

August 03, 2023

**Attention:** Cecylia Garbacz  
TECHNICAL STANDARDS & SAFETY AUTHORITY  
345 CARLINGVIEW DRIVE  
TORONTO, ON M9W 6N9

The design submission, Tracking Number 2023-03619, Web Portal Number 2023-S2215, originally received on June 08, 2023 was surveyed and accepted for registration as follows:

**CRN :** 0F07953.52 **Accepted on:** August 03, 2023  
**Reg Type:** RENEWAL **Expiry Date:** May 15, 2033  
**Drawing No. :** SCOPE OF REGISTRATION  
**Fitting type:** EXTERNAL CAGE  
Design registered in the name of : PSB%

**The registration is conditional on your compliance with the following notes:**

- \*\* This is a 10-year renewal, with addition of the Top Mount Displacer Operated Magnetic Level Switch
- \*\* Catalogue JS-100.03/04/05/07/09
- \*\* A minimum of 5% of all circumferential butt welds shall be radiographed per the requirements of ASME B31.3 paragraph 341.4.1(b)
- \*\* Additional NDE examination shall be performed per Table 136.4.1-1 of the ASME B31.1 Code

As indicated on AB-41 Statutory Declaration or AB-351 Declaration of Conformity form and submitted documentation, the code of construction are ASME B31.1 and ASME B31.3.

- It is our understanding that the fitting(s), included as the scope of this submission, that is(are) subject to the Safety Codes Act shall comply with the requirements of the indicated Standard or Code of Construction on the AB-41 Statutory Declaration or AB-351 Declaration of Conformity as supported by the attached data which identifies the dimensions, materials of construction, press./temp. ratings and the basis for such ratings, and the identification marking of the fittings.
- This registration is valid only for fittings fabricated at the location(s) covered by the QC certificate attached to the accepted AB-41 Statutory Declaration or AB-351 Declaration of Conformity form.
- This registration is valid only until the indicated expiry date and only if the Manufacturer maintains a valid quality management system approved by an acceptable third-party agency, and maintains a valid Certification of Authorization Permit if required by the jurisdiction where manufacturing takes place, until that date.
- Should the approval of the quality management system lapse before the expiry date indicated above, this registration shall become void.

An invoice covering survey and registration fees will be forwarded from our Revenue Accounts.

If you have any question don't hesitate to contact me by phone at (780) 433-0281 ext 3337 or fax (780) 437-7787 or e-mail Dick@absa.ca.

Sincerely,



the pressure equipment safety authority

9410 - 20 Ave N.W.

Edmonton, Alberta, Canada T6N 0A4

Tel: (780) 437-9100 / Fax: (780) 437-7787

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August 03, 2023

A handwritten signature in black ink, appearing to read 'Tik Ashling'. The signature is fluid and cursive, written over a white background.

POON, ASHLING, P. Eng.

DOP Cert. No. D00007936

Related Brochure	Product Series					
	Carbon Steel	Stainless Steel	Chrome Moly (1-1/4Cr - 1/2Mo)	Chrome Moly (9Cr - 1Mo)	Chrome Moly (2-1/4Cr - 1Mo)	Chamber Size
JS-100.03	JBC1F-	JBS1F-	JBH1F-	JB1F-	JBK1F-	3"S40 Pipe
	JBC2F-	JBS2F-	JBH2F-	JB2F-	JBK2F-	4"S40 Pipe
	JBC3F-	JBS3F-	JBH3F-	JB3F-	JBK3F-	4"S40 Pipe
	JBC4F-	JBS4F-	JBH4F-	JB4F-	JBK4F-	4"S40 Pipe
	JBC5F-	JBS5F-	JBH5F-	JB5F-	JBK5F-	5"S40 Pipe
	JBC6F-	JBS6F-	JBH6F-	JB6F-	JBK6F-	6"S40 Pipe
	JBC7F-	JBS7F-	JBH7F-	JB7F-	JBK7F-	6"S40 Pipe
	JBC8F-	JBS8F-	JBH8F-	JB8F-	JBK8F-	6"S40 Pipe
	JBC9F-	JBS9F-	JBH9F-	JB9F-	JBK9F-	8"S40 Pipe
	JXC1F-	JXS1F-	JXH1F-	JX1F-	JXK1F-	3"S40 Pipe
	JXC2F-	JXS2F-	JXH2F-	JX2F-	JXK2F-	4"S40 Pipe
	JXC3F-	JXS3F-	JXH3F-	JX3F-	JXK3F-	4"S40 Pipe
	JXC4F-	JXS4F-	JXH4F-	JX4F-	JXK4F-	4"S40 Pipe
	JXC5F-	JXS5F-	JXH5F-	JX5F-	JXK5F-	4"S40 Pipe
	JXC6F-	JXS6F-	JXH6F-	JX6F-	JXK6F-	6"S40 Pipe
	JXC7F-	JXS7F-	JXH7F-	JX7F-	JXK7F-	6"S40 Pipe
	JXC8F-	JXS8F-	JXH8F-	JX8F-	JXK8F-	6"S40 Pipe
	JXC9F-	JXS9F-	JXH9F-	JX9F-	JXK9F-	8"S40 Pipe
JS-100.07	JHC8F-	JHS8F-	JHH8F-	JHJ8F-	JHK8F-	5"S40 Pipe
	JHC9F-	JHS9F-	JHH9F-	JHJ9F-	JHK9F-	5"S80 Pipe
	JHC10F-	JHS10F-	JHH10F-	JHJ10F-	JHK10F-	6"S160 Pipe
	JHC11F-	JHS11F-	JHH11F-	JHJ11F-	JHK11F-	3"XXH Pipe
	JHC11F-	JHS11F-	JHH11F-	JHJ11F-	JHK11F-	6"XXH Pipe
	JHC12F-	JHS12F-	JHH12F-	JHJ12F-	JHK12F-	3"XXH Pipe
	JHC12F-	JHS12F-	JHH12F-	JHJ12F-	JHK12F-	6"XXH Pipe
	JHC13F-	JHS13F-	JHH13F-	JHJ13F-	JHK13F-	3"XXH Pipe
JHC13F-	JHS13F-	JHH13F-	JHJ13F-	JHK13F-	6"XXH Pipe	
JS-100.09	JHC1F-	JHS1F-	JHH1F-	JHJ1F-	JHK1F-	3"S40 Pipe
	JHC2F-	JHS2F-	JHH2F-	JHJ2F-	JHK2F-	4"S40 Pipe
	JHC3F-	JHS3F-	JHH3F-	JHJ3F-	JHK3F-	4"S40 Pipe
	JHC4F-	JHS4F-	JHH4F-	JHJ4F-	JHK4F-	4"S40 Pipe
JS-100.04	JBC1D-	JBS1D-	JBH1D-	JB1D-	JBK1D-	3"S40 Pipe
	JBC3D-	JBS3D-	JBH3D-	JB3D-	JBK3D-	3"S40 Pipe
	JBC4D-	JBS4D-	JBH4D-	JB4D-	JBK4D-	3"S40 Pipe
	JBC5D-	JBS5D-	JBH5D-	JB5D-	JBK5D-	3"S80 Pipe
	JBC6D-	JBS6D-	JBH6D-	JB6D-	JBK6D-	4"S160 Pipe
	JXC1D-	JXS1D-	JXH1D-	JX1D-	JXK1D-	3"S40 Pipe
	JXC3D-	JXS3D-	JXH3D-	JX3D-	JXK3D-	3"S40 Pipe
	JXC4D-	JXS4D-	JXH4D-	JX4D-	JXK4D-	3"S40 Pipe
	JXC5D-	JXS5D-	JXH5D-	JX5D-	JXK5D-	3"S80 Pipe
	JXC6D-	JXS6D-	JXH6D-	JX6D-	JXK6D-	4"S160 Pipe
JS-100.05	JDC1D-	JDS1D-	JDH1D-	JDX1D-	JDK1D-	N/A
	JDC2D-	JDS2D-	JDH2D-	JDX2D-	JDK2D-	N/A
	JDC3D-	JDS3D-	JDH3D-	JDX3D-	JDK3D-	N/A
	JDC8D-	JDS8D-	JDH8D-	JDX8D-	JDK8D-	N/A

See Catalogues for pressure-temperature ratings, and it may be further limited per the pressure rating of the mounting Flanges.

THIS IS PART OF CRN  
0F7953.5R2  
Technical Standards and Safety Authority  
Boilers and Pressure Vessels Safety  
Program

mounted with  
ANSI Flange

2023-08619  
**ABSA**  
SAFETY CODES ACT - PROVINCE OF ALBERTA  
ACCEPTED: **CF07953.52**  
See acceptance letter for  
conditions of registration.  
Date: 2023-08-03 By: *T. Ashling*  
ASHLING POOL & ENG.  
DOP: D0007953

This stamp and signature have been affixed electronically to this registered design as required by Section 20(1) of the Pressure Equipment Safety Regulation, in accordance with the Electronic Transactions Act.

# Jerguson's Tri-Magnet Level Switches deliver failure-free performance.



(Series JX)

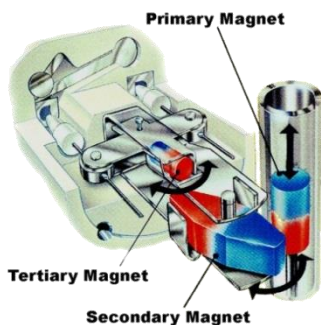


(Series JB)

The innovative use of repelling magnetic fields eliminates springs and other mechanical elements that are prone to failure in high temperatures, extreme vibration, or simply fatigue over time.

## FEATURES

- Tri-Magnet Switching for Unparalleled Reliability
- Vibration Resistant
- Sealed or Flanged Cage
- 316 Stainless Steel Trim
- ASME B31.1 & B31.3 Design



**Unique 3 magnet latching.  
No springs...No problem.**

*"The new switches are very rugged and dependable, and most importantly, they are mercury-free and safe for the environment. Dealing with spilled mercury is an extremely difficult task, but it is one we don't have to worry about with these new switches. The Jerguson Tri-Magnet Level Switches have been in operation in our facility since May 2007."*

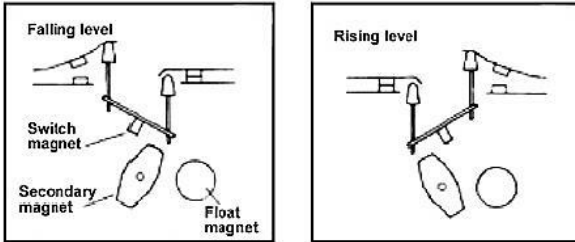
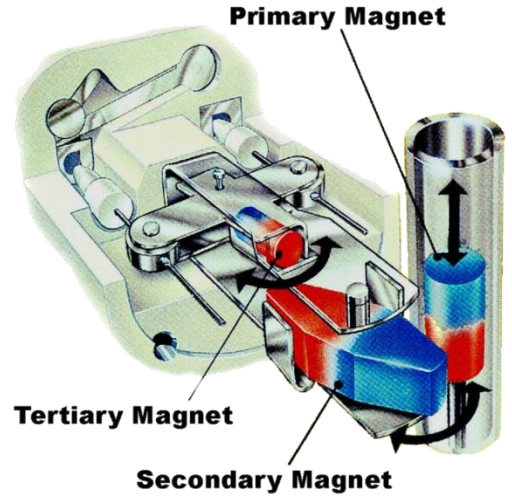
*-Maintenance Superintendent,  
Major Utility Power Generation Plant*

**The Tri-Magnet Level Switch was endurance tested to over 850,000 cycles without failure.**

# JERGUSON® LEVEL SWITCHES THE SWITCH MECHANISM

## Principle of Operation

The switch mechanism is based on a unique three-dimensional magnet design where the snap action is accomplished by the utilization of magnetic repulsion and attraction. The primary magnet mounted on the float rod causes the secondary magnet to rotate as it passes up and down. The tertiary switch magnet is repelled by the secondary and snaps to the opposite side. This causes the cradle to pivot, moving the push rods, which operate the switch contacts. The result is positive snap action interlock switching...**no springs...no spring problems!**



Schematic showing three-magnet system

Type	Choice of Switch Mechanisms	Application
X4, X8	<b>General purpose</b> - 10 amp mechanisms for general purpose duties up to 480°F	
D4, D8	<b>High temperature</b> - 5 amp mechanisms for high temperature applications up to 750°F	
H4, H8	<b>Hermetically sealed</b> - 5 amp mechanisms suitable for temperatures up to 480°F, contaminated atmosphere environments and intrinsically safe circuits. All moving parts and contacts enclosed in an inert gas filled stainless steel enclosure.	
P4, P8	<b>Low current</b> - 0.25 amp gold-plated contact switch mechanism for use in intrinsically safe or low power circuits up to 750°F	
E4, E8	<b>Encapsulated</b> - 5 amp switch mechanism is sealed / encapsulated inside aluminum housing, suitable for temperatures to 850°F	

4 Contact Type D4, X4, P4, H4, E4	
2 x S.P.S.T. AA Make on Rise BB Make on Fall	
Link for SPDT/SPCO	
8 Contact Type D8, X8, P8, H8, E8	
D.P.D.T. 4 x S.P.S.T. AA Make on Rise BB Make on Fall	
Link for DPDT/DPCO	

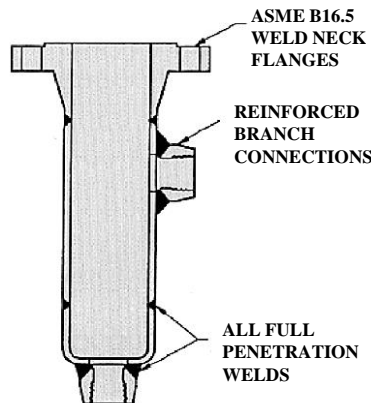
## THE FLOAT CHAMBER

### Applications

The flanged chamber construction of this X series range of vertical controls makes them a very serviceable level control solution for petrochemical, power generation and OEM applications.

The unique three-magnet system provides reliable switching for applications such as level alarm, safety shutdown and pump control in product storage tanks, gas scrubbers, process vessels, and high pressure steam generators.

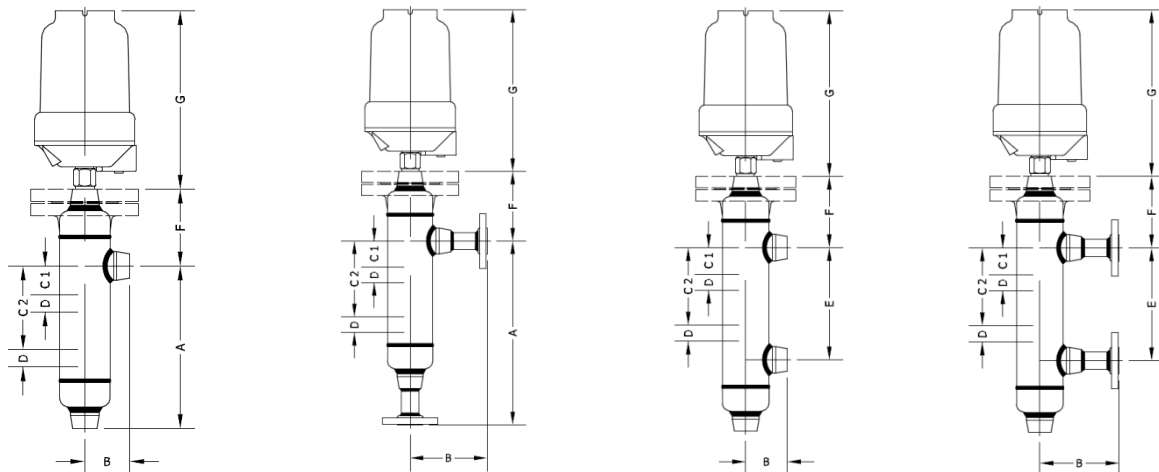
Single or multi-switch models are available. Chambers are designed to ASME B31.1, Power Piping Code, and ASME B31.3, Chemical Plant and Petroleum Refinery Piping Code.



