各 位

第 19 回国際鍛造会議開催ご案内の件

拝啓 時下益々ご清栄のこととお喜び申し上げます。
平素は当協会事業活動にご支援、ご協力を賜り厚く御礼申し上げます。
さて、本年9月にアメリカシカゴにて第19回国際鍛造会議が開催されます。
つきましてはアメリカ鍛造協会より会議概要が届き、視察団編成に向けて準備をいたして
おりますが、工場見学コースが各コースとも40名限定、先着順となっております関係上、正
式な参加ご案内を差し上げる前に会議参加のご意向及びご希望の工場見学コースを伺い主催
国に連絡したいと存じます。
つきましては、英文にて恐縮ですが、下記日程、見学コース案内を参照の上、参加ご希望
の方は同封いたしました申込書にご記入いただきお申し込み下さい。
尚、参加にかかる総費用が決定次第、再度改めてご案内を申し上げます。
また、お申し込み頂いた時点でキャンセルチャージが発生いたしますので予めご了承いた
だきますようよろしくお願い申し上げます。

敬具

記

行事日程

◇ 開催日 2008 年（平成 20 年）9 月 7 日～12 日
◇ プログラム

9 月 7 日（日）開会レセプション

9 月 8 日（月）会 議

Opening Ceremony
・Congress Welcome
・EUROFORGE President’s Greeting

Session 1
・Forging Trends・The Americas －USA
・Die Lubrication Management －USA
・Automation in the Forge Shop －USA
・The Steel Boom・Realities and Illusions

Session 2
・Forging Trends －China
• New Developments in Finite Element Simulation of Industrial Forging Process – France

• Simulation-based Process Design for Improvement of Profitability in the Hot Forging Industry – USA

• Forging Trends – India

• Intricacies for the Successful Induction Heating of Steels in Modern Forge Shops – USA

• New Developments of Machines for Progressive Forming – Germany

9 月 9 日（火）

Session 3

• Forging Trends – Europe

• Advantages of Forging Lines with Servo-Drive Technology for Optimization of the Forming Process, Tooling & Transfer – Germany

• New Machine Concept for Preforming by Rolls – Germany

• In-line Inspection/Monitoring Systems for the Hot Forging Industry – USA

• Enhancement of Lifetime of Forging Dies by Means of Cryogenic Treatment – Czech Republic

• Combined Surface Treatments Increase Lifetime of Forging Dies – Italy

• New Developments in Forging Die Materials – Germany

Session 4

• Forging Trends – Pacific Rim – Japan Forging Association – JFA

• Trend of the Latest Cold Forging Technology in Yamanaka Engineering – Japan

• New Developments for Microalloyed High Strength Forging Steels – Germany

• Microalloyed Forging Steels – USA

• Cost-effective Steels for Hot & Cold Forging to Provide Solutions on a Comprehensive Range of Applications – France

• Forging Technology for Crankshafts – Japan

• Aluminum Alloy Underbody Auto Parts – Japan

工場見学（同伴者用コースが別にあります。）

TOUR 1   CHICAGO PLANT TOURS—A

9 月 10 日（水） Sightseeing in Chicago

9 月 11 日（木）

AM: Dekalb Forge Company

• www.dekalbforge.com
• Total # of Employees: 260
• # of employees at visit location: 80
• Forging process: Impression die, closed die forgings
• Materials forged: Steel, alloy, and stainless
• Markets: Aerospace; ordinance; Off-highway equipment; Construction; Mining & Material Handling, Oil, Gas and Railroad
• Weight or size range of products: 5 to 40 pounds
• Main equipment: 9 drop and power hammers ranging from 2,500 to 6,000 lb;
induction, slot and rotary furnaces
• Special note: ISO 9002 Registered

