## BOGERT LIFTING JACK KIT PART NR: 88M-MPBMI

NSN: 5120-01-598-1653

## for Navistar MaxxPro FOV

Applicable to Navistar Defense MaxxPro FOV with DXM Independent Suspension. For Models M1224, M1224A1, M1234, M1234A1, M1235, M1235A1



Tire Replacement Jack Operating Instructions (88M-MPM) Model: 88M-06-15-09 Jack with BMI P40A Hydraulic Pump

Bogert Manufacturing Inc. 3606 N. Swallow Ave., Suite 200 Pasco, WA 99301

Contact: Bogert Manufacturing Inc.
Office Phone Number: (509) 735-2106
Email: info@bmihydraulics.com
Cage Code: 5DT74

## Bogert 88M-06-15-09 Jack & BMI P40A Hydraulic Pump Tire Replacement Jack Operating Instructions



Operating Instructions to change one tire at a time with the 88M-MPBMI Jack Kit. It is not to be used for any other purpose.

Applicable to Navistar Defense MaxxPro FOV with DXM Independent Suspension. For Models M1224, M1224A1, M1234, M1234A1, M1235, M1235A1

TO PREVENT SERIOUS INJURY, READ AND UNDERSTAND ALL WARNINGS AND INSTRUCTIONS BEFORE USE.

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Technical questions and replacement parts: 1-800-627-8088 in the US or (509) 735-2106

## **Table of Contents**

		<b>Page</b>
1.0	GENERAL SYSTEM DESCRIPTION	4
2.0	WARNING SUMMARY	5
3.0	GENERAL SAFETY INFORMATION	6
4.0	OPERATING INSTRUCTIONS	7
5.0	RECEIVING AND GENERAL JACK INFORMATION	12
6.0	INSPECTION, CLEANING, AND MAINTENANCE	13
7.0	SAFETY LABELS ON JACK	15
8.0	WARRANTY	15
9.0	REVISION CONTROL	15

## 1.0 GENERAL SYSTEM DESCRIPTION

The 88M-MPBMI KIT consists of a steel frame hydraulic lifting jack with a 12 ton, 7.25" travel hydraulic ram (14.2 lbs), an 8"x18" jack bearing plate (5.6 lbs), and a hydraulic hand pump with a 6-foot hose (11.5 lbs), ram extension, and a carry bag (2.5 lbs) for a combined total kit weight of 35.0 lbs.

The jack is designed to lift the MAXXPRO FOV at the lowest point on the underside of the lower control arm, a lift point common to the MAXXPRO FOV with DXM suspension.

The jack has a minimum height of 9.00 inches and a maximum lift height of 16.50 inches, providing more than 7.25 inches of available lifting power stroke. The jack has been tested in accordance with ASME-PALD-2005 and some elements of ASME B30.1-2004.

88M-MPBMI Jack Kit Specifications & Performance

Specifications	Performance
Vehicle platform	Navistar Defense International MaxxPro FOV
Lift point	Lowest Pont of control arms
Time to unstow jack, interface jack with lift	
point and reach maximum lift height	1 Minutes 30 seconds
Time to change tire (2-man) with electric	
impact wrench	Unknown
Time to change tire (1-man) with electric	
impact wrench	Unknown
Jack type	Hydraulic
Maximum pump operating pressure	6000 PSI
Maximum operating force	
on pump handle	54 lbs (18 inch handle length)
Lifting load rated capacity	12 Tons (24,000 lbs.)@6000PSI
Minimum height	9.00 inches
Maximum lifting height	16.5 inches
Total vertical lifting stroke	7.25 inches
Ground pressure @ 24,000 lbs.	166 psi
Ground contact area	144 in sq
	24"L x 11"W x 10"H bag dimensions
Dimensions	24"L x 12"W x 6"H stowage size
Kit total weight	35 lbs
	14.25 !!
Jack weight (without pump and bearing plate)	14.25 lbs
Bearing plate weight	5.6 lbs
Hydraulic pump weight w/Hose & Fluid	11.5 lbs
Longitudinal slope lifting capability	NA
Side slope lifting capability	NA
Rated Endurance	Minimum of 100 lifts @ rated load*

## 2.0 WARNING SUMMARY

## WARNING!

PRIOR TO USING THE 88M-MPBMI KIT
READ AND UNDERSTAND ALL INSTRUCTIONS IN THIS MANUAL.
READ ALL WARNINGS, SAFETY PRECAUTIONS & LABELING ON THE JACK.
Failure to follow instructions listed in following pages may result in serious injury.
SAVE THESE INSTRUCTIONS.

- Use safety equipment. Always wear ANSI approved safety impact goggles, steel-toed safety shoes/boots, and heavy duty work gloves when using this product.
- Only personnel directly related to changing a tire should be present near vehicle while operating the jack.
- Never allow anyone underneath any parts of the vehicle during jack operation at any time when the vehicle weight is being supported by the jack.
- Always keep hands, fingers, and feet away from all moving parts of the 88M-06-15-09 Jack when applying or releasing a load. Remain clear of the vehicle during raising or lowering operations.
- Do not stand on the 88M-06-15-09 jack, doing so may cause personal injury.
- Do not use this jack for any other purpose other than changing a tire on the Navistar MaxxPro FOV.
- Do not attempt lifting a wheel on a vehicle with an axle weight exceeding 24,000 lbs. The 88M-MPBMI jack kit has been proven safe to use. Actual combat weight and axle weight distribution of your vehicle may vary. If possible, know your axle weights and do not attempt using the 88M-MPBMI jack kit on an axle exceeding 24,000 lbs. Doing so could cause serious personal injury and/or property damage.
- Never modify the 88M-06-15-09 in an attempt to use it for a purpose it was not designed for.
- Check jack for damage before using. Check for misalignment or binding of moving parts, loose mounting, and cracked or broken parts. Replace if damaged.
- The 88M-06-15-09 Jack is designed to be used with enclosed base plate only.
- Do not use the jack if any of the parts are damaged or not operational.