### Options:

- Stainless Steel Chamber
- Low temperature chamber below -20°F
- High temperature chrome-moly chamber
- Certified to B31.1 or B31.3
- Non-destructive testing: radiographic, ultrasonic, magnetic particle, dye penetrant
- Epoxy paint finish (FP-18)
- Extended NEMA 4 switch enclosure housing up to 3 SPDT switch mechanisms or 3 DPDT switch mechanisms
- Vent connection
- Specific gravity below .35
- NACE specification MR-0175

# DIMENSIONAL AND OPERATING LEVEL DATA



NOTE: All flange nipples are 1" NPS as standard

Model	A				B		C1	C2	D	E	F	
	Single Switch NPT/SW	Multi-Switch NPT/SW	Single Switch Flanged	Multi-Switch Flanged	NPT or S/W	Flanged	Hi Alarm	Multi-Switch	Ⓢ	C-C	Chamber Type B	Chamber Type X
JBC1F & JXC1F	8 1/2"	11 1/2"	14"	17"	3 1/4"	6"	2"	5"	0.56"	14"	5 1/2"	5 3/4"
JBC2F & JXC2F	10"	13"	14"	17"	3 3/4"	6 1/2"	2"	5"	0.56"	14"	6"	6"
JBC3F & JXC3F	10"	13"	14"	17"	3 3/4"	6 1/2"	2"	5"	0.56"	14"	6"	6 11/16"
JBC4F & JXC4F	10"	13"	14"	17"	3 3/4"	6 1/2"	2"	5"	0.56"	14"	6"	8 1/16"
JXC5F	10"	13"	14"	17"	3 3/4"	6 1/2"	2"	5"	0.56"	14"	6"	8 1/16"
JBC5F	9 1/2"	12 1/2"	14"	17"	4 1/4"	7 1/2"	2"	5"	0.56"	14"	6 1/2"	8 1/16"
JBC6F & JXC6F	10"	13"	14"	17"	4 3/4"	7 1/2"	2"	5"	0.56"	14"	7"	6 9/16"
JBC7F & JXC7F	10"	13"	14"	17"	4 3/4"	7 1/2"	2"	5"	0.56"	14"	7"	7 3/8"
JBC8F & JXC8F	10"	13"	14"	17"	4 3/4"	7 1/2"	2"	5"	0.56"	14"	7"	8 1/4"
JBC9F & JXC9F	12 1/2"	15 1/2"	16"	19"	5 3/4"	8 1/2"	2"	5"	0.56"	14"	7 1/2"	7 3/16"

Notes: 1) Flanged dimensions apply for R.F. process connections up to 2" - 600#.

2) Switch actuation levels are at minimum S.G.

3) C1 = Single Switch : Process C/L to rising trip point of switch.

= Multi-Switch : Process C/L to rising trip point of upper/high level switch.

4) C2 = Multi-Switch : Process C/L to rising trip point of lower/low level switch.

5) D = Switch Deadband, Distance Between Rising Trip & Falling Reset.

All dimensions in inches. Dimensions are for reference only, and must be certified upon order. All dimensions based 1" reinforced fittings.

## ENCLOSURE DIMENSIONAL DATA

Type	Duty	Height G	Conduit Thread	Switch Adjustment	Weatherproof Rating
SA7	Explosion-proof	13 1/4"	1" NPT	3 3/8"	NEMA 4 & 7
SA4	Weather-proof	12"	1" NPT	3 3/8"	NEMA 4

## MATERIALS OF CONSTRUCTION

Technical Specifications	Designed in accordance with the requirements of B31.1 & B31.3. Pressure tested to 1.5 x maximum working pressures.	
Materials of Construction	Carbon Steel Chamber	Stainless Steel Chamber
Chamber Pipe	ASTM A106 GrB	ASTM A312 316
Top/Bottom Caps	ASTM A234	ASTM A403 WP-316
Flanges/Fittings	ASTM A105	ASTM A182F316
Studs	ASTM A193-B7	ASTM Z193-B7
Nuts	ASTM A194-2H	ASTM A194-2H
Float & Trim	316 SS	316 SS

## OUR WARRANTY

All mechanical level devices are warranted free of defects in materials and workmanship for five years from the date of original factory shipment.

If returned within the stated warranty period, and upon factory inspection the cause of the claim is determined to be covered under the warranty, at option, the device will be repaired or replaced without cost to the purchaser (or owner), other than transportation.

Jerguson® shall not be liable for mis-application, labor claims, direct or consequential damage or expense arising from the installation or use of the equipment. There are no other warranties expressed or implied.



# ORDERING INFORMATION

## CHAMBER TYPE & MATERIAL OF CONSTRUCTION EXTERNAL CAGE SPECIFICATIONS

Carbon Steel		Stainless Steel		Carbon Steel		Stainless Steel			
JBC		JBS		JXC		JXS			
Float is sealed inside chamber during manufacturing. Not removable.				Float may be removed from chamber for routine maintenance, cleaning or inspection.					
JBC				JXC					
Model	Minimum SPDT	S.G. DPDT	Pressure Rating 100°F	Pressure Rating 750°F	Model	Minimum SPDT	S.G. DPDT	Pressure Rating 100°F	Pressure Rating 750°F
JBC1F	.70	.74	350	275	JXC1F	.70	.74	285	95
JBC2F	.55	.57	300	235	JXC2F	.55	.57	285	95
JBC3F	.60	.62	600	465	JXC3F	.60	.62	600	465
JBC4F	.70	.72	1440	935	JXC4F	.70	.72	740	505
JBC5F	.65	.67	1000	780	JXC5F	.70	.72	1440	935
JBC6F	.35	.37	300	235	JXC6F	.35	.37	285	95
JBC7F	.45	.47	750	585	JXC7F	.45	.47	740	505
JBC8F	.60	.62	1000	780	JXC8F	.60	.62	990	670
JBC9F	.34	.34	450	350	JXC9F	.34	.34	285	95

## ENCLOSURE TYPES

Code	Duty	Material of cover		Material of base		Material of pressure	Material of screwed	Maximum number of switches
SA4N	Weather-proof	Aluminum Alloy				316 Stainless Steel	To match chamber material	2
SA7F	Explosion-proof Factory Mutual Cl.I, Div.1, Grps B,C & D	Drawn Steel	Aluminum Alloy					

## NUMBER OF SWITCH MECHANISMS

Specify No. of Switches Required (1,2)

### NOTES:

- Code design standard on all chambers unless otherwise specified.
- Code radiography is available upon request.
- Main Chamber:** Circumferential welds between center pipe & pipe cap(s), and weld neck chamber flange ("X" style 'Chamber Design' only), are full penetration, single-V, butt welds.
- Process Connections:** Immediate branch is an o'let. For flanged connections, when selected, a 1" NPS nipple is welded to the o'let, and slip-on flanges are welded to the nipple, as standard.
- Welders qualified to ASME IX. PWHT available upon request.

## TYPICAL MODEL

**JBC 4F SA4N 1 X4 1 2 F -**

Design Options	
(Omitted)	Standard Design
WN	Weld Neck Flanges
SW	Socket Weld Flanges
RTJ	Ring Type Joint Flange
3E	3" Temperature Extension
6F	6" Temp. Extension w/ Cooling Fins
X	Special Design

Process Conn. Style	
F	FNPT
M	MNPT
S	FSW
P	Plain-End/MSW (Sch.80)
1	150#RF50 ASME
3	300#RF50 ASME
6	600#RF50 ASME
9	900#RF50 ASME
0	1500#RF50 ASME
(Omitted)	Replacement Head Ass'y, Less Chamber ("X" Chamber Design Style)

Process Conn. Size	
0	.50" (DN15)
1	.75" (DN20)
2	1.00" (DN25)
3	1.25" (DN32)
4	1.50" (DN40)
5	2.00" (DN50)
6	2.50" (DN65)
7	3.00" (DN80)
(Omitted)	Replacement Head Ass'y, Less Chamber ("X" Chamber Design Style)

## PROCESS CONNECTION CONFIGURATION

1	Side & Bottom	2	Side & Side With Drain

Switch Mechanism

	Temp Wet-side °F	AC max. values			DC Max. values				
		VA	Volts	Amps	Watts	Volts	Res. Amps	Ind. Amps	
X4 D4 H4 E4 P4		480	2000	440	10	50	250	10	0.5
		750	2000	440	5	50	250	5	0.5
		480	2000	440	5	50	250	5	0.5
		850	2000	440	5	50	250	5	0.5
X8 D8 H8 E8 P8		480	2000	440	10	50	250	10	0.5
		750	2000	440	5	50	250	5	0.5
		480	2000	440	5	50	250	5	0.5
		850	2000	440	5	50	250	5	0.5
		750	6	250	0.25	3.6	250	0.25	0.1

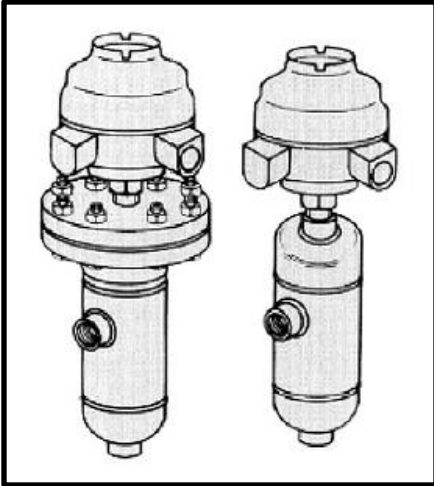
Cage

Enclosure

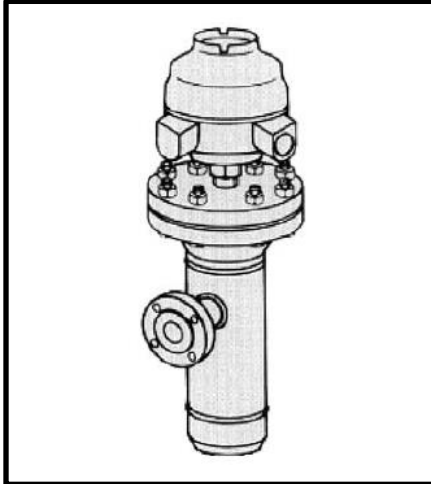
No. of Switches



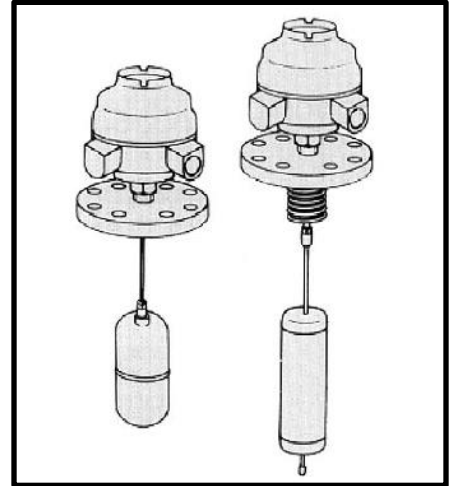
## JERGUSON® "FIT & FORGET" PRODUCTS PROVIDE THE SOLUTION TO YOUR LIQUID LEVEL CONTROL PROBLEMS



Medium Pressures  
ASME Class 150, 300, 600  
SG 0.40



High Pressure  
ASME Class 900, 1500, 2500  
SG 0.40



Direct Mounting  
ASME Class 150, 300, 600  
SG 0.40

### You can rely on us

The Jerguson range of liquid level controls is designed for operation in a wide variety of applications.

#### Typical Applications

Separators	Water Sumps
Compressors	Scrubbers
Knock Out Pots	Fractioning Columns
Condensors	Process Vessels
De-actuators	Condensate Tanks
Storage Tanks	Drainpots
Service Tanks	Accumulators
Header Tanks	Flush Vessels
Effluent Sumps & Tanks	Fuel Tanks
Heat Exchanger	Feedwater Heaters
Lube Oil Tanks	Surge Drums

Jerguson level switches are used for the control of liquids by companies all over the world.

Shell	Bechtel
Exxon	Bellili
Amoco	Ontario Hydro
Fluor	Nissaci-Sangyo
Hyundai	Foster Wheeler
Hitachi	Siemens
British Petroleum	Mannesmann-Demag
Mobil	Catalytic
Texaco	Techni
Ingersoll Rand	Technipetrol
Compare	Nuovo Pignone
Honeywell	Dresser

# JERGUSON®



## Instrumentation & Control

### JERGUSON®



Level Gages  
Magnetic Level Gages  
Switches & Valves

### JACOBY·TARBOX®



Sight Flow Indicators  
Sight Windows  
Eductors

### Reliance®



Boiler Level Gages  
Remote Level Indicators  
Boiler Safety Instruments

## Filtration & Purification

### ANDERSON® Separator

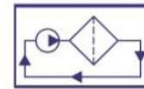


Gas Coalescing & Filtration  
Steam Separators & Traps  
Liquid Particle Filtration

### Enervac™ INTERNATIONAL ULC



Transformer Oil Purification  
SF6 Equipment  
Air Dryers



### OIL FILTRATION SYSTEMS®



Vacuum Dehydrators  
Varnish Removal Systems  
Hi & Low Flow Filter Skids

## Elements, Internals, Parts & More



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# Jerguson's Tri-Magnet Level Switches deliver failure-free performance.



(Series JX)

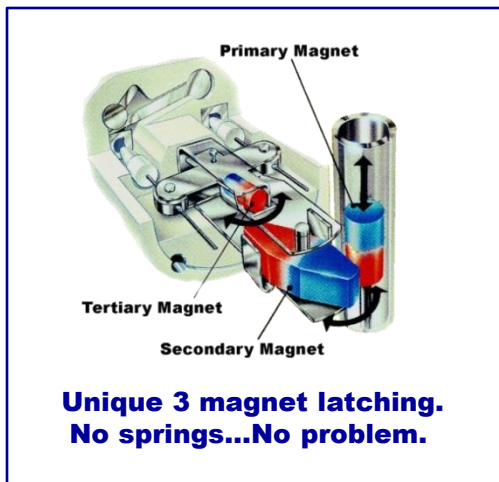


(Series JB)

The innovative use of repelling magnetic fields eliminates mechanical elements that are prone to failure in high temperatures, extreme vibration, or simply fatigue over time.

