PARTY DATA

Name:	PNC BANK, NATIONAL ASSOCIATION
Street Address:	249 FIFTH AVENUE
City:	PITTSBURGH
State/Country:	PENNSYLVANIA
Postal Code:	15222

PROPERTY NUMBERS Total: 48

Property Type	Number
Patent Number:	5726891
Patent Number:	5490387
Patent Number:	5545018
Patent Number:	5863189
Patent Number:	5733109
Patent Number:	5716201
Patent Number:	5833438
Patent Number:	5738500
Patent Number:	6241392
Patent Number:	6442925
Patent Number:	6361270

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Patent Number:	6375435
Patent Number:	6474938
Patent Number:	6623250
Patent Number:	6729139
Patent Number:	7058556
Patent Number:	6663357
Patent Number:	6634865
Patent Number:	6735955
Patent Number:	6864808
Patent Number:	6719543
Patent Number:	6715277
Patent Number:	6782314
Patent Number:	6873887
Patent Number:	6879885
Patent Number:	6843060
Patent Number:	6768938
Patent Number:	6820429
Patent Number:	6821093
Patent Number:	6786702
Patent Number:	6986641
Patent Number:	6962485
Patent Number:	6996969
Patent Number:	7083394
Patent Number:	6758044
Patent Number:	7136738
Patent Number:	7207785
Patent Number:	7013210
Patent Number:	7376504
Patent Number:	7770388
Patent Number:	8011909
Patent Number:	8277208
Patent Number:	8567201
Patent Number:	5528504
Application Number:	12931830
Application Number:	13328060

	13602431
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Application Number:	13589412
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CORRESPONDENCE DATA

Fax Number: (412)562-1041
Phone: 412-562-1637
Email: vicki.cremonese@bipc.com
Correspondence will be sent via US Mail when the email attempt is unsuccessful.
Correspondent Name: MICHAEL L. DEVER
Address Line 1: 301 GRANT STREET
Address Line 2: 20TH FLOOR
Address Line 4: PITTSBURGH, PENNSYLVANIA 15219

ATTORNEY DOCKET NUMBER:	0011046-300893
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NAME OF SUBMITTER:	MICHAEL L. DEVER
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Signature:	/Michael L. Dever/
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Date:	11/20/2013
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Total Attachments: 7

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ACKNOWLEDGMENT OF SECURITY INTEREST IN IP

November 19, 2013

WHEREAS, TRIUMPH GROUP, INC. ("TGI") and each of its Subsidiaries which are signatories hereto (TGI and such signatories, together with any other entity that may become a party hereto as provided herein, the "Grantors") hold all right, title and interest in and to, the patents and trademarks listed on the annexed Schedule 1 (the "IP");

WHEREAS, the Grantors have entered into a Second Amended and Restated Guarantee and Collateral Agreement, dated as of November 19, 2013, (by and among the Grantors and the Administrative Agent (as defined below) as amended, restated, supplemented or otherwise modified from time to time in accordance with its terms, the "Security Agreement"), in favor of PNC BANK, NATIONAL ASSOCIATION, as Administrative Agent and Collateral Agent for the banks and other financial institutions or entities (the "Administrative Agent");

WHEREAS, pursuant to the Security Agreement, the Grantors have granted to the Administrative Agent for certain lenders a continuing security interest in all right, title and interest of the Grantors in, to and under the IP, together with, among other things, the good-will of the business symbolized by the trademarks and the applications and registrations thereof, and all proceeds thereof, including any and all causes of action which may exist by reason of infringement thereof and any and all damages arising from past, present and future violations thereof (the "Collateral"), to secure the payment, performance and observance of the Obligations (as defined in the Security Agreement);

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Grantors do hereby grant to the Administrative Agent for the benefit of the lenders a continuing security interest in the Collateral to secure the prompt payment, performance and observance of the Obligations.

The Grantors do hereby further acknowledge and affirm that the rights and remedies of the Administrative Agent with respect to the Collateral are more fully set forth in the Security Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, each of the undersigned has caused this Amended and Restated Guarantee and Collateral Agreement to be duly executed and delivered as of the date first above written.