- Position the jack to lift only a single wheel station at a time. Do not use multiple jacks or lifting means to raise more than one wheel at a time.
- Jack service must be performed only by qualified personnel. Service performed by unqualified personnel could result in a risk of injury.
- Do not attempt to lift the vehicle on a side or longitudinal slope.
- Do not use the jack to support a vehicle over extended periods of time. The duration of the lifting task should be kept to a minimum. Always use jack stands to support a vehicle over an extended period of time.

The warnings, precautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. The operator must understand that common sense and caution are factors, which cannot be built into this product, but must be supplied by the operator.

## 3.0 GENERAL SAFETY INFORMATION

- 3.1 Inspect the jack before each use. Verify that parts are not worn, bent or missing. If so, do not use the jack. Obtain replacement jack.
- 3.2 Do not modify or weld to the jack.
- 3.3 Do not use it for anything other than its intended purpose of lifting a wheel to change a tire on the Navistar MaxxPro FOV.
- 3.4 Always lift at the designated lift point identified in this manual, the lowest point on the underside of the lower control arm, a lift point common to all MaxxPro FOV with DXM suspension. Failure to do so can result in damage to the jack or serious injury or death to personnel.
- 3.5 Ensure that all air is purged from the hydraulic pump and jack before initial use. Refer to Section 6.0 for jack maintenance & purging instructions. If, after purging the jack still does not appear to be working properly, do not use the jack. Replace jack.

## 4.0 OPERATING INSTRUCTIONS

The following instructions are a general guideline for hydraulic hand pumps. They do not replace the operation or service manual for the enclosed pump.

**IMPORTANT!:** Prior to its first use, make sure to check for proper hydraulic oil level in the external pump. Then thoroughly test the 88M-06-15-09 jack for proper operation prior to its actual use.

If the 88M-06-15-09 Jack appears not to be working properly, it may be necessary to bleed its hydraulic system of excess air. To do so, simply pump the pump handle until the hydraulic cylinder on the 88M-06-15-09 has extended at least 3 inches. Tip the jack up on its nose until the hose fitting is pointing up. Release the pump valve. Compress the jack forcing any air back to the pump. Then check pump fluid level. *CAUTION: If, after purging, the jack still does not appear to be working properly, do not use the Jack until it has been repaired by a qualified service technician.* 

**WARNING:** Do not allow anyone in the vehicle while using the 88M-06-15-09 jack to replace a tire. Sudden movements and weight shift can result in instability. Keep all personnel a safe distance away from the vehicle.

**WARNING:** Never allow anyone underneath any parts of the vehicle during jack operation at any time when the vehicle weight is being supported by the jack. Failure to follow this instruction can result in severe injury or death to personnel.

**WARNING:** Do not attempt to lift the vehicle on a side or longitudinal slope. The vehicle can slide or roll causing severe injury or death to personnel.

**WARNING:** Before lifting, place the vehicle's transmission in "PARK". Set the vehicle's emergency brake. Then, block the wheel diagonal to the wheel that is being lifted, with wheel chocks. Failure to follow this instruction can result in severe injury or death to personnel.

## **Chock Wheel – Diagonal to tire being changed**

- 4.1 Use two wheel chocks on the tire diagonal to the tire being changed. For example, when changing the right rear tire, chock the front left tire.
- 4.2 Sandwich the tire between the wheel chocks by placing one block in front and one block behind tire.



Figure 4.1 Wheel chocks are not supplied in 88M-MPBMI Jack Kit.

## Check Clearance.

- 4.3 The base plate is 8 inches wide and can be used to estimate clearance availability.
- 4.4 Slide the base plate under the A-arm and stand the base plate up under the lowest point. A minimum of 9 inches is required to place the jack. A level surface ensures proper engagement with the vehicle lift point.

Note: When the wheel/tire is extremely low on a **level <u>soft-soil</u> surface**, the minimum clearance required can be attained by trenching a spot for the jack to sit. Remove sand mud etc. by trenching a level spot. It may be easier to trench a spot first, then back up/drive forward over the trench.

4.5 Recheck for minimum clearance.



## Connect the Jack to the Pump.

- 4.6 Turn the release valve on the hydraulic pump a ½ turn counter clockwise 5 to release any pressure before attempting connection to the jack.
- 4.7 Locate the 6 foot hydraulic hose and wipe any dirt, sand, snow, etc. from the hydraulic fitting on the end of the hose. Also wipe any debris from the hydraulic fitting on the jack coupler.
- 4.8 Attach the 6 foot hose between the jack and pump by pushing the fittings together.

## Lower the Jack Completely.

4.9 Check to make sure the 88M-06-15-09 jack is fully lowered.

**Note:** The jack, hose and pump <u>will</u> need to be assembled to lower jack. If they are not attached, the hydraulic fluid cannot move from the jack to the pump, allowing the jack to fully lower.

**CAUTION!** The release valve on the hydraulic pump controls the release of the hydraulic fluid causing the jack to lower. Opening this valve too quickly will cause the vehicle to suddenly drop.

4.10 To lower jack, S-L-O-W-L-Y turn release valve on the hydraulic pump counter clockwise O not more than one full turn to release any pressure on the pump. Then press down on the saddle of the jack to lower it to the fully retracted position.

*Note:* The saddle is the surface that makes the connection to the vehicle.

## Position Jack and Base Plate Unit.

- 4.11 If clearance has not already been checked, see step 3.
- 4.12 Seat the tube of the jack base into the center of the long angle attached to the base plate. Pull back on the plunger assembly to seat the jack on the base plate. Release the plunger to lock the jack to the base plate assembly. (Reverse order to remove.)



Always maintain a safe distance *from the vehicle (minimum of 3 ft)* during lift and lower operations.



Figure 4.12 Pull back on plunger to set jack.

4.13 The jack base plate must be in-line, parallel with the tire or wheel of the vehicle.

> *Note:* Jack should be positioned inline with the vehicle tire to ensure the jack's saddle and vehicle lifting points are in alignment. If not, remove and reposition the jack before lifting the vehicle.



