



Date _____

Application Data Sheet

(for Brake Valve Systems)

Confidential
 You incur no obligation by submitting this data and the non-public information provided will be held in confidence by ZF.

Name _____ Title _____
 Company _____
 Address _____ City _____ State _____ Zip _____
 Fax _____ Phone _____ Country _____
 Email _____

Are you currently working with a ZF Off-Highway Distributor? Yes No If yes, which one and who is the contact? _____

Estimated Annual Quantity _____

Is this a military application? Yes No If yes, what is the destination country? _____

Is this an underground coal mine application? Yes No

HYDRAULIC SYSTEM CHARACTERISTICS

Attach any available hydraulic system schematics relevant to full power actuation circuits.

Maximum pump flow _____ Minimum pump flow _____
 Pump type: Gear Vane Piston Manufacturer and model number _____
 Load Sensing: Yes No Standby _____
 Internal bleed down: Yes No Relief valve _____
 Oil names and numbers _____ Filtration _____ microns
 Operating temperature range: Minimum _____ Normal _____ Maximum _____
 Flow required for components other than brake valve _____
 What is the function of other components? _____

VEHICLE SPECIFICATIONS

Type of vehicle or machine _____ Name and model number _____
 Gross vehicle weight _____ Empty vehicle weight _____
 Weight distribution loaded: front _____ or % rear _____ or %
 Rolling radius: front _____ rear _____
 Maximum loaded speed (level) _____ Maximum grade in favor of load _____ %
 Rate of deceleration desired: Stop in _____ from _____ or _____
 Is this application required to conform with recommended practices or standards, if so which ones? _____

SPECIFICATIONS MOBILE EQUIPMENT

Duty cycle _____
 Type of brake actuation: Hydraulic Mechanical Air Spring set hydraulic release
 Other _____
 System fluid used: DOT 3 or 4 brake fluid Mineral oil base Water base Synthetic base
 Fluid manufacturer and brand name _____ Continue . . .



ZF Off-Highway Solutions Minnesota Inc.

1911 Lee Boulevard / North Mankato, MN U.S.A. 56003-2507

Tel: +1 507 625 6426

Fax: +1 507 625 3212

BRAKE VALVE REQUIREMENTS

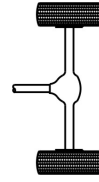
Attach any available brake performance specifications.

Brake type Caliper Drum In axle Number per vehicle _____

Self adjusting: Yes No

Indicate brake relation within axle to gear train (use diagram):

- Brake mounted on driveline
- Brake mounted between differential and planetary ratio
- Brake wheel end out board of planetary ratio



_____ Overall ratio
_____ Differential ratio
_____ Planetary ratio

Caliper brake characteristics:

Piston diameter _____ Number of pistons per caliper side _____

Maximum stroke _____, or area _____

Piston pretravel _____ to contact disc

Maximum allowable pressure _____ Rotor diameter _____

Volume requirements (per brake):

New lining _____ maximum Worn lining _____ maximum

Brake torque capacity (per brake): _____ at _____

Manufacturer _____ Model number _____

Drum brake characteristics:

Type _____ Brake size (diameter and width) _____ x _____

Wheel Cylinder: Diameter _____ Number _____

Piston travel _____ to contact drum

Actuation volume requirements (per brake):

New lining _____ maximum Worn lining _____ maximum

Brake torque capacity (per brake): _____ at _____

Maximum allowable pressure _____

Manufacturer _____ Model number _____

In Axle brake characteristics:

Maximum allowable pressure _____

Axle manufacturer _____ Axle model number _____

Brake type: Dry Multiple Disc Wet Multiple Disc

Actuation volume requirements (per axle):

New lining _____ maximum Worn lining _____ maximum

Brake torque capacity (per brake): _____ at _____

Required number of vehicle stops without main hydraulic system pressure _____

Type of fluid used with brakes _____

Comments:

Proposals will be made on the basis of the information provided. Subsequent customer engineering changes affecting the above could make our proposal invalid.

NOTICE

Component and system recommendations made by ZF Off-Highway Solutions Minnesota Inc. are based on information supplied by you. ZF does not independently confirm or test information supplied, or test the applicability of components or system recommendations. All recommendations are based on theoretical application of ZF Off-Highway Products based on the information you provide. Actual results may vary based on actual use conditions or inaccuracies in provided information. You must finally accept and approve recommended components and systems after you test the performance of the recommended system and components in actual applications for which the system was designed and in which it is operated. ZF Off-Highway reserves the right to reject any orders for components and systems not so accepted and approved. No component or system recommendation is intended to be or shall be construed as an express warranty by ZF Off-Highway Solutions Minnesota Inc. All ZF Off-Highway Products and services are sold and provided subject to the ZF Warranties set forth at www.mico.com in effect on the date of sale or supply.