## FEATURES

- Tri-Magnet Switching for Unparalleled Reliability
- Vibration Resistant
- Sealed or Flanged Cage
- 316 Stainless Steel Trim
- ASME B31.1 & B31.3 Design



*"The new switches are very rugged and dependable, and most importantly, they are mercury-free and safe for the environment. Dealing with spilled mercury is an extremely difficult task, but it is one we don't have to worry about with these new switches. The Jerguson Tri-Magnet Level Switches have been in operation in our facility since May 2007."*

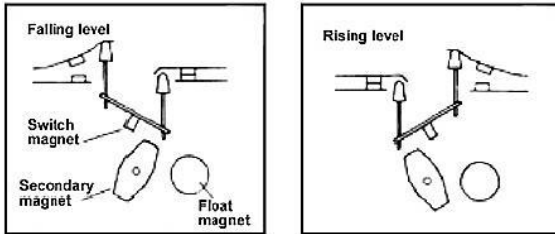
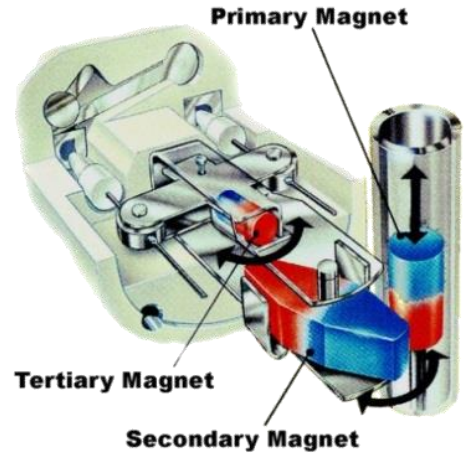
*-Maintenance Superintendent,  
Major Utility Power Generation Plant*

**The Tri-Magnet Level Switch was endurance tested to over 850,000 cycles without failure.**

# JERGUSON® LEVEL SWITCHES THE SWITCH MECHANISM

## Principle of Operation

The switch mechanism is based on a unique three-dimensional magnet design where the snap action is accomplished by the utilization of magnetic repulsion and attraction. The primary magnet mounted on the float rod causes the secondary magnet to rotate as it passes up and down. The tertiary switch magnet is repelled by the secondary and snaps to the opposite side. This causes the cradle to pivot, moving the push rods, which operate the switch contacts. The result is positive snap action interlock switching...**no springs...no spring problems!**



Schematic showing three-magnet system

Type	Choice of Switch Mechanisms	Application
X4, X8	<b>General purpose</b> - 10 amp mechanisms for general purpose duties up to 480°F	
D4, D8	<b>High temperature</b> - 5 amp mechanisms for high temperature applications up to 750°F	
H4, H8	<b>Hermetically sealed</b> - 5 amp mechanisms suitable for temperatures up to 480°F, contaminated atmosphere environments and intrinsically safe circuits. All moving parts and contacts enclosed in an inert gas filled stainless steel enclosure.	
P4, P8	<b>Low current</b> - 0.25 amp gold-plated contact switch mechanism for use in intrinsically safe or low power circuits up to 750°F	
E4, E8	<b>Encapsulated</b> - 5 amp switch mechanism is sealed / encapsulated inside aluminum housing, suitable for temperatures to 850°F	

4 Contact Type D4, X4, P4, H4, E4	
2 x S.P.S.T	
AA Make on Rise	
BB Make on Fall	
<a href="#">Link for SPDT/SPCO</a>	
8 Contact Type D8, X8, P8, H8, E8	
D.P.D.T.	
4 x S.P.S.T.	
AA Make on Rise	
BB Make on Fall	
<a href="#">Link for DPDT/DPCO</a>	

Note: Max. temperature of displacer operated level switch = 400°F

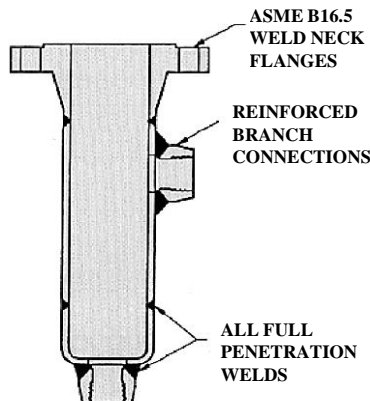
## THE DISPLACER CHAMBER

### Applications

The flanged chamber construction of this X series range of vertical controls makes them a very serviceable level control solution for petrochemical, power generation and OEM applications.

The unique three-magnet system provides reliable switching for applications such as level alarm, safety shutdown and pump control in product storage tanks, gas scrubbers, process vessels, and high pressure steam generators.

Single models are available. Chambers are designed to ASME B31.1, Power Piping Code, and ASME B31.3, Chemical Plant and Petroleum Refinery Piping Code.

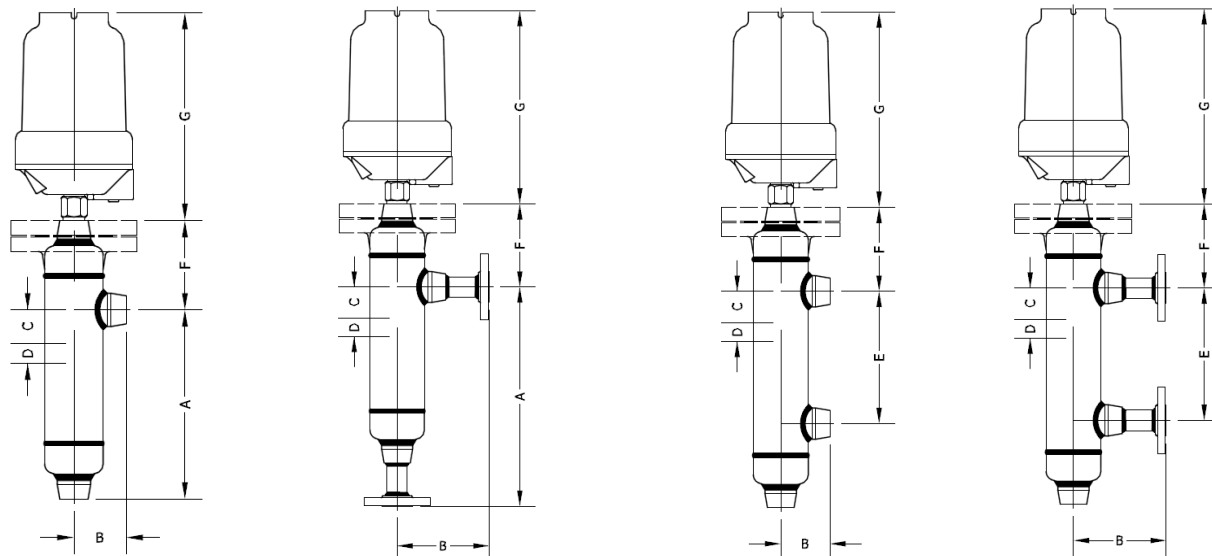


### Options:

- Stainless Steel Chamber
- Low temperature chamber below -20°F
- High temperature chrome-moly chamber
- Certified to B31.3 or B31.1
- Non-destructive testing: radiographic, ultrasonic, magnetic particle, dye penetrant
- Epoxy paint finish (FP-18)
- Extended NEMA 4 switch enclosure housing up to 3 SPDT switch mechanisms or 3 DPDT switch mechanisms
- Vent connection
- Specific gravity down to .40
- NACE specification MR-0175



# DIMENSIONAL AND OPERATING LEVEL DATA



NOTE: All flange nipples are 1" NPS as standard

	A		B		C1	D	E	F	
	NPT or S/W	Flanged	NPT or S/W	Flanged	Hi Alarm	④	C-C	Chamber Type B	Chamber Type X
JBC1D & JXC1D	8 1/2"	16"	3 1/4"	6"	2"	0.56"	14"	5 1/2"	5 3/4"
JBC2D & JXC2D	14"	16"	3 1/4"	6"	2 7/8"	0.56"	14"	10 1/2"	9 1/4"
JBC3D & JXC3D	14"	16"	3 1/4"	6"	2 7/8"	0.56"	14"	10 1/2"	9 3/4"
JBC4D & JXC4D	14"	16"	3 1/4"	6"	2 7/8"	0.56"	14"	10 1/2"	10 1/2"
JBC5D & JXC5D	14"	16"	3 1/4"	6"	2 7/8"	0.56"	14"	10 1/2"	11 1/2"
JBC6D & JXC6D	14"	16"	4"	7"	2 1/4"	0.56"	14"	11 1/2"	11 1/2"

Notes: 1) Flanged dimensions apply for R.F. process connections up to 2" - 600#.

2) Switch actuation levels are at minimum S.G.

3) C1 = Single Switch : Process C/L to rising trip point of switch.

4) D = Switch Deadband, Distance Between Rising Trip & Falling Reset.

All dimensions in inches. Dimensions are for reference only, and must be certified upon order. All dimensions based 1" reinforced fittings.

## ENCLOSURE DIMENSIONAL DATA

Type	Duty	Height G	Conduit Thread	Switch Adjustment	Weatherproof Rating
SA7	Explosion-proof	13 1/4"	1" NPT	3 3/8"	NEMA 4 & 7
SA4	Weather-proof	12"	1" NPT	3 3/8"	NEMA 4

## MATERIALS OF CONSTRUCTION

Technical Specifications	Designed in accordance with the requirements of B31.1 & B31.3. Pressure tested to 1.5 x maximum working pressures.	
Materials of Construction	Carbon Steel Chamber	Stainless Steel Chamber
Chamber Pipe	ASTM A106 GrB	ASTM A312 316
Top/Bottom Caps	ASTM A234	ASTM A403 WP-316
Flanges/Fittings	ASTM A105	ASTM A182F316
Studs	ASTM A193-B7	ASTM Z193-B7
Nuts	ASTM A194-2H	ASTM A194-2H
Displacer	316 SST	316 SST
Spring/Trim	Iconel 600/316 SST	Iconel 600/316 SST

## OUR WARRANTY

All mechanical level devices are warranted free of defects in materials and workmanship for five years from the date of original factory shipment.

If returned within the stated warranty period, and upon factory inspection the cause of the claim is determined to be covered under the warranty, at option, the device will be repaired or replaced without cost to the purchaser (or owner), other than transportation.

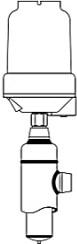
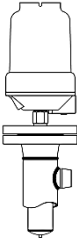
Jerguson® shall not be liable for mis-application, labor claims, direct or consequential damage or expense arising from the installation or use of the equipment. There are no other warranties expressed or implied.



# ORDERING INFORMATION

## TYPICAL MODEL

### CHAMBER TYPE & MATERIAL OF CONSTRUCTION EXTERNAL CAGE SPECIFICATIONS

Carbon Steel		Stainless Steel		Carbon Steel		Stainless Steel			
JBC		JBS		JXC		JXS			
									
Float is sealed inside chamber during manufacturing. Not removable.				Float may be removed from chamber for routine maintenance, cleaning or inspection.					
JBC				JXC					
Model	Min. S.G.	Disp. Mat'l.	Pressure Rating		Model	Min. S.G.	Disp. Mat'l.	Pressure Rating	
			100°F	400°F				100°F	400°F
JBC1D	.50	316SST	350	350	JXC1D	.50	316SST	285	200
JBC3D	.40	316SST	1000	1000	JXC3D	.40	316SST	780	635
JBC4D	.40	316SST	1640	1640	JXC4D	.40	316SST	1480	1270
JBC5D	.40	316SST	2560	2560	JXC5D	.40	316SST	2220	1900
JBC6D	.40	316SST	3980	3980	JXC6D	.40	316SST	3705	3170

**JBC 4D SA4N 1 X4 1 0 F**

Design Options	
(Omitted)	Standard Design
WN	Weld Neck Flanges
SW	Socket Weld Flanges
RTJ	Ring Type Joint Flange
3E	3" Temperature Extension
6F	6" Temp. Extension w/ Cooling Fins
X	Special Design

Process Conn. Style	
F	FNPT
M	MNPT
S	FSW
P	Plain-End/MSW (Sch.80)
1	150#RFSO ASME
3	300#RFSO ASME
6	600#RFSO ASME
9	900#RFSO ASME
0	1500#RFSO ASME
(Omitted)	Replacement Head Ass'y, Less Chamber (*X* Chamber Design Style)

Process Conn. Size	
0	.50" (DN15)
1	.75" (DN20)
2	1.00" (DN25)
3	1.25" (DN32)
4	1.50" (DN40)
5	2.00" (DN50)
6	2.50" (DN65)
7	3.00" (DN80)
(Omitted)	Replacement Head Ass'y, Less Chamber (*X* Chamber Design Style)

### ENCLOSURE TYPES

Code	Duty	Material of cover	Material of base	Material of pressure	Material of screwed	Maximum number of switches
SA4N	Weather-proof	Aluminum Alloy		316 Stainless Steel	To match chamber material	1
SA7F	Explosion-proof Factory Mutual Cl.I, Div.1, Grps B,C & D	Drawn Steel	Aluminum Alloy			

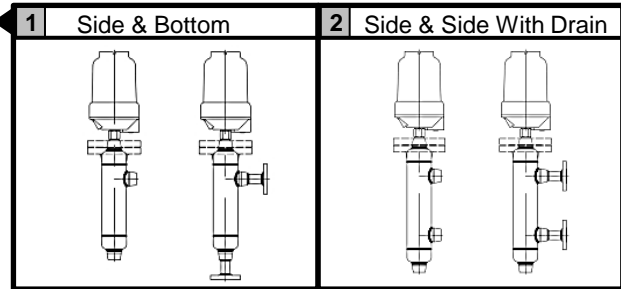
### NUMBER OF SWITCH MECHANISMS



Specify No. of Switches Required (1)

#### NOTES:

- Code design standard on all chambers unless otherwise specified.
- Code radiography is available upon request.
- Main Chamber:** Circumferential welds between center pipe & pipe cap(s) and/or weld neck chamber flange ("X" style 'Chamber Design' only), are full penetration, single-V, butt welds.  
**Process Connections:** Immediate branch is an o'let. For flanged connections, when selected, a 1" NPS nipple is welded to the o'let, and slip-on flanges are welded to the nipple, as standard.
- Welders qualified to ASME IX. PWHT available upon request.

### PROCESS CONNECTION CONFIGURATION



	Temp Wet-side °F	AC max. values			DC Max. values				
		VA	Volts	Amps	Watts	Volts	Res. Amps	Ind. Amps	
X4 D4 H4 E4 P4		480	2000	440	10	50	250	10	0.5
		750	2000	440	5	50	250	5	0.5
		480	2000	440	5	50	250	5	0.5
		850	2000	440	5	50	250	5	0.5
Two independent single pole single throw contact sets		750	6	250	0.25	3.6	250	0.25	0.1
X8 D8 H8 E8 P8		480	2000	440	10	50	250	10	0.5
		750	2000	440	5	50	250	5	0.5
		480	2000	440	5	50	250	5	0.5
		850	2000	440	5	50	250	5	0.5
Four independent single pole single throw contact sets		750	6	250	0.25	3.6	250	0.25	0.1

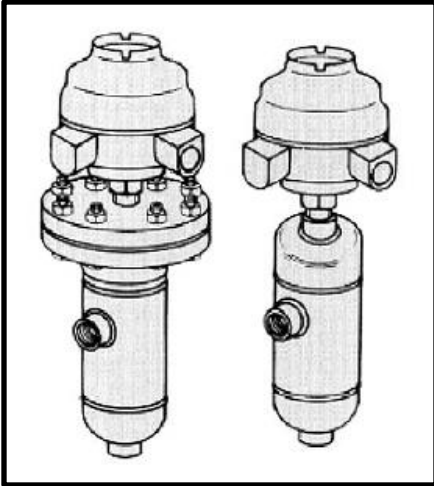
Cage

Enclosure

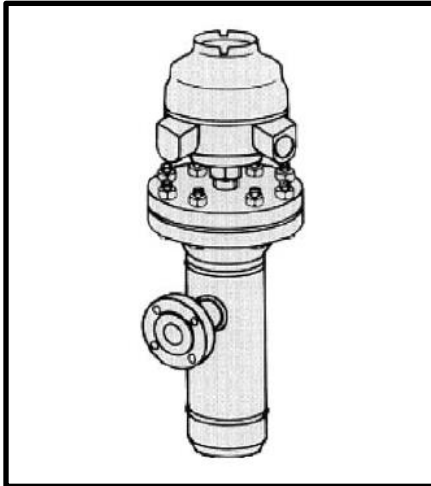
No. of Switches

Switch Mechanism

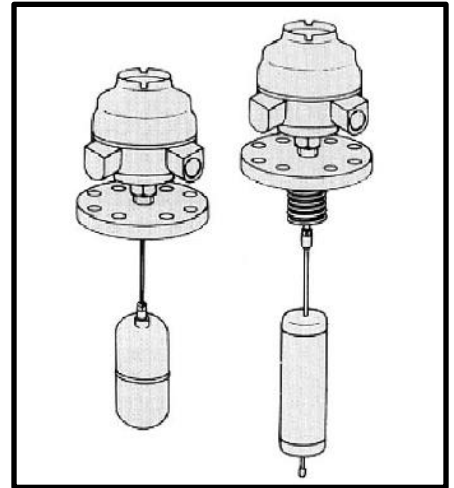
## JERGUSON "FIT & FORGET" PRODUCTS PROVIDE THE SOLUTION TO YOUR LIQUID LEVEL CONTROL PROBLEMS



Medium Pressures  
ASME Class 150, 300, 600  
SG 0.40



High Pressure  
ASME Class 900, 1500, 2500  
SG 0.40



Direct Mounting  
ASME Class 150, 300, 600  
SG 0.40

### You can rely on us

The Jerguson range of liquid level controls is designed for operation in a wide variety of applications.