PM: Moline Forge, Inc.
• www.molineforge.com
• Total # of Employees: 70
• Forging process: Impression Die
• Materials forged: Carbon alloy, and micro alloy steels
• Products: Hydraulic cylinder, combine and backhoe forgings, crankshaft & drive train forgings
• Markets: Farm equipment, construction and off-highway equipment, railroad, drive train component, recreational vehicle, compressor and conveyor system industries
• Weight or size range of products: 2 lb. to 80 lb.
• Main equipment: 11 Power and Drop Hammers ranging from 2500 to 9000 lb.
• Distribution of product: North America
• Special note: Located in the heart of the Midwest farm belt, company has had the same family ownership since 1915. Offers customers additional service through partners in heat treating, plating, painting and machining. ISO 9001:2000

9 月 12 日(金)
AM: Eaton Corporation South Bend Forge Plant
• www.eaton.com
• Total # of Employees: 63,000
• # of employees at visit location: 114
• Forging process: Flashless Forging and Precision Forging • Gear Teeth forged into product.
• Materials forged: Steel
• Products: Transmission Gears and Shafts
• Markets: Heavy Duty Truck, ATVs, Automotive and Boat Motors
• Weight or size range of products: 2 to 35 lbs.
• Main equipment: Mechanical Presses ranging from 1000 to 3000 tons, Tooling (CNC Machining, Die Manufacturing), Cleaners, and Saws
• Distribution of product: North America and Europe
• Special note: Organizational Structure is Self-Directed Team based culture with all salaried workforce; Certifications: ISO-14001, OSHA 18001, and ISO-9001:2000 certified. Lean manufacturing with full CAD and simulation capabilities. Safety: OSHA VPP Star certified.

PM: Cornell Forge Company
• www.cornellforge.com
• Total # of Employees: 70
• # of employees at visit location: 70
• Forging process: Closed Die
• Materials forged: Carbon, alloy, stainless steel and titanium
• Products: All Custom
• Markets: Golf; material handling, construction; off-highway; marine; medical; agricultural; railroad; recreational; hand tools; aerospace; military
• Weight or size range of products: From ounces up to 30 pounds
• Main equipment: Gravity and Power Hammers from 1500 to 6000 lbs; Mechanical presses from 1300 to 1600 ton
• Distribution of product: Primarily North America

TOUR 2  CHICAGO PLANT TOURS—B

9月 10日（水） Sightseeing in Chicago
9月 11日（木）

AM: Walker Forge, Inc.

• www.walkerforge.com
• Total # of Employees: 280
• # of employees at visit location: 280
• Forging Process: Impression Die forging (Hot)
• Materials: Carbon/alloy-steel and stainless-steel
• Markets: Agricultural; heavy truck; oil field equipment; automotive; Industrial; railroad; construction; military; recreational; diesel engine; off-highway
• Weight or size range of products: 2.2kg - 165kg
• Main equipment: Press sizes range from 850T to 4000T and Hammers from 900kg-1400kg

PM: Superior Die Set Corp.

• www.supdie.com
• Headquarters location: Oak Creek, WI
• Total # of Employees: 400
• # of employees at visit location 225
• Type of business: Complete Machining/Manufacturing facility specializing in Die Sets; Mold Bases; Welding; Fabrication, Forging Services
• Materials and products produced for the forging Industry include: Forging press bolsters; trim die bolsters, new and repaired systems, with complete engineering/design available. FEA service can be implemented for new and old designs.
• Forging hammer services & repair. i.e., new rams, sow blocks, guides, wedges, keys, tie plates, piston rods; replacement components for Banning, Besche, Ceco, Erie, Chambersburg, Lasco Forging Hammers
• Weight or size range of products: Bolster manufacturing and refurbishing services include bolster capacities up to 120,000#, Hammer Rams up to 50,000#
• Special note: Celebrating company's 85th year
9 月 12 日（金）
AM: Cornell Forge Company
- www.cornellforge.com
- Total # of Employees: 70
- # of employees at visit location: 70
- Forging process: Closed Die
- Materials forged: Carbon, alloy, stainless steel and titanium
- Products: All Custom
- Markets: Golf; material handling, construction; off-highway; marine; medical; agricultural; railroad; recreational; hand tools; aerospace; military
- Weight or size range of products: From ounces up to 30 pounds
- Main equipment: Gravity and Power Hammers from 1500 to 6000 lbs; Mechanical presses from 1300 to 1600 ton
- Distribution of product: Primarily North America