Figure 4.13 Position Jack in line with vehicle axle. (Parallel)

- 4.14 Position the saddle of the jack under the recommended lifting point which is at the lowest point on the underside of the lower control arm.
- 4.15 Close external pump valve by turning it clockwise\*\mathbb{O}.

*Note:* The hose end of the hydraulic pump should be level with or slightly lower than the dip stick end of the pump to assure oil flow.



Figure 4.14 Recommended lifting point.

- 4.16 Pump the handle on the external pump until the Jack's saddle has nearly reached the vehicle lifting point.
  - **Note:** The pump can also be operated by holding on to the pump reservoir with one hand and the handle with the other, while the hose end is pointed down.
- 4.17 Check to see that the <u>saddle has full capture on the lift point</u>. If not, lower or raise the jack as required to reposition the jack to ensure full engagement between the saddle of the jack and the vehicle lift point.
- 4.18 Prior to lifting the vehicle, slightly l-o-o-s-e-n, but do not remove the 10 lug nuts on the affected wheel.

## Jacking Up the Vehicle.

- 4.19 To lift the vehicle, pump the handle on the external pump. Use smooth, full strokes for best results.
- 4.20 Raise the vehicle just enough to remove the damaged tire, finish removal of the lug nuts and remove the damaged tire.

WARNING!: <u>Never use the jack to raise a fully inflated replacement tire</u> more than 2 inches off the ground. For a flat or destroyed tire, only raise the vehicle enough to install the replacement tire.

WARNING!: Do not use the Jack to support a vehicle over extended periods of time. The duration of the lifting task should be kept to a minimum, just long enough to replace a tire. Always use jack stands to support a vehicle over an extended period of time. Failure to follow this instruction can result in severe injury or death to personnel.

4.21 Install the replacement tire and tighten the lug nuts. There may be a need to raise the vehicle higher to install the replacement tire. Adjust the jack height to align these holes and the tire will go on much easier.

## Follow the tightening sequence in the vehicle maintenance manual.

**USER NOTE:** It is much easier to install the replacement tire if the wheel studs are at the same height as the replacement tire bolt holes.

4.22 Ensure all tools and personnel are clear from beneath the vehicle. Ensure hydraulic hose is clear of wheel being lowered. As soon as possible notify unit maintenance to tighten lug nuts to proper torque.

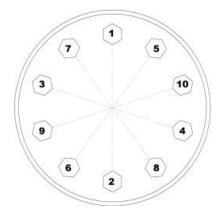


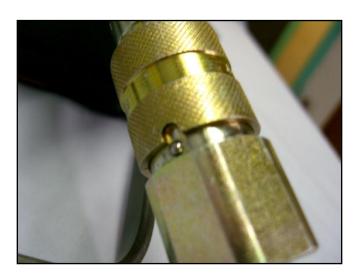
Figure 4.21 Lug Nut diagram

4.23 S-L-O-W-L-Y turn the pump valve control release knob counter clockwise of to lower the vehicle on to the ground. Rock the base plate up by lifting up at the base plate handle and then release. This will compress the jack enough to remove the jack from its lift point.

Note: Never allow the jack to lower suddenly. Slowly and carefully lower the load with your hand covering the pump valve control release knob in the event the lowering process must be halted. To stop the vehicle from lowering, turn the pump valve release knob clockwise to tighten.

## Lower the 88M-06-15-09 jack completely.

- 4.24 Disconnect the hose from the 88M-06-15-09 jack. To disconnect the hose, locate the rotating collar connected to the jack cylinder fitting. Line up the u-shaped slot to the pin. Then depress the slot into the pin to release the fitting.
- 4.25 Remove wheel chocks from the tire diagonal to the tire just changed.
- 4.26 Store the jack, pump, hose and wheel chocks in their designated locations on the vehicle.



## 5.0 RECEIVING AND GENERAL JACK INFORMATION

Ensure that no parts were damaged during shipping. Inventory the jack kit to ensure that all parts comprising the kit have been included.

## The 88M-MPBMI Kit includes:

PN 88M-MPM One Manual for the 88M-MPBMI Kit.

PN 88M-06-15-09A One 88M-06-15-09A Tire Replacement Jack.

PN BM-97-02-00-00 One base plate.

PN BMI-P40A One external hydraulic pump.

PN 30M-HV6 One 6-foot hydraulic hose with couplings. PN 88M-MPC One carry bag for all components above.

PN BM-8802-06-02-03 Jack Ram Extension.



No maintenance should be needed on this jack, with the exception of wiping debris from the jack after use. If any parts are missing or broken, call Bogert Manufacturing Inc. at 1+509-736-1512 or email info@bmihydraulics.com.

If any questions arise with any of the procedures outlined in this manual or in general or safety related questions in using this jack, please contact Bogert Manufacturing Inc. at telephone number 1+509-735-2106 or email info@bmihydraulics.com.

## 6.0 INSPECTION, CLEANING & MAINTENANCE WARNING!

All maintenance, service, or repairs not listed in this manual are only to be attempted by a qualified service technician.

If a problem occurs, have the problem corrected before further use.

## **CAUTION:**

Maintain labels and nameplates on the 88M-06-15-09 Jack. These carry important information. If unreadable or missing, contact Bogert Manufacturing Inc. for a replacement.

## 6.1 INSPECTION

- 6.1.1 Check for broken, cracked or bent parts. Do not use if broken, cracked or bent.
- 6.1.2 Check for loose or missing parts. Tighten as required.
- 6.1.3 Check welds and any condition that may affect the proper operation.
- 6.1.4 Check hose for damage.
- 6.1.5 Check for leaky fittings.

## 6.2 **CLEANING**

- 6.2.1 Use clean cloth with mild detergent to wipe debris.
- Do not use chemicals to clean the 88M-06-15-09 Jack or components.

## 6.3 MAINTENANCE

## 6.3.1 Purge Jack and Hose

6.3.1.1 To purge jack and hose simply pump the pump handle until the hydraulic cylinder on the 88M-06-15-09 has extended at least 3 inches. Tip the jack up on its nose until the hose fitting is pointing up. Turn the pump release ½ turn counter clockwise. Compress the jack forcing any air back to the pump. Turn release valve clockwise to close.