GRANTOR:

TRIUMPH GROUP, INC.

By:  _____

Name: M. David Kornblatt

Title: Executive Vice President & CFO

[SIGNATURE PAGE - ACKNOWLEDGMENT OF SECURITY INTEREST IN IP]

GRANTORS:

**NU-TECH BRANDS, INC.
TRIUMPH BRANDS, INC.
TRIUMPH GROUP ACQUISITION CORP.**

By: _____

Name: M. David Koriblat

Title: Vice President and Treasurer of each of the
above named companies

[SIGNATURE PAGE - ACKNOWLEDGMENT OF SECURITY INTEREST IN IP]

GRANTORS(Continued):

TRIUMPH STRUCTURES - EAST TEXAS, INC.
TRIUMPH INTEGRATED AIRCRAFT INTERIORS, INC.**
TRIUMPH INSULATION SYSTEMS, LLC
TRIUMPH STRUCTURES - LONG ISLAND, LLC
TRIUMPH INVESTMENT HOLDINGS, INC.
TRIUMPH AEROSPACE SYSTEMS - NEWPORT NEWS, INC.
TRIUMPH ACCESSORY SERVICES - GRAND PRAIRIE, INC.
TRIUMPH FABRICATIONS - FORT WORTH, INC.
TRIUMPH FABRICATIONS - HOT SPRINGS, LLC
TRIUMPH PROCESSING, INC.
TRIUMPH ACTUATION SYSTEMS - VALENCIA, INC.
TRIUMPH ACTUATION SYSTEMS, LLC
TRIUMPH ACTUATION SYSTEMS - CONNECTICUT, LLC
HT PARTS, L.L.C.
TRIUMPH STRUCTURES - KANSAS CITY, INC.
THE TRIUMPH GROUP OPERATIONS, INC.
TRIUMPH AEROSPACE SYSTEMS GROUP, LLC
TRIUMPH AFTERMARKET SERVICES GROUP, LLC
TRIUMPH AIRBORNE STRUCTURES, LLC
TRIUMPH AVIATIONS INC.
TRIUMPH FABRICATIONS - SAN DIEGO, INC.
TRIUMPH COMPOSITE SYSTEMS, INC.
TRIUMPH CONTROLS, LLC
TRIUMPH ENGINEERED SOLUTIONS, INC.
TRIUMPH ENGINEERING SERVICES, INC.
TRIUMPH GEAR SYSTEMS, INC.
TRIUMPH GEAR SYSTEMS - MACOMB, INC.
TRIUMPH GROUP ACQUISITION HOLDINGS, INC.
TRIUMPH STRUCTURES - LOS ANGELES, INC.
TRIUMPH THERMAL SYSTEMS, LLC
TRIUMPH TURBINE SERVICES, INC.
TRIUMPH STRUCTURES - WICHITA, INC.
TRIUMPH INTERIORS, LLC
TRIUMPH FABRICATIONS - ST. LOUIS, INC.
VAC INDUSTRIES, INC.
TRIUMPH STRUCTURES - EVERETT, INC.
TRIUMPH AEROSTRUCTURES, LLC
TRIUMPH AEROSTRUCTURES HOLDINGS, LLC
TRIUMPH PROCESSING - EMBEE DIVISION, INC.
TRIUMPH AEROSTRUCTURES REAL ESTATE INVESTMENT CO., LLC
TRIUMPH ENGINE CONTROL HOLDINGS, INC.
TRIUMPH ENGINE CONTROL SYSTEMS, LLC

By: _____

Name: M. David Kornblatt

Title: Vice President and Treasurer of each of the above
named companies

PATENT

REEL: 031690 FRAME: 0800

SCHEDULE 1 TO
ACKNOWLEDGMENT OF SECURITY INTEREST IN IP

Trademarks

MARK	FILED	APPL#	REG DT	REG #
CHASE FACILE	02/21/2005	78/571,604	11/07/2006	3,169,817
INSULFAB	07/28/1980	73/272,072	07/26/1983	1,246,367
MISCELLANEOUS DESIGN	09/21/2012	85/734,819	11/05/2013	4,427,807