PM: A. Finkl & Sons Co.
- www.finkl.com
- Total # of Employees: 350
- # of employees at visit location: 330
- Forging process: Supplier of forging die steels, plastic mold steels, die casting tool steels and custom open-die forgings
- Materials forged: Carbon, Alloy, Stainless and Aluminum
- Products: Shafts, gear blanks, mandrel-forged rings, roll-shells and specialized shapes, including bored products
- Markets: Forging; pressure die casting and plastics industries
- Weight or size range of products: A few pounds to over 100,000 pounds
- Main equipment: Two 90 EAF, Presses from 500 ton to 6000 ton
- Distribution of product: North America and more than 18 countries worldwide
- Special note: Melting, forging, heat-treating and machining capabilities; ISO 9000 certification.

TOUR 3  CLEVELAND PLANT TOURS—A

9 月 10 日（水） 移動
9 月 11 日（木）
AM: SIFCO Forge Group
- www.sifco.com
- Cleveland Facility Employees: 137
- Forging Process: Closed die (impression), cold-warm
- Materials Forged: Titanium, stainless steel, alloy, carbon, aluminum, copper alloys, high temp alloys.
- Products: Gears, turbine shafts, discs, aircraft structural, wheels, hydraulic, engine parts medical components and nuclear components
- Markets: Aerospace-commercial/military, power generation-land based, medical,
marine, petrochemical and international space station

• Main Equipment: Closed-die hammers 2,000 to 40,000 lbs, hydraulic press 850 to 3,500 tons; 3500 ton precision hydraulic screw press, 4 inch mechanical screw press and 5,000 lb. open frame hammer
• Distribution of Products: Global
  AS 7102 heat-treat certified, CNC turning and die-sinking, chemical milling, EN-9000 certified, Rolls Royce certified supplier.

PM: Meadville Forging Company
• Total # of Employees: 600
• No. of employees at this location: 280
• Forging Process: Closed Die Forging
• Materials Forged: Carbon, Alloy and Micro Alloy Steels
• Products: Parts from the full range of carbon, alloy and microalloy steels, in diverse shapes and sizes from two to 100 pounds.
• Markets: Various; specialists in automotive
• Weight/Size ranges: 2lbs to 100 lbs
• Main Equipment: 14 mechanical presses ranging between 1000 and 4000 tons
• Distribution of Products: Global
• Special Notes: The MFC Group provides forging, heat treating and machining services. It has four facilities in Pennsylvania, Virginia and North Carolina. The Group processes 90,000 tons of steel per year, and features manually operated vertical presses as well as automated Eumuco vertical presses and Hatebur and Sakamura horizontal presses. A number of heat treating options are offered. Machining services include turning, drilling and tapping, broaching, induction hardening and wheel stud insertion.

9月12日（金）
AM: Colfor Minerva Plant/ Colfor Malvern Plant
• www.aam.com
• Total # of Employees: 10,000
• Colfor Employee Count: 780
• Forging Process: Precision cold, warm and hot forgings; heat treat; precision machining.
• Materials Forged: Carbon and common alloys
• Products: Transmission shafts, transfer case shafts, hypoid drive pinions, axle shafts, transmission gears, mining bits, wheel spindles, and inner-connecting shafts, among other products.
• Markets: Automotive, motorcycle
• Weight or Size Ranges: Up to 25 Lbs.
• Main Equipment: Press, upsetters and cross wedge roller
• Distribution: Global
• Special Notes: The three Colfor facilities in Ohio contribute to American Axle's product line evolution and expansion in the automotive supplier market.
PM: The Timken Corporation
• www.timken.com
• Headquarters Location: Canton, OH, USA
• Total # Employees worldwide: 27,000
• # Employees at this Location: 4,900
• Type of Business: Steel manufacturer
• Markets: Industrial, marine, military, mining, off-highway, power transmission, rail
• Materials Produced: Alloy carbon steel produced in forms of ingot bloom, bar, tube and finished & semi-finished components
• Weight/Size range of Products: Ingot • 29” x 29”, 40” x 48”;
  Bloom • 11” x 14 3/4”
• Distribution of Products: Global
• Special note: Clean, commercially available air-melt steel with tight control of chemistry and hardenability.