## 6.3.2 Fill Hydraulic Pump to Full Mark

6.3.2.1 The following is only a guide. Refer to pump manual for proper instructions. Check Pump Fluid Level. Check the pump fluid level by holding the pump with the hose end pointing down. Use a wrench to remove the uppermost plug in the pump end cap. The dip stick is attached to this plug. Remove the dip stick and wipe the oil from the stick. Replace the dip stick. Then remove and check dipstick for oil. If oil is present on

the stick, there is enough oil to operate the jack. If no oil is present add MIL PRF-46170D. In an emergency, any light oil will work.

- 6.3.3 Tighten Loose Screws
  - 6.3.3.1 Use Philips Head screw driver to hand-tight.
- 6.3.4 Tighten Hydraulic Fittings
  - 6.3.4.1 Use appropriate size wrench to tighten leaking or loose fittings.
- 6.3.5 Replace Damaged Hydraulic Fittings
  - 6.3.5.1 Use appropriate size wrench to remove damaged fitting.
  - 6.3.5.2 Use Teflon tape on all pipe threads. (2-4 wraps)
  - 6.3.5.3 Tighten to below specifications.
    - 6.3.5.3.1 Swivel to Jack 360 inch lbs. or 30 foot lbs.
    - 6.3.5.3.2 Coupling to Swivel 360 inch lbs. or 30 foot lbs.
  - 6.3.5.4 Check for operation.
  - 6.3.5.5 Tighten as necessary to ensure there are no leaks.
- 6.3.6 Replace Damaged Hose Assembly
  - 6.3.6.1 Use appropriate size wrench to remove damaged hose fitting.
  - 6.3.6.2 Use Teflon tape on all pipe threads. (2-4 wraps)
  - 6.3.6.3 Tighten to below specifications.
    - 6.3.6.3.1 Hose to Pump 240 inch lbs. or 20 foot lbs.
    - 6.3.6.3.2 Hose to Coupling 240 inch lbs. or 20 foot lbs.
  - 6.3.6.4 Check for operation
  - 6.3.6.5 Tighten as necessary to ensure there are no leaks.

## 6.4 PERIODIC MAINTENANCE

- 6.4.1 Once a month, make sure to thoroughly test the 88M-MPBMI Kit for proper operation.
- 6.4.2 Change the MIL-PRF-46170D hydraulic fluid at least once every year. To do so, refer to the proper manual that came with the external pump.

## 7.0 SAFETY LABELS ON JACK

Sample labels below.

It will be located at the bottom of the cylinder of 88M-06-15-09.

## CAUTION

Study, understand and follow all instructions before operating this device.

Never get beneath the vehicle when it is supported by the jack. Do not attempt lifting a wheel on a vehicle with either a front or rear axle weight exceeding 24,000 lbs. If jack is damaged do not reuse. Failure to heed these markings may result in personal injury and/or property damage.

## 8.0 WARRANTY

Bogert Manufacturing Inc. is your warranty agent for any and all items in the 88M-MPBMI Jack Kit. All components are warranted to be free of defects in materials and workmanship and carry a one year parts and labor warranty when used in accordance with the operating instructions and limitations. Any product that does not conform to specifications will be repaired or replaced. This warranty does not cover ordinary wear and tear, abuse, misuse, alterations, or the use of improper fluids.

Determination of the authenticity of a warranty claim will be made only by Bogert Manufacturing Inc. and original manufacturer of the warranty item. Contact Bogert Manufacturing Inc. 3606 N. Swallow Ave, Suite 200, Pasco, WA 99301. Phone Number: (509) 735-2106, Facsimile: (509) 272-0280. Email: info@bmihydraulics.com

## 9.0 REVISION CONTROL HISTORY RECORD

Rev Level	Date	Description	Approved	Page(s)
A	7JULY2011	Created Document		Entire Document

## Notice to reader

Jeens sidt ni noitemnotni bne atab edt to zzenetelqmoo ro yoshuoset. and of the date as of the date specified below. No warranty or representation, express or implied is made as to the All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information

other than for the stated application or applications without seeking advice from us. The data and advice given apply when the product is sold for the stated application or applications. You should not use the product

any hazards described in this sheet and of any precautions that should be taken. To be and vith the information in this sheet. Employers have a duty to tell employees and others who may be affected of ant gnisu no gnilbnard noerag yna tadt arusna ot eqate ynaseacy i la exact ot ytub a avad thag or using the any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for Group shall not be responsible for any damage or injury resulting from their than the stated brodict use of the material, from AB aAT . snoitelugar bne ewal aldasilqqa lla Atiw ylqmos ot bna ylates tsuborq ziAt azu bna ataliava ot noitagildo erazu aAt zi th

Page: 6/6

452702-US02

Product code

Format US

2.E.2 bliu8

Date of issue 08/13/2007.

Version 1

usme

Product Brayco Micronic 883

( ENGLISH

Language ENGLISH.

# 15. Regulatory information

United States inventory (TSCA 8b): All components are listed or exempted.

TSCA 12(b) one-time export notification:: alkyl phenol

. 355 than 1900 of SARA and 40 CFR Part 355.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Brayco

Micronic 883: Immediate (Acute) Health Hazard

ELE AAAS

Supplier notification

Form R - Reporting

requirements

U.S. Federal regulations

Substances

Product name Concentration 19dmun SAJ

Barium sulfonate 1-99-61997 326.1-878.1

Barium sulfonate 1-99-61997 226.1-678.1

regulated under CERCLA Sections 103 and 107. ton si Isinətem sidT ::(4.206 the Part 302.4):: This material is not

Massachusetts RTK: None of the components are listed. Massachusetts State regulations

MUIRAB: betsil erse stranger components are listed: BARIUM New Jersey Substances

Substances COMPOUND, n.o.s. Hazardous

Hazardous Pennsylvania RTK: The following components are listed: BARIUM COMPOUNDS Pennsylvania RTK

California Prop 65: No products were found

Canada inventory: All components are listed or exempted. Inventories

Europe inventory: All components are listed or exempted.