#### Typical Applications

Separators	Water Sumps
Compressors	Scrubbers
Knock Out Pots	Fractioning Columns
Condensers	Process Vessels
De-actuators	Condensate Tanks
Storage Tanks	Drainpots
Service Tanks	Accumulators
Header Tanks	Flush Vessels
Effluent Sumps & Tanks	Fuel Tanks
Heat Exchanger	Feedwater Heaters
Lube Oil Tanks	Surge Drums

Jerguson level switches are used for the control of liquids by companies all over the world.

Shell	Bechtel
Exxon	Bellili
Amoco	Ontario Hydro
Fluor	Nissaci-Sangyo
Hyundai	Foster Wheeler
Hitachi	Siemens
British Petroleum	Mannesmann-Demag
Mobil	Catalytic
Texaco	Techni
Ingersoll Rand	Technipetrol
Compare	Nuovo Pignone
Honeywell	Dresser

# JERGUSON®



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Magnetic Level Gages  
Switches & Valves

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Sight Windows  
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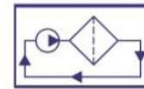


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# Jerguson's Tri-Magnet Level Switches Deliver Unparalleled Reliability

The innovative use of repelling magnetic fields eliminates mechanical elements that are prone to failure in high temperatures, extreme vibration, or simply fatigue over time.

## FEATURES

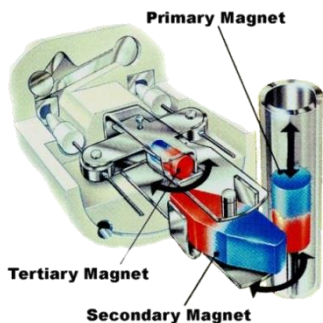
- Tri-Magnet Switching for Failure-Free Performance
- Vibration Resistant
- Pump Control
- 316 Stainless Steel Trim
- Multi-Point Alarm



(Series JD)



(SureTest™ (STS) option)



**Unique 3 magnet latching.  
No springs...No problem.**

*"The new switches are very rugged and dependable, and most importantly, they are mercury-free and safe for the environment. Dealing with spilled mercury is an extremely difficult task, but it is one we don't have to worry about with these new switches. The Jerguson Tri-Magnet Level Switches have been in operation in our facility since May 2007."*

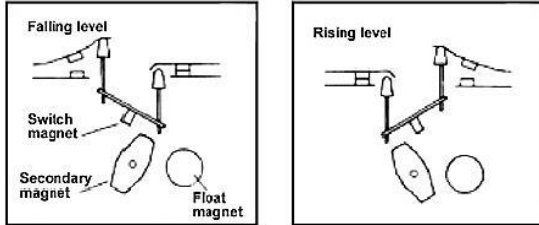
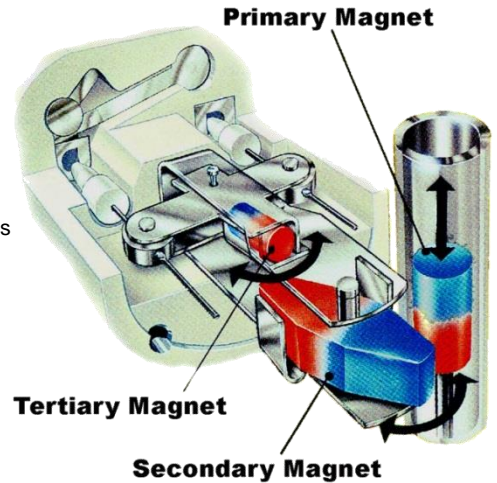
*-Maintenance Superintendent,  
Major Utility Power Generation Plant*

**The Tri-Magnet Level Switch was endurance tested to over 850,000 cycles without failure.**

# JERGUSON® LEVEL SWITCHES THE SWITCH MECHANISM

## Principle of Operation: Switch Mechanism

The switch mechanism is based on a unique three-dimensional magnet design where the snap action is accomplished by the utilization of magnetic repulsion and attraction. The primary magnet mounted on the float rod causes the secondary magnet to rotate as it passes up and down. The switch magnet is repelled by the secondary and snaps to the opposite side. This causes the cradle to pivot, moving the push rods, which operate the switch contacts. The result is positive snap action interlock switching...no springs...no spring problems!



Schematic showing three-magnet system

Type	Choice of Switch Mechanisms Application	4 Contact Type X4, D4, H4, P4, E4
X4, X8	<b>General purpose</b> - 10 amp mechanisms for general purpose duties up to 480°F	2 x S.P.S.T AA Make on Rise BB Make on Fall Link for SPDT/SPCO
D4, D8	<b>High temperature</b> - 5 amp mechanisms for high temperature applications up to 750°F	8 Contact Type X8, D8, H8, P8, E8
H4, H8	<b>Hermetically sealed</b> - 5 amp mechanisms suitable for temperatures up to 480°F, contaminated atmosphere environments and intrinsically safe circuits. All moving parts and contacts enclosed in an inert gas filled stainless steel enclosure.	D.P.D.T. 4 x S.P.S.T. AA Make on Rise BB Make on Fall Link for DPDT/DPCO
P4, P8	<b>Low current</b> - 0.25 amp gold-plated contact switch mechanism for use in intrinsically safe or low power circuits up to 750°F	
E4, E8	<b>Encapsulated</b> - 5 amp switch mechanism is sealed / encapsulated inside aluminum housing, suitable for temperatures to 850°F	

Note: Max temperature of top mount displacer operated level switch = 400°F

## Principle of Operation: Displacer & Spring

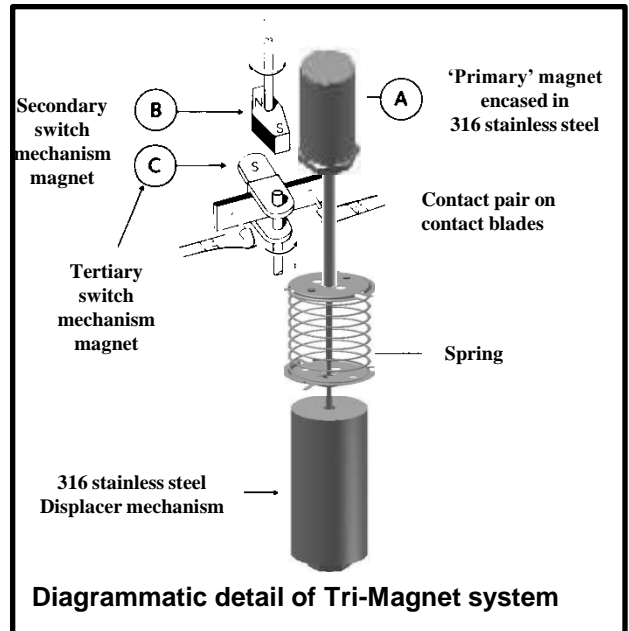
The displacer element is suspended from a spring by a stainless steel cable. The weight of the displacer keeps tension on the spring at all times, causing the spring to extend. Attached to the spring is the rod and magnet assembly, which is free to move up and down within the pressure tube as the spring contracts or extends, actuating the switch mechanism.

A rising liquid submerges the displacer, creating a buoyant force that carries some displacer weight for the spring. With less weight on the spring it contracts, raising the magnet, actuating the switch mechanism. On a falling liquid level the displacer element is uncovered, reducing the buoyant force and transferring the weight back to the spring. The spring extends under the weight, lowering the magnet, re-setting the switch mechanism.

This simple principle can be refined to operate a single switch over a very wide differential by providing the buoyancy force from two displacer elements instead of a single one.

Two switch models are available for applications with narrow differentials for pump control or with appropriate wide differentials.

In all cases, because the element(s) are suspended on a cable, switching or control levels may be many feet below the mounting flange, and are fully field adjustable to re-setting the displacer element(s) on the cable.



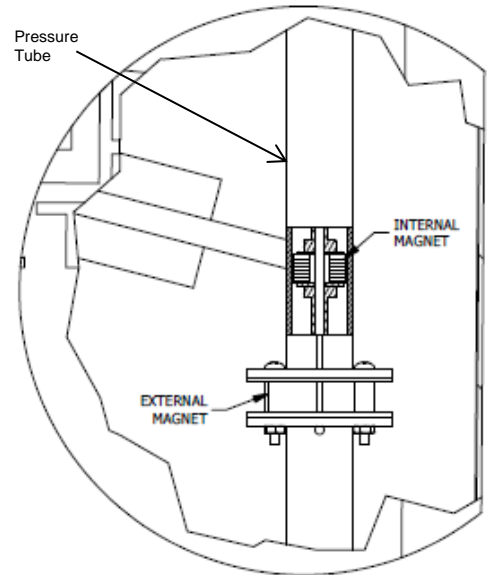
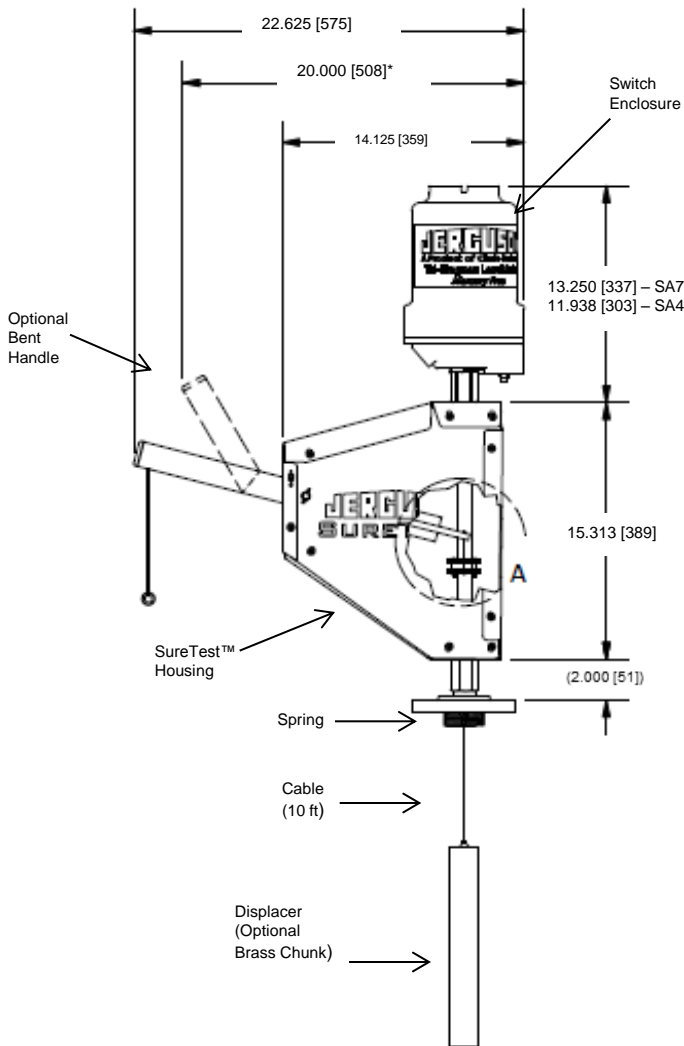
Diagrammatic detail of Tri-Magnet system

## Principle of Operation: SureTest™ Option

The SureTest™ is a local, manual check feature. It allows the operator to simulate a high level in order to check the operation of the switch, without breaking the pressure boundary. By extending the pressure tube, and raising the position of the switch enclosure, the SureTest™ housing can be installed between the switch enclosure and the chamber/tank.

Within the SureTest™ housing is a high-strength, rare earth magnet, that surrounds and moves along the outside of the pressure tube. Inside the pressure tube, connected to the primary magnet within the switch enclosure (responsible for actuating the switch mechanism), there is another high-strength, rare earth magnet, that moves with the level. By pulling down on the handle, the arm within the housing pivots up. Directly attached to the end of the arm is the magnet external to the pressure tube, getting pulled up with the arm. When the external magnet comes in proximity to the internal magnet they couple and start to move up together. Since the internal magnet is tied to the primary magnet, the entire assembly gets lifted up as it would with a rising fluid level. This motion causes the primary switch magnet to pass and actuate the secondary switch magnet (see 'Principle of Operation: Switch Mechanism' section). Releasing the handle allows the springs within the SureTest™ housing to reverse the motion, resetting the switch and returning the unit to its original position.

- Options:
- Bent Handle, for use with pulley system (pulley/cable not included) – Design Option “STB”
  - (See model code) - Straight Handle (as shown below) – Design Option “STS”
  - Locking Device, prevents the manual check feature from unintentional operation - Design Option “LD”



Note: Dimensions in inches w/ mm in brackets.  
\*Also available with bent handle option



## Principle of Operation: Brass Displacer or Chunk Options

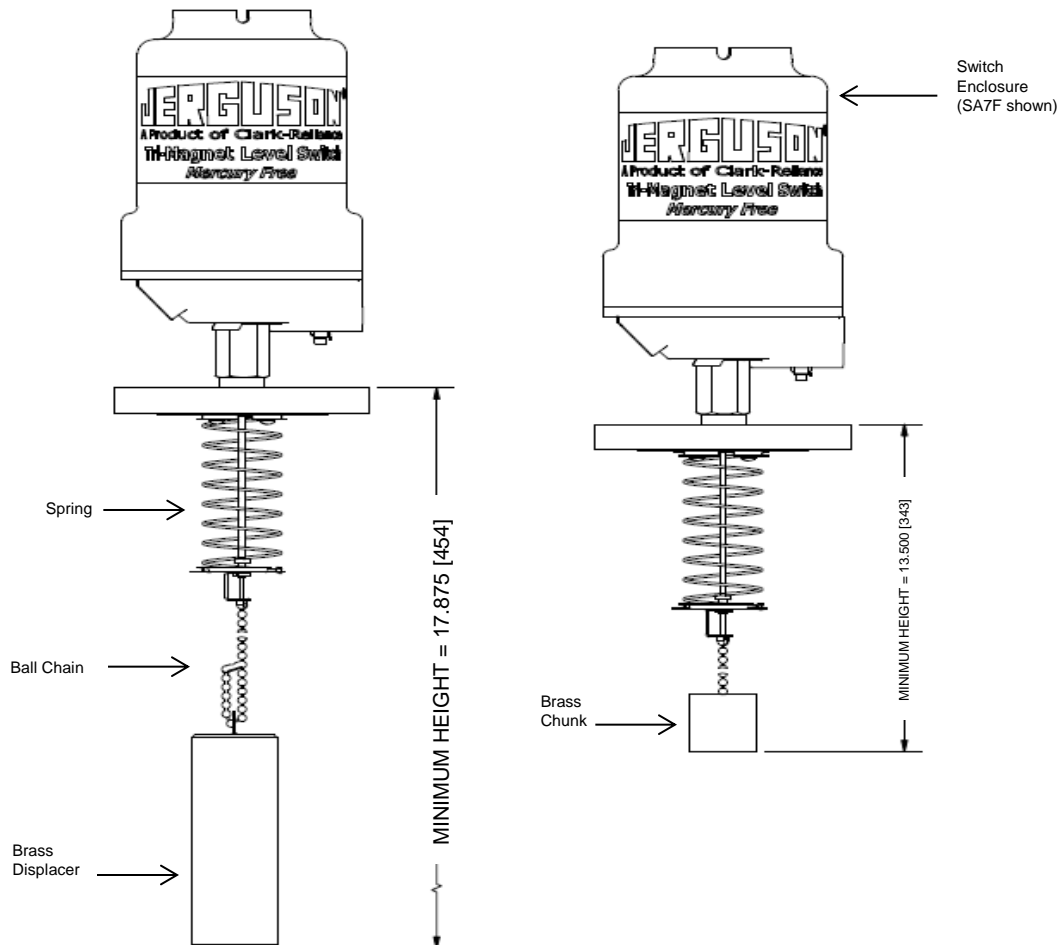
Both options are designed for floating roof systems; open storage containers with a roof that floats on top of the liquid. The brass element (displacer or chunk) is suspended by a brass ball chain below the standard spring. The element weight pulls on the ball chain, extends the spring, & sets the switch in a low state. A rising liquid lifts the roof, contacting the element. With the element resting on the roof, and its weight transferred off of the spring, the spring contracts & trips the switch to a high state. Since brass is non-sparking, contact between the element and roof will not ignite any vapors, if present.