TOUR 4 CLEVELAND PLANT TOURS — B

9月10日(水) 移動
9月11日(木)

AM: Meadville Forging Company
• www.meadforge.com
• Total # of Employees: 600
• No. of employees at this location: 280
• Forging Process: Closed Die Forging
• Materials Forged: Carbon, Alloy and Micro Alloy Steels
• Products: Parts from the full range of carbon, alloy and microalloy steels, in diverse shapes and sizes from two to 100 pounds.
• Markets: Various; specialists in automotive
• Weight/Size ranges: 2lbs to 100 lbs
• Main Equipment: 14 mechanical presses ranging between 1000 and 4000 tons
• Distribution of Products: Global
• Special Notes: The MFC Group provides forging, heat treating and machining services. It has four facilities in Pennsylvania, Virginia and North Carolina. The Group processes 90,000 tons of steel per year, and features manually operated vertical presses as well as automated Eumuco vertical presses and Hatebur and Sakamura horizontal presses. A number of heat treating options are offered. Machining services include turning, drilling and tapping, broaching, induction hardening and wheel stud insertion.

PM: SIFCO Forge Group
• www.sifco.com
• Cleveland Facility Employees: 137
• Forging Process: Closed die (impression), cold-warm
• Materials Forged: Titanium, stainless steel, alloy, carbon, aluminum, copper alloys, high temp alloys
• Products: Gears, turbine shafts, discs, aircraft structural, wheels, hydraulic, engine parts medical components and nuclear components
• Markets: Aerospace-commercial/military, power generation-land based, medical, marine, petrochemical and international space station
• Main Equipment: Closed-die hammers 2,000 to 40,000 lbs, hydraulic press 850 to 3,500 tons; 3500 ton precision hydraulic screw press, 4 inch mechanical screw press and 5,000 lb. open frame hammer
• Distribution of Products: Global

9月12日（金）

**AM: Colfor Minerva Plant/ Colfor Malvern Plant**
- www.aam.com
- Total # of Employees: 10,000
- Colfor Employee Count: 780
- Forging Process: Precision cold, warm and hot forgings; heat treat; precision machining.
- Materials Forged: Carbon and common alloys
- Products: Transmission shafts, transfer case shafts, hypoid drive pinions, axle shafts, transmission gears, mining bits, wheel spindles, and inner-connecting shafts, among other products.
- Markets: Automotive, motorcycle
- Weight or Size Ranges: Up to 25 Lbs.
- Main Equipment: Press, upsetting and cross wedge roller
- Distribution: Global
- Special Notes: The three Colfor facilities in Ohio contribute to American Axle’s product line evolution and expansion in the automotive supplier market.

**PM: Republic Engineered Products**
- www.republicengineered.com
- Headquarters: Akron, Ohio, USA
- Total # employees: 2400
- # of Employees at this location: 475
- Type of Business: Steel Producer
- Markets: Automotive, bearings, energy (oil and gas), farm machinery, forgings, hand tools, machine tools, off-highway and construction equipment, ordinance, pumps, valves and fittings, steel service centers
- Materials and Products Produced (at this location): Carbon and alloy steel ingots and long products.
- Weight or Size Range of Products (at this location): Continuous cast round cornered squares 4.00” to 8.50” (101.6mm to 215.9mm). Bottom poured forging ingots 29” (737mm) round, 37” (940mm) round, and others.
- Distribution of Products: Global
- Special Notes: Republic has six production facilities. In addition to the ingots and round cornered squares, they produce a full range of long products, including hot rolled bar rounds from 1.00” (25.4mm) to 6.50” (165.1mm), hot rolled bar hexagons
from 1.00” (25.4mm) to 1.813” (46mm), and hot rolled coiled rounds from .297” (7.54mm) to 1.813” (46mm). Company also produces a full range of cold finished (bright) products.