Australia inventory (AICS): All components are listed or exempted.

China inventory (IECSC): All components are listed or exempted.

Japan inventory (ENCS): All components are listed or exempted.

Korea inventory (KECI): All components are listed or exempted.

Philippines inventory (PICCS): All components are listed or exempted.

## 16. Other information

Label requirements WARNINGI

CAUSES SKIN IRRITATION. CAUSES EYE IRRITATION. HARMFUL IF INHALED. HARMEUL IF SWALLOWED.

Mational Fire Health MAY CAUSE RESPIRATORY TRACT IRRITATION.

Personal 8 (.A.2.U) Hazard Physical Association 0 Protection Flammability

protection

Date of issue .7002/81 History

Date of previous issue

Product Brayco Micronic 883

.7003/2007.

Page: 5/6 452702-US02 Product code

Health

Date of issue 08/13/2007.

Version 1

name

HMIS® Rating:

( ENGLISH

Language ENGLISH.

Specific hazard

Instability

Fire hazard

8.E.2 blina

Format US

# 10. Stability and reactivity

The product is stable.

produced.

Conditions to avoid

Stability and reactivity

Reactive or incompatible with the following materials: oxidizing materials. Incompatibility with Not available.

products Hazardous decomposition various substances

Hazardous polymerization Will not occur.

# 11. Toxicological information

Chronic toxicity

(AH2O) 15A d1l69H bns (1918) Safety and Health Act (OSHA). at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program or the International Agency for Research on Cancer (IARC). No component of this product present No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH

Under normal conditions of storage and use, hazardous decomposition products should not be

criteria as amutagen. No component of this product at levels greater than 0.1% is classified by established regulatory

No component of this product at levels greater than or equal to 0.1% is classified by established

No component of this product at levels greater than 0.1% is classified by established regulatory regulatory criteria as a reproductive toxin.

> effects Carcinogenic

Mutagenic

effects

effects

Reproductive SJJ9H9

criteria as teratogenic or embryotoxic. Teratogenic

12. Ecological information

Ecotoxicity

No testing has been performed by the manufacturer.

# 13. Disposal considerations

national regulations. treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, environmental professional to determine if local, regional or national regulations would classify Avoid contact of spilled material and runoff with soil and surface waterways. Consult an

Remarks

Waste information

banned by federal law (40 CFR 268). in accordance with local, state and federal regulations. Disposal of this material to the land may be soak up spill with inert absorbent. Store in a closed container and dispose of property. Dispose of water. Where feasible and appropriate, remove contaminated soil. Small spills: Neutralize and/or such as clay, sand or other suitable materials; Store and dispose of properly. Flush area with spill and recover free liquid. Prevent entry into waterways. Soak up residue with an inert absorbent Large spills: wear appropriate protective clothing. Stop source of leak if possible. Dike, contain

Consult your local or regional authorities.

# 14. Transport information

Not classified as hazardous for transport (DOT, TDG, IMO/IMDG, IATA/ICAO)

Language ENGLISH. Version Format US Date of issue 08/13/2007. ugwe Product Brayco Micronic 883 Page: 4/6 452702-US02 Product code

ENGLISH

6.8.3 bliu8

# 7. Handling and storage

industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest Wash thoroughly after handling. Use only with adequate ventilation in accordance with good skin. Avoid contact with eyes. Avoid breathing vapor or mist. Do not breathe vapor or mist. Do not ingest. Avoid contact with skin and clothing. Avoid prolonged or repeated contact with

extent practicable.

hazards.

Weld, reuse or dispose of confainers unless adequate precautions are taken against these may contain harmful, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, Keep confainer tightly closed. Keep container in a cool, well-ventilated area. Empty containers

Storage

Handling

8. Exposure controls/personal protection

Occupational exposure

siimil

Ingredient name

Barium sulfonate

Some states may enforce more stringent exposure limits. None assigned.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne Control Measures

extent practicable. industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest concentrations below their respective occupational exposure limits. In accordance with good

Occupational exposure limits

smoking and using the lavatory and at the end of the working period. Wash hands, forearms and face thoroughly after handling chemical products, before eating,

Personal protection

Eyes

Hygiene measures

Avoid contact with eyes. Safety glasses with side shields or chemical goggles.

Avoid contact with skin and clothing. Wear suitable protective clothing.

Use only with adequate ventilation

Wear suitable gloves. Respiratory

Hands

Skin and body

# Consult local authorities for acceptable exposure limits.

# 9. Physical and chemical properties

.biupid

Mild. Petroleum

.19dmA

Heat of combustion Not available. Color

J. 79-

Pour Point

Odor

Physical state

Specific gravity **68.0** 

Density

850 kg/m³ (0.85 g/cm³) at 15.6°C

Date of issue 08/13/2007.

Solubility Insoluble in water.

3°001 1s (125 4.£) s\4mm 4.£ :5ilsm9niX Viscosity 3°04 16 (125 6.91) 8\square mm 2.91 :5i1sm9niX

usme Product Brayco Micronic 883

Version 1

Product code

Format US

Language ENGLISH.

452702-US02

( ENGLISH

Page: 3/6

2.8.2 bliu8

Harmful if inhaled. May cause respiratory tract irritation.

Harmful if swallowed.

aggravated by over-Medical conditions

noitsagnl

Inhalation

.bəififnəbi ənoM

See toxicological Information (section 11).

# 4. First aid measures

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical

attention immediately.

skin requires immediate medical attention. before reuse. Get medical attention immediately. Accidental high pressure injection through the removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes In case of contact, immediately flush skin with plenty of water for at least 15 minutes while Inhalation

Skin contact

Eye contact

exposure

give oxygen. Get medical attention. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult,

mouth to an unconscious person. Get medical attention if symptoms appear. If large quantities of Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by

noitesfion

product

this material are swallowed, call a physician immediately.

# Fire-fighting measures

May be combustible at high temperature.

Flash point

Flammability of the

sulfur oxides carbon oxides These products are

metal oxide/oxides

Products of combustion

This material is not explosive as defined by established regulatory criteria.