The brass displacer is also designed to operate directly in the liquid, identical to its standard (316SS) counterpart. If the liquid seal on the floating roof were to unexpectedly fail, allowing fluid to cover the roof, this option would continue to provide reliable operation and detect the liquid. (Reference API 2350 for point switch requirements on floating roof tanks.)

In all cases, because the element(s) are suspended on a cable, switching or control levels may be many feet below the mounting flange, and are fully field adjustable to re-setting the displacer element(s) on the cable.

Options: - Brass Chunk, for use on floating roof tanks (rising roof lifts chunk, activates switch) - Design Option "BC"  
(See model code) - Brass Displacer, for use with either floating roof tanks or liquid - Design Option "BD"

\*Note: Both brass options are available either stand alone, or in conjunction with the SureTest.



# ORDERING INFORMATION

## TYPICAL MODEL

**JDC 2D SA4 1 X4 D71** \_\_\_\_\_

### MATERIAL OF CONSTRUCTION

CODE	Chamber Material	Trim
JDC	Carbon Steel	316 Stainless Steel
JDS	316 Stainless Steel	316 Stainless Steel

### INTERNAL MOUNT DISPLACER TYPES

CODE	Function-Differential	Displacer	SPDT	DPDT	Tolerance	Press. Rating (@ 100 F) <sup>1</sup>
1D	Single Switch-Narrow	316-SST	.50 - 1.2	.50 - 1.2	N/A	1000 PSIG
2D	Single Switch-Wide	316-SST	.50 - 1.5	.50 - 1.5	±10%	1000 PSIG
3D	Dual Switch-Wide	316-SST	.60 - 1.2	.80 - 1.2	±5%	1000 PSIG
8D	Dual Switch-Narrow	316-SST	.60 - 1.2	.80 - 1.2	±10%	1000 PSIG

### ENCLOSURE TYPES

CODE	Duty	Material of Cover	Material of Base	Material of Tubing	Material of Threaded Adaptor	Maximum Number of Switches
SA4N	Weather-Proof	Aluminum Alloy		316 Stainless Steel	To match chamber material	1-2
S17F	Explosion-Proof Factory Mutual Cl. I, Div. 1, Grps B, C & D	Cast Iron				
SA7F		Drawn Steel	Aluminum Alloy			

### NUMBER OF SWITCH MECHANISMS

**Specify No. of Switches Required**



No. of Switches

Design Options	
(Omitted)	Standard Design
BD	Brass Displacer <sup>23</sup>
BC	Brass Chunk <sup>45</sup>
STS	SureTest™ Feature, Straight Handle <sup>6</sup>
STB	SureTest™ Feature, Bent Handle <sup>6</sup>
LD	SureTest™ Locking Device <sup>8</sup>
X	Special Design

### MOUNTING CONNECTION

CODE	SIZE	CARBON STEEL RATING	SST RATING
D71	3" 150# R.F. ASME	285 PSIG @ 100°F	275 PSIG @ 100°F
D73	3" 300# R.F. ASME	740 PSIG @ 100°F	720 PSIG @ 100°F
D76	3" 600# R.F. ASME	1480 PSIG @ 100°F	1400 PSIG @ 100°F
D91	4" 150# R.F. ASME	285 PSIG @ 100°F	275 PSIG @ 100°F
D93	4" 300# R.F. ASME	740 PSIG @ 100°F	720 PSIG @ 100°F
D96	4" 600# R.F. ASME	1480 PSIG @ 100°F	1400 PSIG @ 100°F
DB1	6" 150# R.F. ASME	285 PSIG @ 100°F	275 PSIG @ 100°F
D6M	2 1/2" MNPT	1000 PSIG @ 100°F	1000 PSIG @ 100°F
D7M	3" MNPT	1000 PSIG @ 100°F	1000 PSIG @ 100°F

### SWITCH MECHANISM TYPES

	Temp Wet-side °F <sup>7</sup>	AC max. values			DC Max. values			
		VA	Volts	Amps	Watts	Volts	Res. Amps	Ind. Amps
<b>X4</b> <b>D4</b> <b>H4</b> <b>E4</b> <b>P4</b>  Link for SPDT Two independent single pole single throw contact sets	480	2000	440	10	50	250	10	0.5
	750	2000	440	5	50	250	5	0.5
	480	2000	440	5	50	250	5	0.5
	850	2000	440	5	50	250	5	0.5
<b>X8</b> <b>D8</b> <b>H8</b> <b>E8</b> <b>P8</b>  Link for DPDT Four independent single pole single throw contact sets	480	2000	440	10	50	250	10	0.5
	750	2000	440	5	50	250	5	0.5
	480	2000	440	5	50	250	5	0.5
	850	2000	440	5	50	250	5	0.5
	750	6	250	0.25	3.6	250	0.25	0.1

### Notes

- Overall pressure rating of unit is the lowest of displacer rating, process connection rating, and rating of any options (if applicable).
- Rated to 900PSIG @ 100°F
- CF for 2D,3D,8D
- Rating N/A for solid chunk
- CF for 2D,3D
- Only available for single switch units (1D,2D)
- Due to spring, max temperature of top mount displacer operated level switch = 400°F
- Only available with STS and STB Design Options



# DIMENSIONAL AND OPERATING LEVEL DATA

<p style="text-align: center;">Single Switch, Narrow Differential</p> <p style="text-align: center;">1D SST: A = 7 1/2 D = 2 1/2</p>	<p style="text-align: center;">Single Switch, Wide Differential</p> <p style="text-align: center;">2D SST: A = 7 1/2 D = 2 1/2</p>	<p style="text-align: center;">Dual Switch, Narrow Differential</p> <p style="text-align: center;">8D SST: A = 7 1/2 D = 2 1/2</p>	<p style="text-align: center;">Dual Switch, Wide Differential</p> <p style="text-align: center;">3D SST: A = 7 1/2 B = 4 D = 2 1/2</p>
S.G. 0.50 0.60 0.80 1.00	S.G. 0.50 0.60 0.80 1.00	S.G. 0.80 0.90 1.00 1.10	S.G. 0.80 0.90 1.00 1.10
E min. 3 1/2" 3" 2 1/2" 2"	E min. 7 1/4" 6 1/4" 5 1/4" 4 5/8"	E min. 2 1/2" 2 1/4" 2" 1 7/8"	E min. 5" 4 3/4" 4 1/2" 4 1/4"
<p>Specify for alarm duty, hi level or lo level.</p> <p>Switching level can be changed by simply moving the displacer up or down the cable.</p> <p>SST CABLE 10 FT. LONG</p>	<p>The two displacer elements are positioned at any point on the cable to correspond to the switching levels required. When the liquid level drops to the lower displacer, a switch is actuated and starts (or stops) a pump when the liquid rises to the upper displacer, the switch is again actuated to stop (or start) the pump.</p>	<p>The displacers are positioned to form two elements of similar lengths, such that two alarm points may be given. This arrangement is typical of sump application.</p>	<p>A pump is controlled between the middle and the lower displacers positioned on the cable at the required levels. Should the level rise to the upper displacer, this actuates the upper alarm switch which remains actuated until the level drops to the middle displacer.</p> <p>Alternatively the upper switch could control a second pump.</p>

E min. = Differential

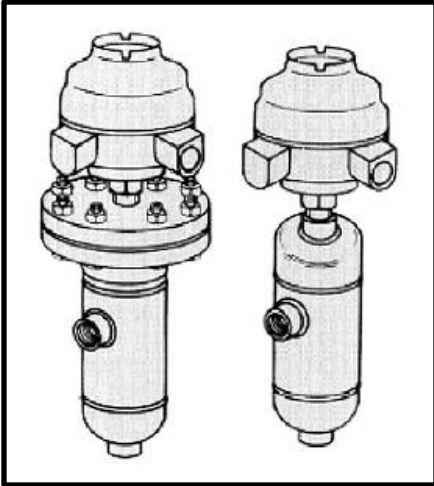
## ENCLOSURE DIMENSIONAL DATA

Type	Duty	Height G	Conduit Thread	Switch Adjustment	Weatherproof Rating
SA7, SI7	Explosion-proof	13 1/4"	1" NPT	3 3/8"	NEMA 4 & 7
SA4	Weather-proof	12"	1" NPT	3 3/8"	NEMA 4

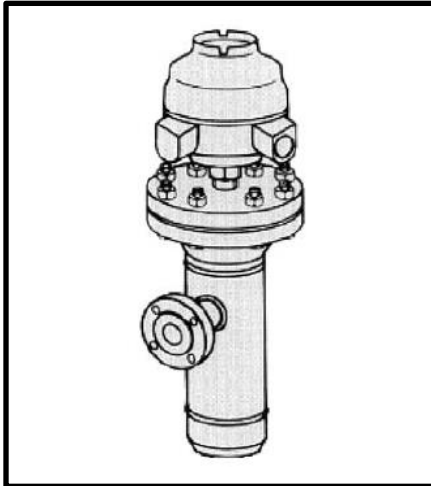
## MATERIALS OF CONSTRUCTION

<b>Technical Specifications</b>	Designed in accordance with the requirements of B31.1 & B31.3. Pressure tested to 1.5 x maximum working pressures.	
Materials of Construction	Carbon Steel Mounting Flange	Stainless Steel Mounting Flange
Flanges/Fittings	ASTM A105	ASTM A182F316
Displacer & Trim	316 SS	316 SS
Spring	Inconel 600	Inconel 600
<b>Options:</b>		
<ul style="list-style-type: none"> <li>• Low temperature carbon steel chambers</li> <li>• Controls to meet NACE requirements</li> <li>• A comprehensive NDT package</li> </ul>		

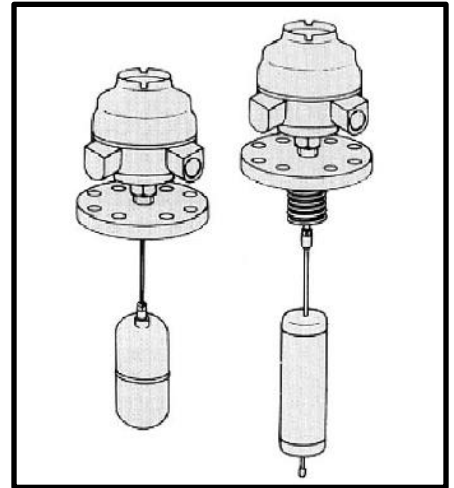
## JERGUSON® "FIT & FORGET" PRODUCTS PROVIDE THE SOLUTION TO YOUR LIQUID LEVEL CONTROL PROBLEMS



Medium Pressures  
ASME Class 150, 300, 600  
SG 0.40



High Pressure  
ASME Class 900, 1500, 2500  
SG 0.40



Direct Mounting  
ASME Class 150, 300, 600  
SG 0.40

### You can rely on us

The Jerguson range of liquid level controls is designed for operation in a wide variety of applications.

#### Typical Applications

Separators	Water Sumps
Compressors	Scrubbers
Knock Out Pots	Fractioning Columns
Condensers	Process Vessels
De-actuators	Condensate Tanks
Storage Tanks	Drainpots
Service Tanks	Accumulators
Header Tanks	Flush Vessels
Effluent Sumps & Tanks	Fuel Tanks
Heat Exchanger	Feedwater Heaters
Lube Oil Tanks	Surge Drums

Jerguson level switches are used for the control of liquids by companies all over the world.

Shell	Bechtel
Exxon	Bellili
Amoco	Ontario Hydro
Fluor	Nissaci-Sangyo
Hyundai	Foster Wheeler
Hitachi	Siemens
British Petroleum	Mannesmann-Demag
Mobil	Catalytic
Texaco	Techni
Ingersoll Rand	Technipetrol
Compare	Nuovo Pignone
Honeywell	Dresser

**5 YEAR  
MECHANICAL  
WARRANTY**

## OUR WARRANTY

All mechanical level devices are warranted free of defects in materials and workmanship for five years from the date of original factory shipment.

If returned within the stated warranty period, and upon factory inspection the cause of the claim is determined to be covered under the warranty, at option, the device will be repaired or replaced without cost to the purchaser (or owner), other than transportation.

Jerguson® shall not be liable for mis-application, labor claims, direct or consequential damage or expense arising from the installation or use of the equipment. There are no other warranties expressed or implied.

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A PRODUCT OF CLARK-RELIANCE

# Clark·Reliance®

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Level Gages  
Magnetic Level Indicators  
Switches & Transmitters

**JACOBY·TARBOX®**



Sight Flow Indicators  
Sight Windows  
Eductors & Tank Agitators

**Reliance®**



Boiler Level Gages  
Remote Level Indicators  
Boiler Safety Instruments

## Filtration & Purification

**ANDERSON®**  
Separator

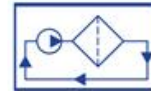


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## Elements, Internals, Parts & More



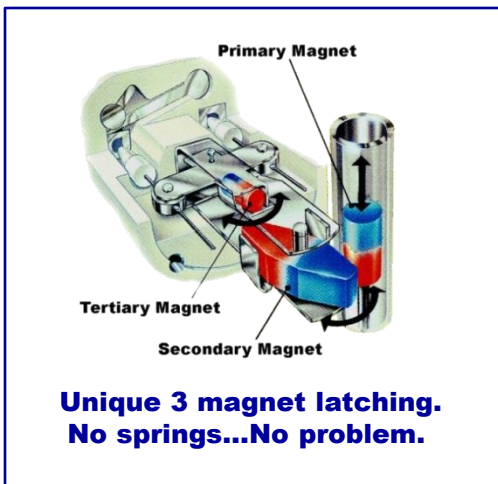
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# Jerguson's Tri-Magnet Level Switches deliver failure-free performance.

The innovative use of repelling magnetic fields eliminates springs and other mechanical elements that are prone to failure in high temperatures, extreme vibration, or simply fatigue over time.