TOUR 5  CINCINNATI PLANT TOURS

9 月 10 日(水) 移動
9 月 11 日(木)
AM: Hirschvogel Inc.  
• www.Hirschvogel.com  
• Total Employees: 2546  
• Total at HVI: 215  
• Forging Process: Hot, Warm and cold Forging  
• Machining Processes: Turning, Milling and drilling, Spline broaching and rolling  
• Materials Forged: Ferrous steel, carbon and low alloy  
• Products: Gas and Diesel Injection, Chassis, Engine, Transmission, and Powertrain  
• Markets: Automotive 1st Tier & OEM  
• Weights: 5 - 20 kgs  
• Main Equipment: 1600/ 2500 ton Warm Forge Presses 160-1600 Cold Forge Presses  
• Distribution: Global  
• Special Note: The 140,000 square foot forging facility contains 12 Press lines, most of which are fully automated. Currently producing cold and warm forged parts, but scheduled to add hot forging capabilities in 2008. The 25,000 square foot machining facility allows company to provide ready to assemble components directly to the US automotive market.

9 月 12 日(金)
AM: Louisville Forge & GearWorks, LLC  
• www.louisvilleforge.com  
• # of employees at this location: 300  
• Forging process: Impression die  
• Materials forged: Carbon, alloy, microalloy steel  
• Products: Crankshaft forgings (including twisting), steering knuckles, ring gears for drive axles, control arms and connecting rods.  
• Markets: Automotive, aerospace, truck and off-highway markets  
• Weight or size range of products: 2.5 to 200 lbs.  
• Main equipment: 1600 Ton to 8000 ton mechanical presses and a multitude of secondary value added operations  
• Distribution of product: Global  
• Special note: Specialize in mass or geometrically center-balanced crankshafts. All design and die work is performed in house.

PM: Toyota Motor Manufacturing Kentucky, Inc.  
• www.toyotageorgetown.com  
• Headquarters location: Erlanger, KY  
• # of employees at visit location: 7000  
• Markets: Automotive
• Products manufactured/assembled at visit location: Automobiles: Camry, Avalon & Solara
• Distribution of product: Global
• Special note: 7.5 million square foot facility. Tour begins in Stamping, then moves to Body Weld where stamped pieces are assembled. Computer-controlled robots perform the welds that result in a completed body shell. Overhead conveyors transport the cars from Paint, to the Final Line in Assembly.

TOUR 6 DETROIT PLANT TOURS

9 月 10 日（水） 移動
9 月 11 日（木）
AM: Bharat Forge America Inc.
• www.bharatforgeamerica.com
• Total # of employees: 10,000
• Number of Employees at Visit Location: 180
• Forging Process: Impression die hot forging
• Materials Forged: Carbon & alloy
• Products: Control arms, knuckles, pistons, connecting rods, crankshafts, king pins, spindles, steering components, military components
• Weight and size range of products: 1 lb. to 100 lbs
• Primary Equipment: 2500, 4000 and 6000 ton mechanical press lines
• Distribution of product: Global
• Special note: Bharat Forge America is a wholly owned subsidiary of Bharat Forge Ltd., Pune, India. Additional facilities are located in Germany, Sweden, Scotland and China.

PM: Gerdau MACSTEEL
• www.macsteel.com
• Number of employees: 1600
• Number of employees at visiting Plant: 320
• Processes: Utilizes electric arc furnaces, ladle furnace refining, vacuum arc degassing, advanced rotary continuous casting, continuous casting and direct twist-free precision rolling
• Products: Engineered SBQ carbon and alloy hot rolled and bright cold finished steel bars
• Typical Applications: Engines/motors; transmissions gear boxes; drive trains/steering system
• Special note: Also has manufacturing plants in Monroe, Michigan, and Fort Smith, Arkansas. Company provides value added processes at each producing facility and at six steel processing plants