Patents

SERIAL NO	PATENT NO	TITLE	STATUS	FILE	ISSUE
08/187,661	5,726,891	SURGE DETECTION SYSTEM USING ENGINE SIGNATURE	ISSUED	1 /26/1994	3 /10/1998
08/249,115	5,490,387	FLAME-OUT RESISTANT FUEL PUMPING SYSTEM	ISSUED	5 /25/1994	2 /13/1996
08/427,774	5,545,018	VARIABLE DISPLACEMENT VANE PUMP HAVING FLOATING RING SEAL	ISSUED	4 /25/1995	8 /13/1996
08/500,297	5,863,189	VARIABLE DISPLACEMENT VANE PUMP ADJUSTABLE BY LOW ACTUATION LOADS	ISSUED	7 /10/1995	1/26/1999
08/501,758	5,733,109	VARIABLE DISPLACEMENT VANE PUMP WITH REGULATED VANE LOADING	ISSUED	7 /12/1995	3 /31/1998
08/509,399	5,716,201	VARIABLE DISPLACEMENT VANE PUMP WITH VANE TIP RELIEF	ISSUED	7 /31/1995	2 /10/1998
08/509,400	5,833,438	VARIABLE DISPLACEMENT VANE PUMP HAVING CAM SEAL WITH SEAL LAND	ISSUED	7 /31/1995	11/10/1998
08/544,374	5,738,500	FRICITION CAM SEAL	ISSUED	10/17/1995	4 /14/1998
09/489,747	6,241,392	HYBRID BEARING	ISSUED	1 /21/2000	6 /5 /2001
09/653,143	6,442,925	MANIFOLD DRAIN SYSTEM FOR GAS TURBINE	ISSUED	8 /31/2000	9 /3 /2002
09/654,598	6,361,270	CENTRIFUGAL PUMP FOR A GAS TURBINE ENGINE	ISSUED	9 /1 /2000	3 /26/2002
09/741,524	6,375,435	STATIC CAM SEAL FOR VARIABLE DISPLACEMENT VANE PUMP	ISSUED	12/20/2000	4 /23/2002
09/836,093	6,474,938	FUEL PUMP FOR GAS TURBINES	ISSUED	4 /17/2001	11/5 /2002
09/867,359	6,623,250	FUEL METERING UNIT	ISSUED	5 /29/2001	9 /23/2003