## FEATURES

- Tri-Magnet Switching
- Vibration Resistant
- Sealed Cage
- ASME B31.1 Design
- ASME B31.3 Design
- Stainless Steel Trim



*"The new switches are very rugged and dependable, and most importantly, they are mercury-free and safe for the environment. Dealing with spilled mercury is an extremely difficult task, but it is one we don't have to worry about with these new switches. The Jerguson Tri-Magnet Level Switches have been in operation in our facility since May 2007."*

*-Maintenance Superintendent,  
Major Utility Power Generation Plant*

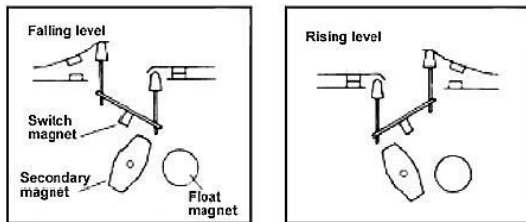
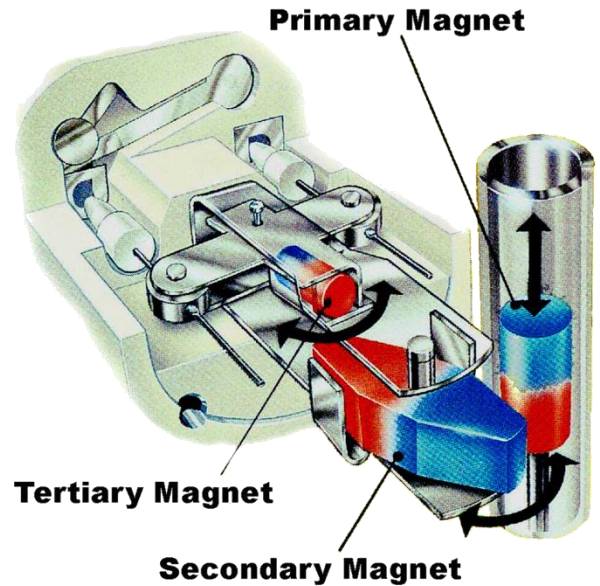
**The Tri-Magnet Level Switch was endurance tested to over 850,000 cycles without failure.**



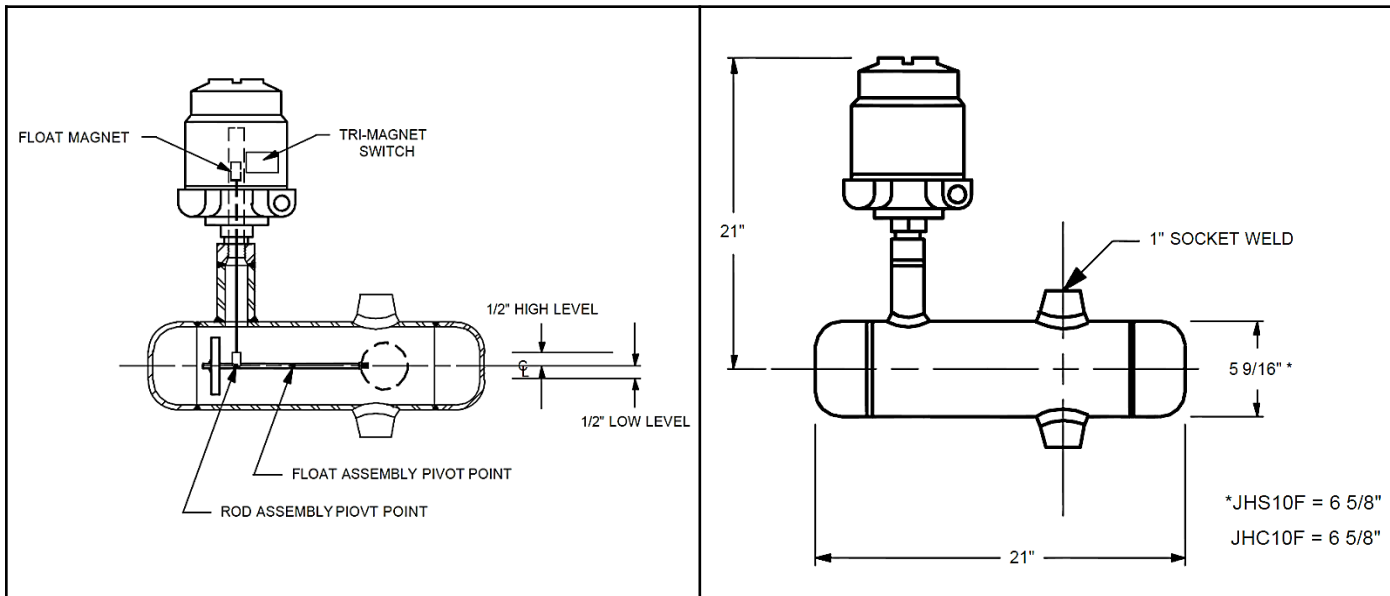
# JERGUSON® LEVEL SWITCHES THE SWITCH MECHANISM

## Principle of Operation

The switch mechanism is based on a unique three-dimensional magnet design where the snap action is accomplished by the utilization of magnetic repulsion and attraction. The primary magnet mounted on the float rod causes the secondary magnet to rotate as it passes up and down. The tertiary switch magnet is repelled by the secondary and snaps to the opposite side. This causes the cradle to pivot, moving the push rods, which operate the switch contacts. The result is positive snap action interlock switching...**no springs...no spring problems!**



Schematic showing three-magnet system



The JH Series is designed for high pressure/high temperature applications that are beyond the limitations of typical external cage vertical type float and displacer level switches. By utilizing a pivot and counter balance technique, the wall thickness of the float can be increased to handle higher pressure ratings. As the liquid rises and falls inside the chamber, the float assembly pivots causing the float magnet, which is attached to the rod assembly, to move in a downward or upward position. This movement causes the Tri-Magnet switch to actuate. The H series level switches can be used for a low level or high level installation. The unit is mounted relative to the actuation point from the centerline of the chamber.

# ORDERING INFORMATION

## TYPICAL MODEL

JHC8F SA4N 1D4 1 2 S \_

Model No.	Material	Min. S.G.	Pressure Rating (PSIG)			
			@ 100°F	@ 750°F	@ 1000°F	
JHC8F	Carbon Steel	0.60	1300	845	N/A	
JHC9F	Carbon Steel	0.60	2095	1365	N/A	
JHC10F	Carbon Steel	0.60	3790	2460	N/A	
JHS8F	316-SST	0.60	1300	1045	N/A	
JHS9F	316-SST	0.60	2095	1690	N/A	
JHS10F	316-SST	0.60	3790	3050	N/A	
JHH8F	High Alloy = 1 1/4 Cr - 1/2 Mo	0.60	1300	990	505	See Note Below
JHH9F	High Alloy = 1 1/4 Cr - 1/2 Mo	0.60	2095	1595	815	
JHH10F	High Alloy = 1 1/4 Cr - 1/2 Mo	0.60	3790	2880	1475	

Note: All JHH Models include dual temp extension and cooling fins.

Design Options	
(Omitted)	Standard Design
WN	Weld Neck Flanges
SW	Socket Weld Flanges
RTJ	Ring Type Joint Flange
3E	3" Temperatruue Extension
6F	6" Temp. Extension w/ Cooling Fins
X	Special Design

Process Conn. Style	
F	FNPT
M	MNPT
S	FSW
P	Plain-End/MSW (Sch.80)
1	150#RFSO ASME
3	300#RFSO ASME
6	600#RFSO ASSME
9	900#RFSO ASME
0	1500#RFSO ASME

\*Not available with all offerings, consult factory for applicability.

## ENCLOSURE TYPES

Code	Duty	Material of cover	Material of base	Material of pressure	Material of screwed	Maximum number of switches
SA4N	Weather-proof	Aluminum Alloy		316 Stainless Steel	To match chamber material	1
SA7F	Explosion-proof Factory Mutual Cl.I,Div.1,Grps B,C & D	Drawn Steel	Aluminum Alloy			

## SWITCH MECHANISM TYPES

Type	Max. Temp °F Standard Models	Max. Temp °F 6" Temp. Ext. + Cooling Fins	AC max. values				DC max. values			
			VA	Volts	Amps	Watts	Volts	Res. Amps	Ind. Amps	
1X4	480	1000	2000	440	10	50	250	10	0.5	
1D4	750	1000	2000	440	5	50	250	5	0.5	
1H4	480	850	2000	440	5	50	250	5	0.5	
1E4	850	1000	2000	440	5	50	250	5	0.5	
1P4	750	1000	6	250	0.25	3.6	250	0.25	0.1	
1X8	480	1000	2000	440	10	50	250	10	0.5	
1D8	750	1000	2000	440	5	50	250	5	0.5	
1H8	480	850	2000	440	5	50	250	5	0.5	
1E8	850	1000	2000	440	5	50	250	5	0.5	
1P8	750	1000	6	250	0.25	3.6	250	0.25	0.1	

Process Conn. Size	
0	.50" (DN15)
1	.75" (DN20)
2	1.00" (DN25)
3	1.25" (DN32)
4	1.50" (DN40)
5	2.00" (DN50)
6	2.50" (DN65)
7	3.00" (DN80)

Process Conn. Orientation	
1	Top-Bottom

### NOTES:

- Code design standard on all chambers unless otherwise specified.
- Code radiography is available upon request.
- Main Chamber:** Circumferential welds between center pipe & pipe cap(s) are full penetration, single-V, butt welds. **Process Connections:** Immediate branch is an o'let. For flanged connections, when selected, a 1" NPS nipple is welded to the o'let, and slip-on flanges are welded to the nipple, as standard.
- Welders qualified to ASME IX. PWHT available upon request.



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Level Gages  
Magnetic Level Gages  
Switches & Valves

### JACOBY·TARBOX®



Sight Flow Indicators  
Sight Windows  
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### Reliance®



Boiler Level Gages  
Remote Level Indicators  
Boiler Safety Instruments

## Filtration & Purification

### ANDERSON® Separator

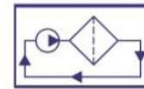


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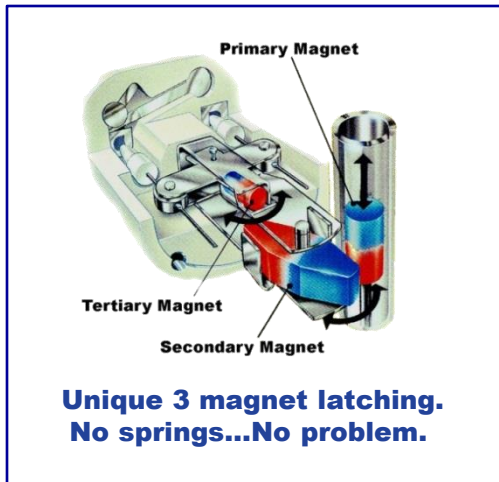
# Jerguson's Tri-Magnet Level Switches deliver failure-free performance.

The innovative use of repelling magnetic fields eliminates springs and other mechanical elements that are prone to failure due to high temperatures, extreme vibration, or fatigue over time.



## FEATURES

- Tri-Magnet Switching for Unparalleled Reliability
- Vibration Resistant
- 316 Stainless Steel Trim
- ASME B31.1 & B31.3 Design



*“The new switches are very rugged and dependable, and most importantly, they are mercury-free and safe for the environment. Dealing with spilled mercury is an extremely difficult task, but it is one we don't have to worry about with these new switches. The Jerguson Tri-Magnet Level Switches have been in operation in our facility since May 2007.”*

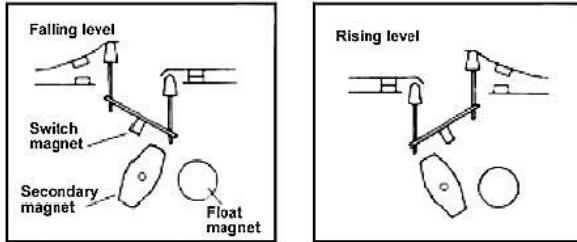
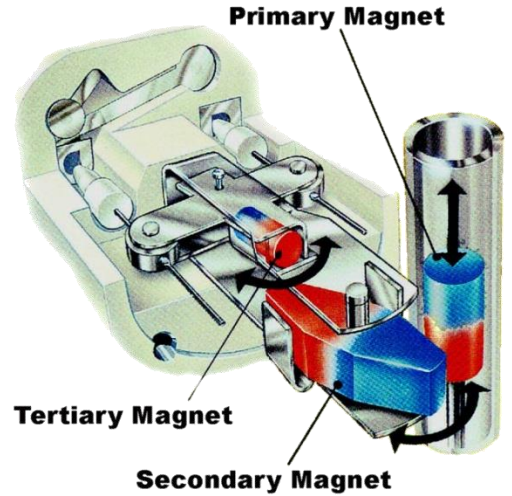
*-Maintenance Superintendent,  
Major Utility Power Generation Plant*

**The Tri-Magnet Level Switch was endurance tested to over 850,000 cycles without failure.**



# JERGUSON® LEVEL SWITCHES THE SWITCH MECHANISM

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The switch mechanism is based on a unique three-dimensional magnet design where the snap action is accomplished by the utilization of magnetic repulsion and attraction. The primary magnet mounted on the float rod causes the secondary magnet to rotate as it passes up and down. The tertiary switch magnet is repelled by the secondary and snaps to the opposite side. This causes the cradle to pivot, moving the push rods, which operate the switch contacts. The result is positive snap action, interlock switching...**no springs...no spring problems!**



Schematic showing three-magnet system

Type	Choice of Switch Mechanisms	Application	4 Contact Type D4, X4, P4, H4, E4
X4, X8	<b>General purpose</b> - 10 amp mechanisms for general purpose duties up to 480°F		S.P.D.T. 2 x S.P.S.T. AA Make on Fall BB Make on Rise 
D4, D8	<b>High temperature</b> - 5 amp mechanisms for high temperature applications up to 750°F		Link for SPDT/SPCO
H4, H8	<b>Hermetically sealed</b> - 5 amp mechanisms suitable for temperatures up to 480°F, contaminated atmosphere environments and intrinsically safe circuits. All moving parts and contacts enclosed in an inert gas filled stainless steel enclosure.		<b>8 Contact Type D8, X8, P8, H8, E8</b>
P4, P8	<b>Low current</b> - 0.25 amp gold-plated contact switch mechanism for use in intrinsically safe or low power circuits up to 750°F		D.P.D.T. 4 x S.P.S.T. AA Make on Fall BB Make on Rise 
E4, E8	<b>Encapsulated</b> - 5 amp switch mechanism is sealed / encapsulated inside aluminum housing, suitable for temperatures to 850°F		Link for DPDT/DPCO

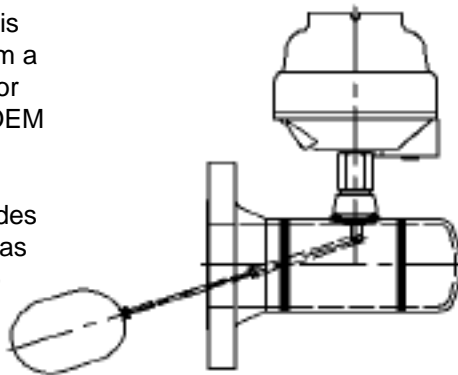
## THE FLOAT CHAMBER

### Applications

The flanged chamber construction of this series of horizontal controls makes them a very serviceable level control solution for petrochemical, power generation and OEM applications.

The unique three-magnet system provides reliable switching for applications such as level alarm, safety shutdown and pump control in product storage tanks, gas scrubbers, process vessels, and high pressure steam generators.

Single switch only available. Chambers are designed to ASME B31.1, Power Piping Code, and ASME B31.3, Chemical Plant and Petroleum Refinery Piping Code.