218°C (Open cup) Cleveland.

pazards Unusual fire/explosion

In case of fire, use water fog, foam, dry chemicals, or carbon dioxide. Do not use water jet.

instructions Fire-fighting media and

Protective clothing (fire)

turnout gear. Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full

Personal precautions

# Accidental release measures

fighting procedures (See Section: "Fire-fighting measures"). protective equipment (See Section: "Exposure controls/personal protection"). Follow all fire Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable

precautions and clean-up Environmental

entering surface waterways. See Section 13 for Waste Disposal Information. appropriate container for disposal. Avoid contact of spilled material with soil and prevent runoff contain material to ensure runoff does not reach a waterway. Place spilled material in an sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise (soil may be used in the absence of other suitable materials) scoop up material and place in a If emergency personnel are unavailable, contain spilled material. For small spills add absorbent

spoulem

be sufficient; consult a specialist BEFORE handling this product. Vapor respirator or a self-contained breathing apparatus. Suggested protective clothing might not Chemical splash goggles. Chemical resistant protective suit. Boots. Chemical resistant gloves.

case of a large spill Personal protection in

known, or if concentrations exceed the protection limits of air-purifying respirator. air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure

452702-US02 Product code

ugwe Product Brayco Micronic 883

Language ENGLISH.

( ENGLISH

Page: 2/6

Date of issue 08/13/2007.

Version

8.E.2 bliu8

Format US



## Material Safety Data Sheet

## Chemical product and company identification

Brayco Micronic 883 Product name

452702 # SOSW

WA-01072, £241000000

452702-US02 Sode

Hydraulic fluid Product use

representative. For specific application advice see appropriate Technical Data Sheet or consult our company

Brayco Micronic 883 (Type I) Synonyms

Castrol Industrial Morth America, Inc. Manufacturer

Naperville, IL 60563 150 W. Warrenville Road

Castrol Industrial Morth America, Inc. Supplier

150 W. Warrenville Road

Naperville, IL 60563

Product Information: 1-800-621-2661

1 (800) 424-9300 CHEMTREC (USA) **EWERGENCY SPILL** 

INFORMATION:

Historic MSDS #:

## Composition/information on ingredients

9-1 % CAS# Ingredient name

1-99-61997 Barium sulfonate

## Hazards identification

Liquid. Physical state

Amber.

Color

**WARNING!** Emergency overview

HARMFUL IF SWALLOWED.

HARMFUL IF INHALED.

CAUSES SKIN IRRITATION. CAUSES EYE IRRITATION.

MAY CAUSE RESPIRATORY TRACT IRRITATION.

practices, airborne exposures should be controlled to the lowest extent practicable. Keep container Use only with adequate ventilation in accordance with good industrial hygiene and safety work defat the skin and lead to irritation, cracking and/or dermatitis. Wash thoroughly after handling. Do not ingest. Avoid contact with eyes, skin and clothing. Prolonged or repeated contact can

Dermal contact. Eye contact. Inhalation. Ingestion. Routes of entry

Potential health effects

\ rois₁eV

Causes eye irritation. Eyes

Date of issue 08/13/2007.

and/or dermatitis. High pressure skin injections are serious medical emergencies. Injury will not Causes skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation **2Kin** 

painful. appear serious at first; within a few hours, tissue will become swollen, discolored and extremely

Product Brayco Micronic 883 452702-US02 Product code

( ENGLISH )

Language ENGLISH.

Page: 1/6

8.8.8 bliu8

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HOOTING	Possible Cause	Problem
1. Add oil according to the Maintenance instructions on page 8, section 8.1	1. Oil level in pump reservoir is low or over full	
2. Close the release valve.	2. Release valve is open.	Cylinder does not
3. Check that all couplers are fully tightened.	3. Loose hydraulic coupler.	advance, advances slowly, or
4. Do not attempt to lift more than rated tonnage.	4. Load is too heavy.	advances in spurts.
5. Remove air according to instructions, section 7.0	5. Air trapped in system.	
6. Check for damage to cylinder. Have cylinder serviced by a qualified hydraulic technician.	6. Cylinder plunger binding.	
1. Check that all connections are tight and leak free.	1. Leaking connection.	Cylinder advances,
2. Locate leak(s) and have equipment serviced by a Qualified hydraulic technician.	2. Leaking seals in hydraulic device.	bressure
3. Have pump serviced by qualified hydraulic technician.	3. Internal leakage in pump.	
4. Finger tighten release valve.	4. Loose release valve	
1. Open release valve.	1. Release valve closed.	
Drain oil level to full mark. See section 8.4 instructions for adding oil.	2. Pump reservoir is over-filled	Cylinder does not retract, retracts part way, or
3. Check that all couplers are fully tightened.	3. Loose hydraulic coupler.	retracts more slowly than
4. Remove air according to the instructions section 7.0.	4. Air trapped in system.	normal
5. Use larger diameter hydraulic hose.	5. Hose I.D. too narrow.	
6. Have cylinder serviced by a qualified hydraulic technician	6. Cylinder retraction spring broken or other cylinder damage.	

## JAVOMBR REMOVAL

Removing air from the hydraulic system will help the cylinder to advance and retract smoothly.

### Pump with Single-Acting Cylinder 1.7

- Vent pump reservoir (for vented pumps only) and close release valve.
- 2. Position pump at higher elevation than cylinder.
- .ε Position cylinder with the plunger end down and hydraulic connector up.
- Operate pump to fully extend the cylinder (retract if using pull cylinder). 4.
- Open release valve to retract cylinder (extend if a pull cylinder). This will force the .∂
- trapped air to move up to the pump reservoir.
- Add oil if necessary. See Instructions 8.1 Adding Oil to the Pump. ٦. Repeat the above steps as necessary. .9
- Return vent/fill cap to operating position

## 8.0 MAINTENANCE

Use only MIL-PRF-46170D hydraulic oil with these pumps to promote long pump life and to protect

your warranty.