SERIAL NO	PATENT NO	TITLE	STATUS	FILE	ISSUE
09/963,180	6,729,139	ENGINE CONTROL SYSTEM	ISSUED	9 /26/2001	5 /4 /2004
09/963,221	7,058,556	ADAPTIVE AERO-THERMODYNAMIC ENGINE MODEL	ISSUED	9 /26/2001	6 /6 /2006
09/966,132	6,663,357	VANE PUMP WEAR SENSOR FOR PREDICTED FAILURE MODE	ISSUED	9 /28/2001	12/16/2003
09/966,715	6,634,865	VANE PUMP WITH UNDERVANE FEED	ISSUED	9 /28/2001	10/21/2003
09/974,585	6,735,955	CONTROL SYSTEM FOR POSITIONING COMPRESSOR INLET GUIDE VANES	ISSUED	10/10/2001	5 /18/2004
10/059,622	6,864,808	SYSTEM AND METHOD FOR PROCESSING A SIGNAL	ISSUED	1 /29/2002	3 /8 /2005
10/086,189	6,719,543	SELECTIVELY ADJUSTABLE FIXED DISPLACEMENT VANE PUMP	ISSUED	2 /27/2002	4 /13/2004
10/140,847	6,715,277	FUEL CONTROL SYSTEM FOR GAS TURBINE ENGINES	ISSUED	5 /8 /2002	4 /6 /2004
10/290,621	6,782,314	METHOD OF DETECTING IN-RANGE ENGINE SENSOR FAULTS	ISSUED	11/8 /2002	8 /24/2004
10/292,045	6,873,887	ROTOR TORQUE ANTICIPATOR	ISSUED	11/12/2002	3 /29/2005
10/292,046	6,879,885	NEURAL NETWORK ROTOR TORQUES PREDICTOR	ISSUED	11/12/2002	4 /12/2005
10/293,130	6,843,060	AIRCRAFT FAULT MANAGEMENT SYSTEM	ISSUED	11/13/2002	1 /18/2005
10/295,528	6,768,938	VIBRATION MONITORING SYSTEM FOR GAS TURBINE ENGINES	ISSUED	11/15/2002	7 /27/2004
10/295,571	6,820,429	ADAPTIVE ACCELERATION SCHEDULES FOR GAS TURBINE ENGINE CON"	ISSUED	11/15/2002	11/23/2004
10/338,332	6,821,093	FLOW METER	ISSUED	1 /8 /2003	11/23/2004
10/338,550	6,786,702	FUEL METERING UNIT	ISSUED	1 /8 /2003	9 /7 /2004
10/614,364	6,986,641	ENGINE CONTROL SYSTEM	ISSUED	7 /7 /2003	1 /17/2006
10/639,056	6,962,485	CONSTANT BYPASS FLOW CONTROLLER FOR A VARIABLE DISPLACEMENT PUMP	ISSUED	8 /12/2003	11/8 /2005
10/657,828	6,996,969	MULTI-MODE SHUTDOWN SYSTEM FOR A FUEL METERING UNIT	ISSUED	9 /9 /2003	2 /14/2006
10/658,558	7,083,394	VANE PUMP WITH UNDERVANE FEED	ISSUED	9 /8 /2003	8 /1 /2006
10/672,050	6,758,044	CONTROL SYSTEM FOR POSITIONING COMPRESSOR INLET GUIDE VANES	ISSUED	9 /26/2003	7 /6 /2004
10/694,973	7,136,738	FUEL CONTROL SYSTEM FOR GAS TURBINE ENGINES	ISSUED	10/28/2003	11/14/2006
10/715,245	7,207,785	VANE PUMP WEAR SENSOR FOR PREDICTED FAILURE MODE	ISSUED	11/17/2003	4 /24/2007
10/801,301	7,013,210	VIBRATION MONITORING SYSTEM FOR GAS TURBINE ENGINES	ISSUED	3 /16/2004	3 /14/2006
11/001,547	7,376,504	METHOD OF ENGINE SURGE DISCRIMINATION	ISSUED	12/1 /2004	5 /20/2008
11/667,741	7,770,388	HIGH EFFICIENCY 2-STAGE FUEL PUMP FOR GAS TURBINES	ISSUED	5 /14/2007	8 /10/2010
12/007,663	8,011,909	BALANCED VARIABLE DISPLACEMENT VANE PUMP WITH FLOATING FACE SEALS AND	ISSUED	3 /20/2008	9 /6 /2011

SERIAL NO	PATENT NO	TITLE	STATUS	FILE	ISSUE
12/456,086	8,277,208	SPLIT DISCHARGE VANE PUMP AND FLUID METERING SYSTEM THEREFOR	ISSUED	6 /11/2009	10/2 /2012
12/931,830		THERMALLY EFFICIENT MULTIPLE STAGE GEAR PUMP	PENDING	2 /11/2011	
13/170,862	8,567,201	ECOLOGY SYSTEM FOR DRAINING THE MANIFOLD OF A GAS TURBINE ENGINE	ISSUED	6 /28/2011	10/29/2013
13/328,060		MULTI-DISCHARGE HYDRAULIC VANE PUMP	PUBLISHED	12/16/2011	
13/602,431		SPLIT DISCHARGE VANE PUMP AND FLUID METERING SYSTEM THEREFOR	PUBLISHED	9 /4 /2012	
13/589,412		BENT AXIS VARIABLE DELIVERY INLINE DRIVE AXIAL PISTON PUMP AND/OR MOTOR	PUBLISHED	20-Aug-12	
08/293,813	5528504	EQUIVALENT THICKNESS BENDING ANALOGY FOR INTEGRALLY STIFFENED	ISSUED	22-Aug-94	18-Jun-96