### Options:

- Stainless Steel Chamber
- Low temperature chamber below -20°F
- High temperature chrome-moly chamber
- Certified to B31.1 or B31.3
- Non-destructive testing: radiographic, ultrasonic, magnetic particle, dye penetrant
- Epoxy paint finish (FP-18)
- Extended NEMA 4 switch enclosure housing 1 SPDT switch mechanisms or 1 DPDT switch mechanisms
- Vent connection
- Specific gravity down to 0.50
- NACE specification MR-0175

# ORDERING INFORMATION

JHC1F SA7 1 X4

Model No.	Connection	Min. S.G.	Pressure Rating
	Carbon Steel		@ 100 Deg. F
JHC1F	3"-150# R.F.	0.60	285 PSIG @ 100°F, 95 PSIG @ 750°F
JHC2F	4"-150# R.F.	0.50	285 PSIG @ 100°F, 95 PSIG @ 750°F
JHC3F	4"-300# R.F.	0.50	600 PSIG @ 100°F, 465 PSIG @ 750°F
JHC4F	4"-300# R.F.	0.60	740 PSIG @ 100°F, 505 PSIG @ 750°F
JHC5F	4"-600# R.F.	0.60	1480 PSIG @ 100°F, 1015 PSIG @ 750°F
	Stainless Steel		
JHS1F	3"-150# R.F.	0.60	275 PSIG @ 100°F, 95 PSIG @ 750°F
JHS2F	4"-150# R.F.	0.50	275 PSIG @ 100°F, 95 PSIG @ 750°F
JHS3F	4"-300# R.F.	0.50	600 PSIG @ 100°F, 465 PSIG @ 750°F
JHS4F	4"-300# R.F.	0.60	720 PSIG @ 100°F, 425 PSIG @ 750°F
JHS5F	4"-600# R.F.	0.60	1440 PSIG @ 100°F, 855 PSIG @ 750°F

## ENCLOSURE TYPES

Code	Duty	Material of cover	Material of base	Material of pressure	Material of screwed	Maximum number of switches
SA4N	Weather Proof	Aluminum Alloy		316 Stainless Steel	To match chamber material	1
SA7F	Explosion Proof – See Note <sup>1</sup>	Drawn Steel	Aluminum Alloy			

Note<sup>1</sup>

Factory Mutual Approved:

Class I Division 1, Groups B, C, D; T6...T1 Ta = -50°C to +60°C; Type 4X, IP66/67

Class I, Zone 0\*\*/1, AEx d IIC T6...T1 Ta = -50°C to +60°C, Type 4, IP66

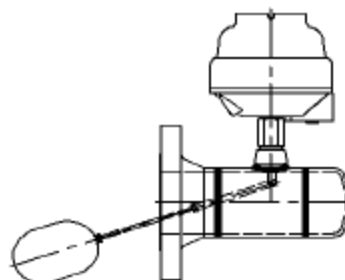
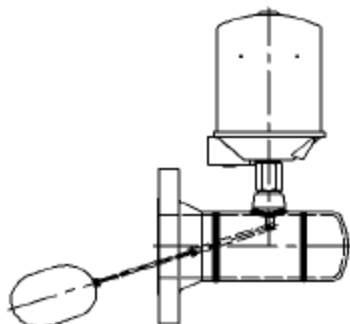
\*\* The equipment can be installed in the boundary wall between an area of Class I, Zone 0 and Class I, Zone 1.

In this configuration, the process connection is in Zone 0 and the enclosure is in Zone 1.

## NUMBER OF SWITCHES

## SWITCH MECHANISM

	Temp Wet-side °F	AC max. values			DC Max. values			
		VA	Volts	Amps	Watts	Volts	Res. Amps	Ind. Amps
X4	480	2000	440	10	50	250	10	0.5
D4								
H4	750	2000	440	5	50	250	5	0.5
E4	480	2000	440	5	50	250	5	0.5
P4								
	850	2000	440	5	50	250	5	0.5
	750	6	250	0.25	3.6	250	0.25	0.1
X8	480	2000	440	10	50	250	10	0.5
D8								
H8	750	2000	440	5	50	250	5	0.5
E8	480	2000	440	5	50	250	5	0.5
P8								
	850	2000	440	5	50	250	5	0.5
	750	6	250	0.25	3.6	250	0.25	0.1





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Magnetic Level Gages  
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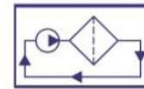


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Liquid Particle Filtration

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MODEL	A (1 SWITCH)	A (2 SWITCH)	B
JB_1F/1	8-1/2"	11-1/2"	3-1/8"
JB_2F/1	10"	13"	3-5/8"
JB_3F/1	10"	13"	3-5/8"
JB_4F/1	10"	13"	3-5/8"
JB_5F/1	10"	13"	3-5/8"
JB_6F/1	10"	13"	4-11/16"
JB_7F/1	10"	13"	4-11/16"
JB_8F/1	10"	13"	4-11/16"
JB_9F/1	12-1/2"	15-1/2"	5-11/16"
JB_1D/1	8-3/8"	N/A	3-1/8"
JB_3D/1	13-7/8"	N/A	3-1/8"
JB_4D/1	13-7/8"	N/A	3-1/8"
JB_5D/1	13-7/8"	N/A	3-1/8"
JB_6D/1	13-1/8"	N/A	3-5/8"

NOTES:

1. " \_ " SYMBOL IN TABLE REPRESENTS MATERIAL,

"C" FOR CARBON STEEL

- PIPE: A106 GR.B
- REINFORCED FITTING: A105
- CAP: A234 GR.WPB
- FLANGE: A105

"S" FOR STAINLESS STEEL

- PIPE: A312 GR.TP316
- REINFORCED FITTING: A182 GR.F316L
- CAP: A403 GR.WP316
- FLANGE: A182 GR.F316L

"H" FOR CHROME MOLY (1.25 Cr - 0.5 Mo)

- PIPE: A335 GR.P11
- REINFORCED FITTING: A182 GR.F11
- CAP: A234 GR.WP11
- FLANGE: A182 GR.F11

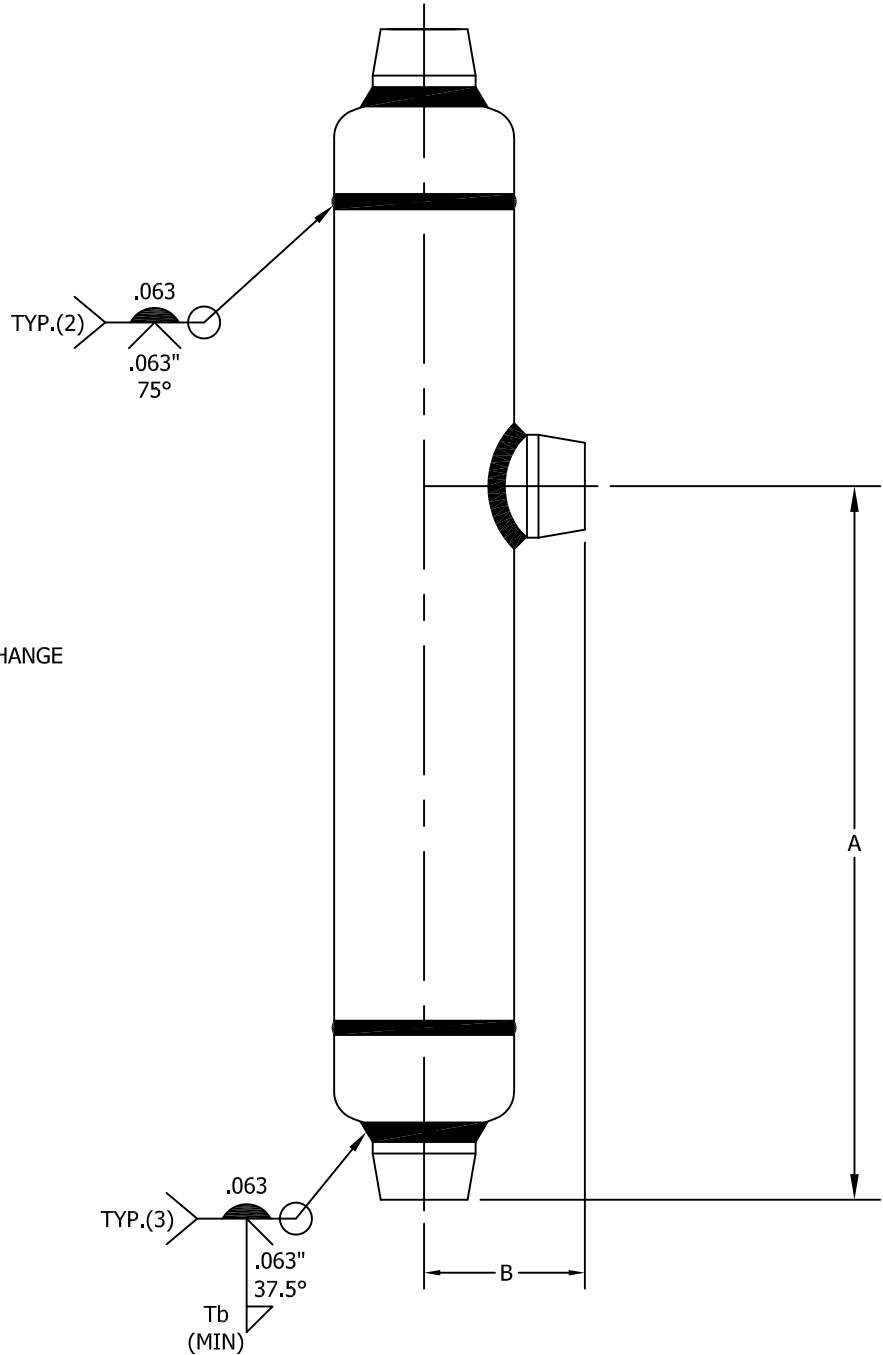
"J" FOR CHROME MOLY (9 Cr - 1 Mo)

- PIPE: A335 GR.91
- REINFORCED FITTING: A182 GR.F91
- CAP: A234 GR.WP91
- FLANGE: A182 GR.F91

"K" FOR CHROME MOLY (2.25 Cr - 1 Mo)

- PIPE: A335 GR.P22
- REINFORCED FITTING: A182 GR.F22
- CAP: A234 GR.WP22
- FLANGE: A182 GR.F22

2. ALL TABLE DIMENSIONS ARE STANDARD. MAY CHANGE ACCORDING TO CUSTOMER REQUIREMENTS.



1	12/19/2022	CHANGED ALL INSTANCES OF "C10" TO "1", ADD 2 GR. CrMo., ADD PART MAT'L DESC. IN NOTES: CDC 22-490	TBL
REV	DATE	CHANGE	BY

MANUFACTURED BY

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STRONGSVILLE, OH 44149 USA  
PH: 440-572-1500  
WEB: www.clarkreliance.com

**JERGUSON / MAGNESONICS®**

MAGNETIC LEVEL CHAMBER  
WELD DETAIL

DRAWN: KMB	
CHECKED:	
DATE: 12/7/2012	
REVISION: 1 PER CDC 22-490	
DRAWING NO.:	REV.:
CRN JB___/1	1



MODEL	A (1 & 2 SWITCHES)	B
JB_1F/2	14"	3-1/8"
JB_2F/2	14"	3-5/8"
JB_3F/2	14"	3-5/8"
JB_4F/2	14"	3-5/8"
JB_5F/2	14"	4-5/32"
JB_6F/2	14"	4-11/16"
JB_7F/2	14"	4-11/16"
JB_8F/2	14"	4-11/16"
JB_9F/2	14"	5-11/16"
JB_1D/2	14"	3-1/8"
JB_3D/2	14"	3-1/8"
JB_4D/2	14"	3-1/8"
JB_5D/2	14"	3-1/8"
JB_6D/2	14"	3-5/8"

NOTES:

1. " \_ " SYMBOL IN TABLE REPRESENTS MATERIAL,

"C" FOR CARBON STEEL

- PIPE: A106 GR.B
- REINFORCED FITTING: A105
- CAP: A234 GR.WPB
- FLANGE: A105

"S" FOR STAINLESS STEEL

- PIPE: A312 GR.TP316
- REINFORCED FITTING: A182 GR.F316L
- CAP: A403 GR.WP316
- FLANGE: A182 GR.F316L

"H" FOR CHROME MOLY (1.25 Cr - 0.5 Mo)

- PIPE: A335 GR.P11
- REINFORCED FITTING: A182 GR.F11
- CAP: A234 GR.WP11
- FLANGE: A182 GR.F11

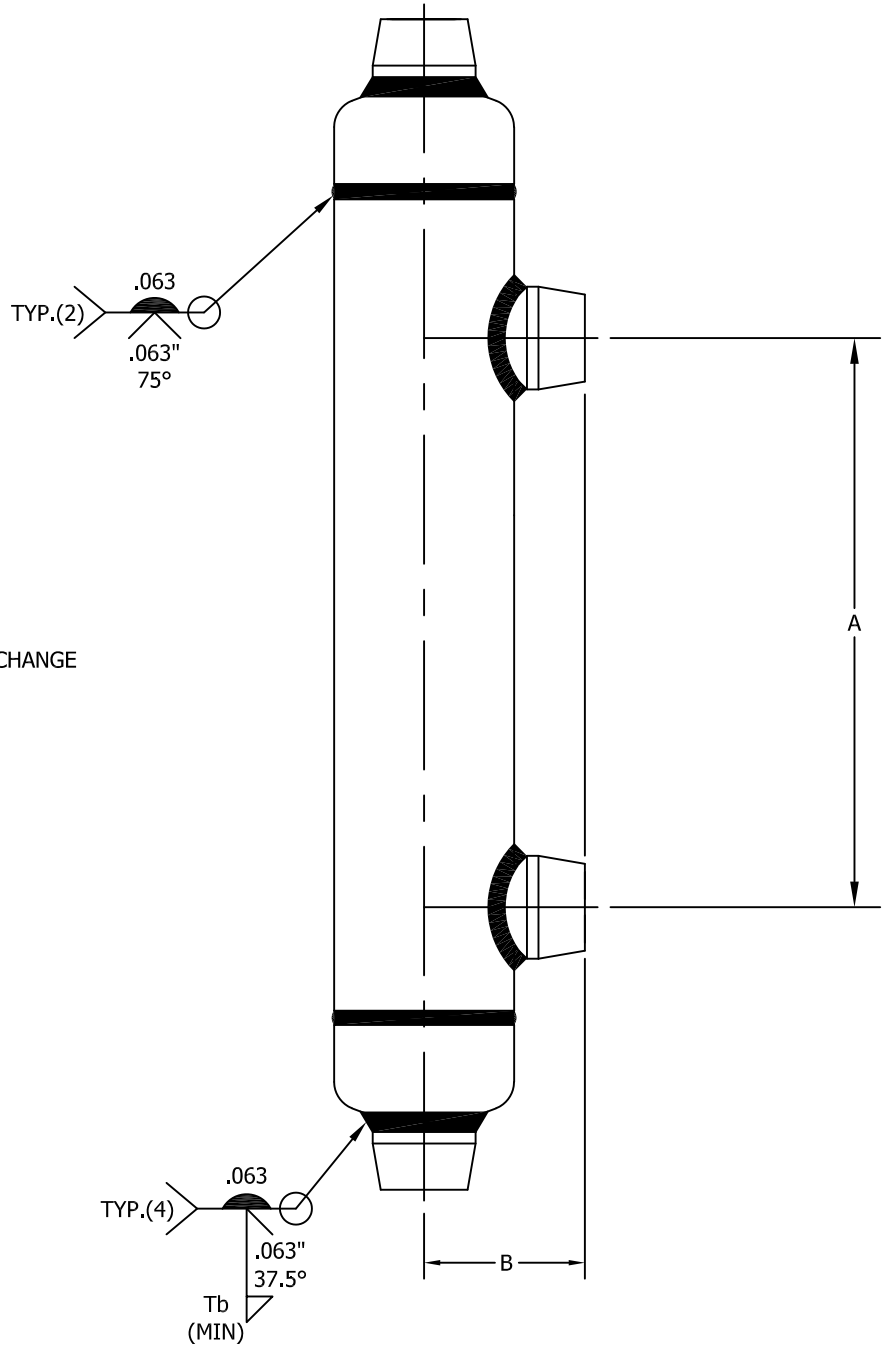
"J" FOR CHROME MOLY (9 Cr - 1 Mo)

- PIPE: A335 GR.91
- REINFORCED FITTING: A182 GR.F91
- CAP: A234 GR.WP91
- FLANGE: A182 GR.F91

"K" FOR CHROME MOLY (2.25 Cr - 1 Mo)

- PIPE: A335 GR.P22
- REINFORCED FITTING: A182 GR.F22
- CAP: A234 GR.WP22
- FLANGE: A182 GR.F22

2. ALL TABLE DIMENSIONS ARE STANDARD. MAY CHANGE ACCORDING TO CUSTOMER REQUIREMENTS.



1	12/19/2022	CHANGED ALL INSTANCES OF "C20" TO "2", ADD 2 GR. CrMo., ADD PART MAT'L DESC. IN NOTES: CDC 22-490	TBL
REV	DATE	CHANGE	BY

MANUFACTURED BY  
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 STRONGSVILLE, OH 44149 USA  
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**JERGUSON / MAGNESONICS®**  
 MAGNETIC LEVEL CHAMBER  
 WELD DETAIL