### Adding Oil to the Pump 1.8

Check oil level regularly

the reservoir can hold. (extended if pull cylinders) or the system will contain more oil than WARNING: Always add oil with cylinders fully retracted

- Remove vent/fill cap from reservoir.
- Fill reservoir only to level mark shown on the dipstick.
- air from system. Recheck oil level after removing air. Remove air from system if necessary. See 7.0 Air Removal for instructions on removing .ε
- Return vent/fill cap to proper position. .4
- from flowing out of the pump. properly. If the reservoir is over filled, a vacuum will form preventing oil NOTE: Non-vented hand pumps require air in the reservoir to function

### Keeping Oil Lines Clean 2.8

guard unit against entrance of dirt because foreign matter may cause pump, cylinder, or valve When coupler halves are disconnected, always screw on dust caps. Use every precaution to

### Lubricating the Pump £.8

regularly using silicon spray lubrication. See Parts List for diagram. linkage assembly (14-000), Pump Handle Assembly (09-001) and Piston Assembly (08-001) wet environment may extend pump life and improve performance. Lubricate the cross pin or dirty environment can collect dirt and speed up the wear process. Lubrication in a clean or No lubrication of the pump handle, piston or linkage is required. Adding oil or grease in a sandy

### Changing the Oil 4.8

- is used in dirty environments, change the oil more often. Drain all oil and refill with clean MIL-PRF-46170D hydraulic oil every 12 months. If pump ٦.
- 2. Remove vent/fill cap or plug from reservoir.
- .ε Tilt pump to drain out old oil.
- Fill reservoir only to level mark shown on pump. ٦.
- Replace the vent/fill cap or plug. .∂
- Dispose of used oil properly.

## 9.0 TROUBLESHOOTING GUIDE

## **NOITARAGO 0.8**

### Before Using the Pump ١.3

- Check oil level in reservoir before operating pump. See "Adding Oil to the Pump" on 1. Check all system fittings and connections to be sure they are tight and leak free.
- Page 8, section 8.1.

cause unstable pump operation. CAUTION: NEVER add extensions to pump handle. Extensions

the line of force of the handle. back". Always keep your body to the side of the pump, away from WARNING: In certain situations the pump handle can "kick

Maximum leverage is obtained in the last 5° of stroke. NOTE: To reduce handle effort at high pressure, take short strokes.



## Release Valve 6.2 Single-Acting Applications with

clockwise, Oas shown below. 1. Close Release valve by turning

to malfunction. damage it and cause the pump tools on release valve can valve finger tight ONLY. Using CAUTION: Close release

hydraulic power to system. Pressure will be maintained until release valve is opened. Operate pump handle to deliver

Open release valve (turn counter-clockwise) % turn  $\mho$  to release pressure, allowing oil to .ε

## flow back to the reservoir.

pressure relief valve should not be adjusted by anyone other than a qualified hydraulic Lower pressure settings can be obtained. Contact BMI Hydraulic Technologies. The All pumps contain a factory set relief valve to prevent over-pressurization of the system. Relief Valve Adjustment

technician.

€.3

**ALIMPORTANT:** Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Authorized BMI Hydraulic Technologies Service Center in Pasco, Washington. To protect your warranty, use only MIL-PRF-46170D hydraulic oil.

**WARNING:** Immediately replace worn or damaged parts with genuine BMI Hydraulic Technologies parts. Standard grade parts will break causing personal injury and property damage. BMI Hydraulic Technologies parts are designed to fit properly and withstand high loads.

Carrying the pump by the hose may damage the hose and/or the pump.

MARNING: These pumps are operated with a non-vented reservoir. If the reservoir is subjected to high pressure, the casing may rupture, causing personal injury and/or equipment damage. NEVER attempt to return more oil to the reservoir than it is capable of holding.

## 4.0 SPECIFICATION 4.0 Model

JW JinU lio djiw		-	ldsaU sqsD	Dever ort		Volume & Pressure		Stage	# ləboM	
κд	sql	oiduo ereters	oiduo eadoni	κд	sql	Bar	ISd	ber stroke Volume		
2.4	<b>7</b> .6	896	69	24.5	<b>7</b> 9	002	000,01	ni uo 331.	9lgniS 1	A049

**NOTE:** Output pressure of the P40A has been set not to exceed 7,000 psi for use with the Jack Kit. Adjusting the pressure above the factory setting may cause damage to the jack, hose or couplings. It will void warranty.

## NOITALLATON 0.8

## 5.1 Connecting the Pump

- 1. Thread hose into pump outlet. Use 2 4 wraps of Teflon tape (or suitable thread sealant) on hose fitting, leaving the first complete thread free of tape to ensure that tape does not shed into hydraulic system, causing damage. Trim loose ends.
- 2. Install a pressure gauge in-line from the pump for added safety and better control.
- 3. Connect the hose(s) to your cylinder or tool.

NOTE: For single acting cylinders, connect one hose from the pump to the cylinder.

## 5.2 Pump Venting

Pump model P40A uses a non-vented reservoir. The pump should never be over filled. It is vital that the pump reservoir has the correct air volume for proper operation. Should the pump "act slow" to move fluid it may mean that the reservoir is under some vacuum. Open the release valve until the pressure drops to zero. With the fill/vent plug pointing up, slowly remove the fill/vent plug and use the attached dip stick to check the fluid level. Adjust fluid level to full and reinstall the fill/vent cap. Note: If there is oil shown on the dipstick, there is adequate oil.

## 6.3 Pump Position

The BMI-P40A pump may be operated both horizontal and vertical (pump head down)

.noitisoq

DANGER: Never set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury. Do not remove relief valve.

WARNING: The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure. It is your window to what is happening in the system.

CAUTION: Avoid damaging the hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back pressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.

Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.

IMPORTANT: Do not lift hydraulic equipment by the hoses or swivel couplers. Use the carrying handle or other means of safe transport.

CAUTION: Keep hydraulic equipment away from flames and heat. Excessive heat will soften packings and seals, resulting in fluid leaks. Heat also weakens hose materials and packings. For optimum performance do not expose equipment to temperatures of 65.5 °C [150 °F] or higher. Protect hoses and cylinders from weld spatter.