9 月 12 日（金）
AM: FormTech Industries LLC_Royal Oak and Fraser
PM: FormTech Industries LLC_Detroit
• www.formtech2.com
• Forging processes: Impression die hot forging; warm forging; cold forging; ring rolling
• Materials forged: Carbon and alloy
• Products: Wheel hubs, spindles, transmission and differential gears, front-wheel-drive components, piston pins, steering sockets, suspension sockets, combustion plates, end caps, shafts, side & pinion gears
• Markets: Automotive light vehicle, heavy truck and industrial markets
• Main equipment: Hatebur hot forming machines; a 3,000-ton five station Kurimoto hot forging press; Wagner hot ringrolling/disk mill lines; 2,000-ton three station Bliss automated press lines; a 2,200-ton five station automated press line; a 2,500-ton warm forge press with 60” stroke; 2,000-ton five station Komatsu warm forming press line; a 630-ton four station Schuler press; and forty additional single/multi-station forging presses.
• Distribution of product: North America, Europe and Asia
• Special note: Acquired assets of the North American forging operations of Metaldyne Corporation in 2006. With six plant locations in three states combining for over one million square feet of manufacturing floor space, FormTech Industries LLC is now one of the largest independent suppliers of automotive forgings in the United States.

TOUR 7  LOS ANGELES PLANT TOURS

9 月 10 日(水）移動
9 月 11 日(木）

AM: Robinson Helicopter
  • www.robinsonheli.com
  • Description: Manufacturer of two-seat R22 and four-seat R44 helicopters.
  • Address and Contact Info: 2901 Airport Drive, Torrance, California 90505 USA, Telephone: 310-539-0508, Fax: 310-539-5198
  • Size: 1,200 Employees, with sales exceeding $200 million annually
  • Ownership: Robinson Helicopter Company is a privately held S Corporation.
  • Key Executives: Frank Robinson, President and Chairman; Kurt Robinson, Vice President - Product Support; Wayne Walden, Vice President - Production; Peter Riedl, Vice President - Engineering; Tim Goetz - Chief Financial Officer and Corporate Attorney
  • Founded: June 1973 by Frank Robinson.
  • Products/Services: Manufacturer of helicopters, parts and accessories, helicopter and engine overhaul, helicopter repairs, and educational courses for pilots and maintenance technicians.
  • Geographic Data: Headquartered in Southern California, with a global network of more than 115 factory-authorized dealers and 300 service centers in over 55 countries.

PM: Aluminum Precision Product, Inc.- Warner Avenue Plant
  • www.aluminumprecision.com
  • Employees at this facility: 450
  • Forging processes: Open and closed die hot forging
  • Materials forged: Aluminum; titanium
  • Products: Aerospace structures and landing gear, wheel and brake products;
commercial one piece forged wheels
• Markets: All aerospace markets; Ferrari, Lamborghini and Mercedes
• Weight: Open die up to 5000 lbs.; closed die 1 to 500 lbs.
• Main equipment: 25 hydraulic presses from 300 to 8000 tons; machine shop
• Distribution: Global

Aluminum Precision Product, Inc.-Alton Avenue Plant
• www.aluminumprecision.com
• # of employees at visit location: 150
• Forging process: Closed die
• Materials forged: Aluminum and titanium
• Products: Window frame cells
• Markets: Aerospace
• Weight or size range of products: 1 to 250 pounds
• Main equipment: 10 hydraulic presses from 300 to 3500 tons.
• Distribution of product: Global

9月12日（金）
AM: Aluminum Precision Product, Inc.-Oxnard Plant
• www.aluminumprecision.com
• # of employees at visit location: 85
• Forging process: Open and closed die
• Materials forged: Aluminum
• Products: Domestic commercial products; aerospace structures; wheel centers
• Markets: Aerospace; commercial
• Weight or size range of products: Closed die, 1 to 250 lbs, Open die, up to 5000 lbs
• Main equipment: 2 hydraulic presses - 1500 and 5000 tons, 5 mechanical presses from 1300 to 4000 tons.
• Distribution of product: Mostly U.S. domestic

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※航空運賃、地上費、宿泊費等は未定。