DANGER: Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.

**WARNING:** Only use hydraulic cylinders in a coupled system. Never use a cylinder with unconnected couplers. If the cylinder becomes extremely overloaded, components can fail catastrophically causing severe personal injury.

WARNING: BE SURE SETUP IS STABLE BEFORE LIFTING LOAD. Cylinders should be placed on a flat surface that can support the load. Where applicable, use a cylinder base for added stability. Do not weld or otherwise modify the cylinder to attach a base or other support.

AVOID situations where loads are not directly centered on the cylinder plunger. Off center loads produce considerable strain on cylinders and plungers. In addition, the load may slip or fall, causing potentially dangerous results.

**DISTRIBUTE** the load evenly across the entire saddle surface. Always use a saddle to protect the

## 2.0 IMPORTANT RECEIVING INSTRUCTIONS

costs resulting from damage in shipment. shipping damage is found, notify carrier at once. The carrier is responsible for all repair and replacement Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If

## SAFETY FIRST

## 3.0 SAFETY ISSUES

BMI Hydraulic Technologies precautions and operations. If you have never been trained on high-pressure hydraulic safety, consult product and/or system operation. Contact BMI Hydraulic Technologies when in doubt as to the safety responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect personal injury or property damage during system operation. BMI Hydraulic Technologies cannot be Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid

Failure to comply with the following cautions and warnings could cause equipment damage and personal

damage to, or destruction of equipment or other property. A CAUTION is used to indicate correct operating or maintenance procedures and practices to prevent

.yanlaı A WARNING indicates a potential danger that requires correct procedures or practices to avoid personal

A DANGER is only used when your action or lack of action may cause serious injury or even death.



WARNING: Wear proper personal protective gear when operating hydraulic equipment.

always be blocked mechanically with jack stands. device, <u>should never be used as a load holding device</u>. After the load has been raised or lowered, it must WARNING: Stay clear of loads supported by hydraulics. A cylinder, when used as a load lifting

lifting or pressing application. WARNING: USE ONLY RIGID PIECES TO HOLD LOADS. Carefully select jack stands, steel or wood block capable of supporting the load. Never use a hydraulic cylinder as a shim or spacer in any

work piece during operation. DANGER: To avoid personal injury keep hands and feet away from cylinder and

the hydraulic system. Do not connect a jack or cylinder to a pump with a higher pressure rating. pressure ratings of all components. Never exceed the pressure rating of the lowest rated component in capacity of the cylinder. Overloading causes equipment failure and possible personal injury. Check the \*\*MARNING: Do not exceed equipment ratings. Never attempt to lift a load weighting more than the

## hydraulic technologies

## 4.0 PARTS LIST FOR BMI-PA40A HAND PUMP

01-000 Pump Head

003 Outlet Valve Ball Check 002 Outlet Valve Spring 02-001 Outlet Valve Set Screw

003 Inlet Valve Ball Check 902 Inlet Valve Spring 03-001 Inlet Valve Set Screw

04-000 NPT Screen Filter

003 Release Valve Ball Check 002 Release Valve O-Ring 05-001 Release Valve Stem & Wheel

metS evisV felief Valve Stem

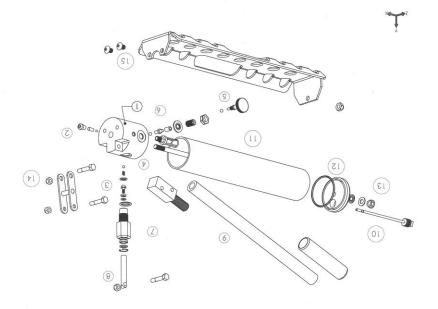
006 Relief Valve Lock Mut 004 Relief Valve Ball Check 003 Relief Valve Spring 002 Relief Valve Screw

005 Cylinder Gland Retainer Washer 004 Cylinder Gland Seal 003 Pump Cylinder 002 Cylinder Body O-Ring 07-001 Cylinder Bottom O-Ring

006 Cylinder Gland Seal Snap Ring

004 Wear Ring 003 Piston PolyPak Seal 002 Piston Lower Body PolyPak Retainer Screw 08-001 Piston Upper Body

003 Handle Grip 002 Pump Handle End 09-001 Pump Handle



10-001 Dipstick

11-001 Reservoir

12-001 End Cap

002 End Cap O-Ring Seal

002 Link Plate 14-001 Cross Pin 104 Tie Rod Flange Nut 103 Tie Rod Acorn Mut 002 Tie Rod Thread Seal 13-001 Tie Rod

002 Base Plate Front Mounting Bolts 15-001 Base Plate

003 Link Plate Bolt and Nut

BMI Hydraulic Technologies at (509) 735-2106. Repair Parts Sheets for this product are available from

## Table of Contents

6	LKOOBLESHOOTING GUIDE	0.6
8	WAINTENANCE	0.8
8	VIEW REMOVAL	0.7
L	OPERATION	0.8
9	INSTALLATION	0.2
9	SPECIFICATIONS	0.4
<i>t</i>	SVŁLEK ISZNES	3.0
<i>t</i>	IMPORTANT RECEIVING INSTRUCTIONS	0.2
ε	PARTS LIST FOR BMI-P40A	0.1



## Operation Manual & Parts List BMI-P40A



To Protect Your Warranty, Use Only MIL-PRF-46170D Hydraulic Oil.

JW JinU lio dJiw		ole Oil acity	•	/er	nsH /el Han	ILG	ussə19 &	əmuloV	Stage	#ləboM
	- 11	cubic	cupic		- "		100	€mulo√	_	
кd	sqı	meters	səyoui	Кĝ	sql	Bar	ISd	ber stroke		
4.2	4.6	12T000.	77	24.5	<b>7</b> 9	007	000,01	ni uɔ ♂♂1.	əlgni2 1	A049

BMI Hydraulic Technologies 3606 N Swallow Ave Suite 200 Pasco, WA. 99301 800 627-8088 (toll free) (509) 735-2106 (direct line) (509) 272-0280 (fax)