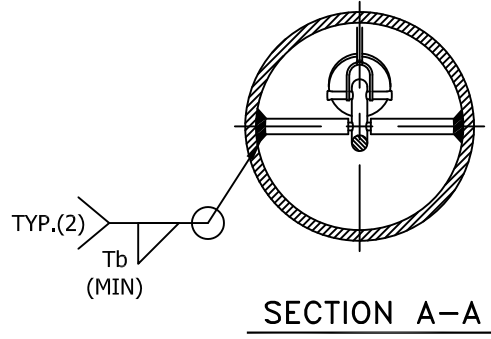
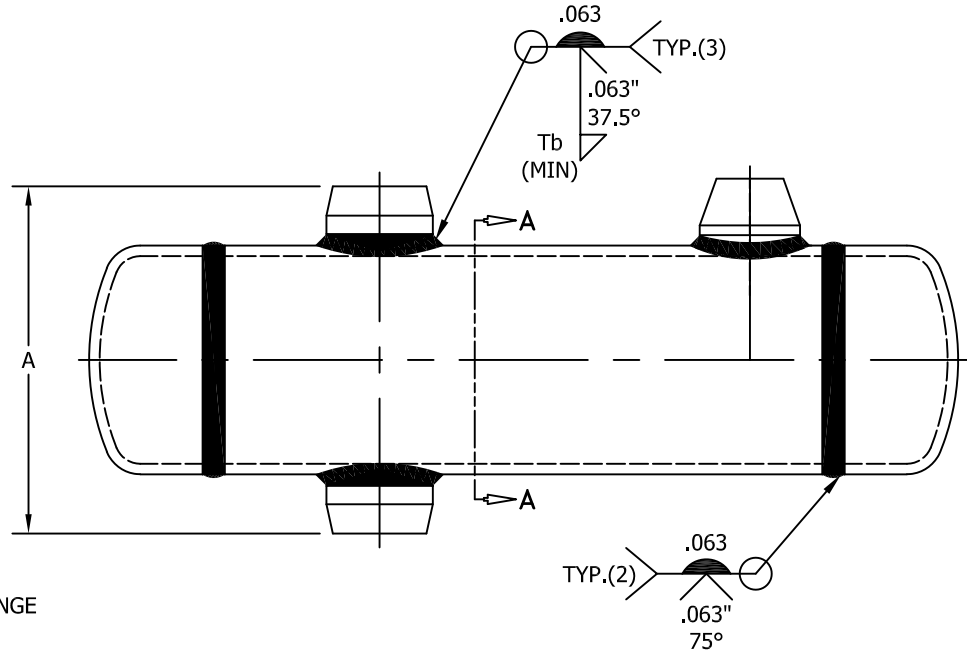
DRAWN: KMB	
CHECKED:	
DATE: 12/7/2012	
REVISION: 1 PER CDC 22-490	
DRAWING NO.:	REV.:
CRN JB__/2	1

MODEL	A
JH_8F/1	8-5/16"
JH_9F/1	8-5/16"
JH_10F/1	9-7/8"
JH_11F/1	9-7/8"
JH_12F/1	9-7/8"
JH_13F/1	9-7/8"

**NOTES:**

- "\_" SYMBOL IN TABLE REPRESENTS MATERIAL,
  - "C" FOR CARBON STEEL
    - PIPE: A106 GR.B
    - REINFORCED FITTING: A105
    - CAP: A234 GR.WPB
    - FLANGE: A105
  - "S" FOR STAINLESS STEEL
    - PIPE: A312 GR.TP316
    - REINFORCED FITTING: A182 GR.F316L
    - CAP: A403 GR.WP316
    - FLANGE: A182 GR.F316L
  - "H" FOR CHROME MOLY (1.25 Cr - 0.5 Mo)
    - PIPE: A335 GR.P11
    - REINFORCED FITTING: A182 GR.F11
    - CAP: A234 GR.WP11
    - FLANGE: A182 GR.F11
  - "J" FOR CHROME MOLY (9 Cr - 1 Mo)
    - PIPE: A335 GR.91
    - REINFORCED FITTING: A182 GR.F91
    - CAP: A234 GR.WP91
    - FLANGE: A182 GR.F91
  - "K" FOR CHROME MOLY (2.25 Cr - 1 Mo)
    - PIPE: A335 GR.P22
    - REINFORCED FITTING: A182 GR.F22
    - CAP: A234 GR.WP22
    - FLANGE: A182 GR.F22

2. ALL TABLE DIMENSIONS ARE STANDARD. MAY CHANGE ACCORDING TO CUSTOMER REQUIREMENTS.



1	12/16/2022	ADD 3 M# (JH_11F - 13F), ADD 2 GR. CrMo "C10" -> "1", FIXED "-10F" 'A' DIM, ADD PART MAT'L DESCRIPTION IN NOTES: CDC 22-490	TBL
REV	DATE	CHANGE	BY

MANUFACTURED BY

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 STRONGSVILLE, OH 44149 USA  
 PH: 440-572-1500  
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**JERGUSON®**

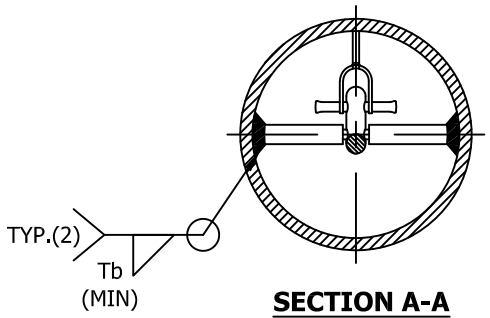
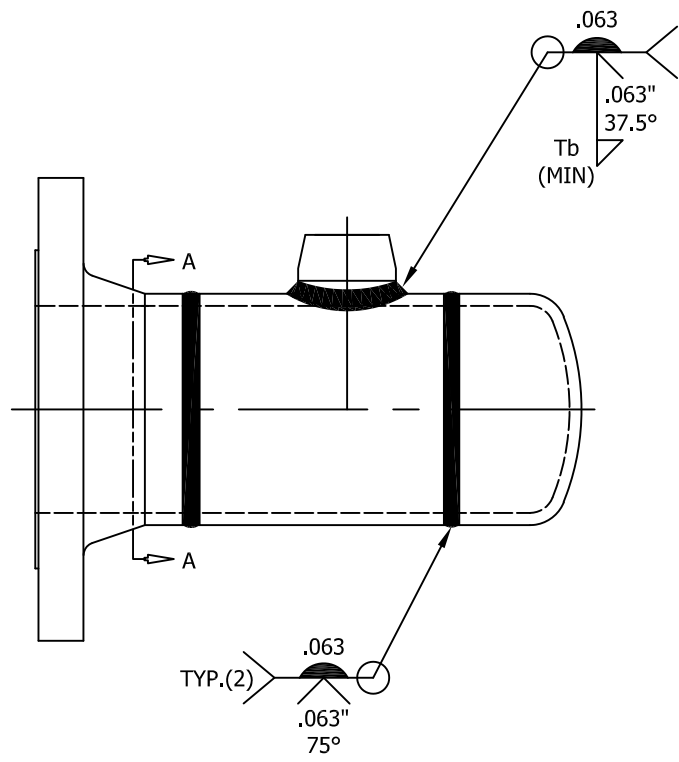
**HORIZONTAL  
 MAGNETIC LEVEL CHAMBER**

DRAWN: KMB	
CHECKED:	
DATE: 7/17/2012	
REVISION: 1 PER CDC 22-490	
DRAWING NO.:	REV.:
CRN JH__F/1	1

MODEL
JH_1F
JH_2F
JH_3F
JH_4F

NOTES:

- "\_" SYMBOL IN TABLE REPRESENTS MATERIAL,
  - "C" FOR CARBON STEEL
    - PIPE: A106 GR.B
    - REINFORCED FITTING: A105
    - CAP: A234 GR.WPB
    - FLANGE: A105
  - "S" FOR STAINLESS STEEL
    - PIPE: A312 GR.TP316
    - REINFORCED FITTING: A182 GR.F316L
    - CAP: A403 GR.WP316
    - FLANGE: A182 GR.F316L
  - "H" FOR CHROME MOLY (1.25 Cr - 0.5 Mo)
    - PIPE: A335 GR.P11
    - REINFORCED FITTING: A182 GR.F11
    - CAP: A234 GR.WP11
    - FLANGE: A182 GR.F11
  - "J" FOR CHROME MOLY (9 Cr - 1 Mo)
    - PIPE: A335 GR.91
    - REINFORCED FITTING: A182 GR.F91
    - CAP: A234 GR.WP91
    - FLANGE: A182 GR.F91
  - "K" FOR CHROME MOLY (2.25 Cr - 1 Mo)
    - PIPE: A335 GR.P22
    - REINFORCED FITTING: A182 GR.F22
    - CAP: A234 GR.WP22
    - FLANGE: A182 GR.F22



1	12/21/2022	ADD CrMo GRADES AND ADD PART MAT'L DESC. IN NOTES: CDC 22-490	TBL
REV	DATE	CHANGE	BY

MANUFACTURED BY

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 PH: 440-572-1500  
 WEB: www.clarkreliance.com

**JERGUSON / MAGNESONICS®**

FLOAT OPERATED  
 HORIZONTAL MAGNETIC LEVEL SWITCH

DRAWN: KMB	
CHECKED:	
DATE: 2/14/2013	
REVISION: 1 PER CDC 22-490	
DRAWING NO.: CRN JH__F	REV.: 1

MODEL	A (1 SWITCH)	A (2 SWITCH)	B
JX_1F/1	8-1/2"	11-1/2"	3-1/8"
JX_2F/1	10"	13"	3-5/8"
JX_3F/1	10"	13"	3-5/8"
JX_4F/1	10"	13"	3-5/8"
JX_5F/1	10"	13"	3-5/8"
JX_6F/1	10"	13"	4-11/16"
JX_7F/1	10"	13"	4-11/16"
JX_8F/1	10"	13"	4-11/16"
JX_9F/1	12-1/2"	15-1/2"	5-11/16"
JX_1D/1	8-3/8"	N/A	3-1/8"
JX_3D/1	13-7/8"	N/A	3-1/8"
JX_4D/1	13-7/8"	N/A	3-1/8"
JX_5D/1	13-7/8"	N/A	3-1/8"
JX_6D/1	13-1/8"	N/A	3-5/8"

NOTES:

1. "-" SYMBOL IN TABLE REPRESENTS MATERIAL,

"C" FOR CARBON STEEL

- PIPE: A106 GR.B
- REINFORCED FITTING: A105
- CAP: A234 GR.WPB
- FLANGE: A105

"S" FOR STAINLESS STEEL

- PIPE: A312 GR.TP316
- REINFORCED FITTING: A182 GR.F316L
- CAP: A403 GR.WP316
- FLANGE: A182 GR.F316L

"H" FOR CHROME MOLY (1.25 Cr - 0.5 Mo)

- PIPE: A335 GR.P11
- REINFORCED FITTING: A182 GR.F11
- CAP: A234 GR.WP11
- FLANGE: A182 GR.F11

"J" FOR CHROME MOLY (9 Cr - 1 Mo)

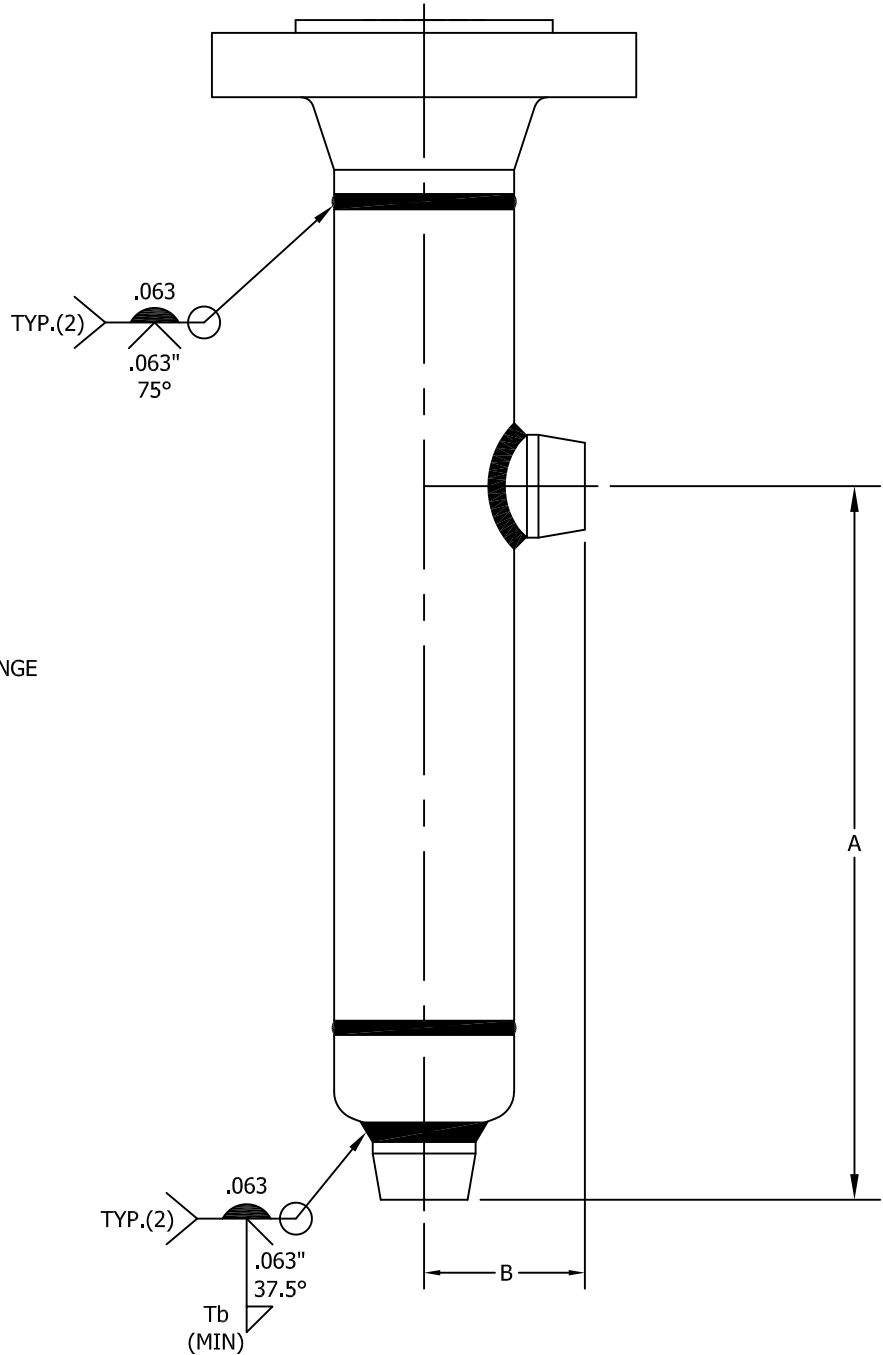
- PIPE: A335 GR.91
- REINFORCED FITTING: A182 GR.F91
- CAP: A234 GR.WP91
- FLANGE: A182 GR.F91

"K" FOR CHROME MOLY (2.25 Cr - 1 Mo)

- PIPE: A335 GR.P22
- REINFORCED FITTING: A182 GR.F22
- CAP: A234 GR.WP22
- FLANGE: A182 GR.F22

2. ALL TABLE DIMENSIONS ARE STANDARD, MAY CHANGE ACCORDING TO CUSTOMER REQUIREMENTS.

3. JDT\_# UNITS DO NOT CONTAIN SWITCHES.



1	12/19/2022	CHANGED "C10" TO "1", ADD 2 GR. CrMo., ADD PART MAT'L DESC. IN NOTES, REMOVE JDT MODELS: CDC 22-490	TBL
REV	DATE	CHANGE	BY

MANUFACTURED BY  
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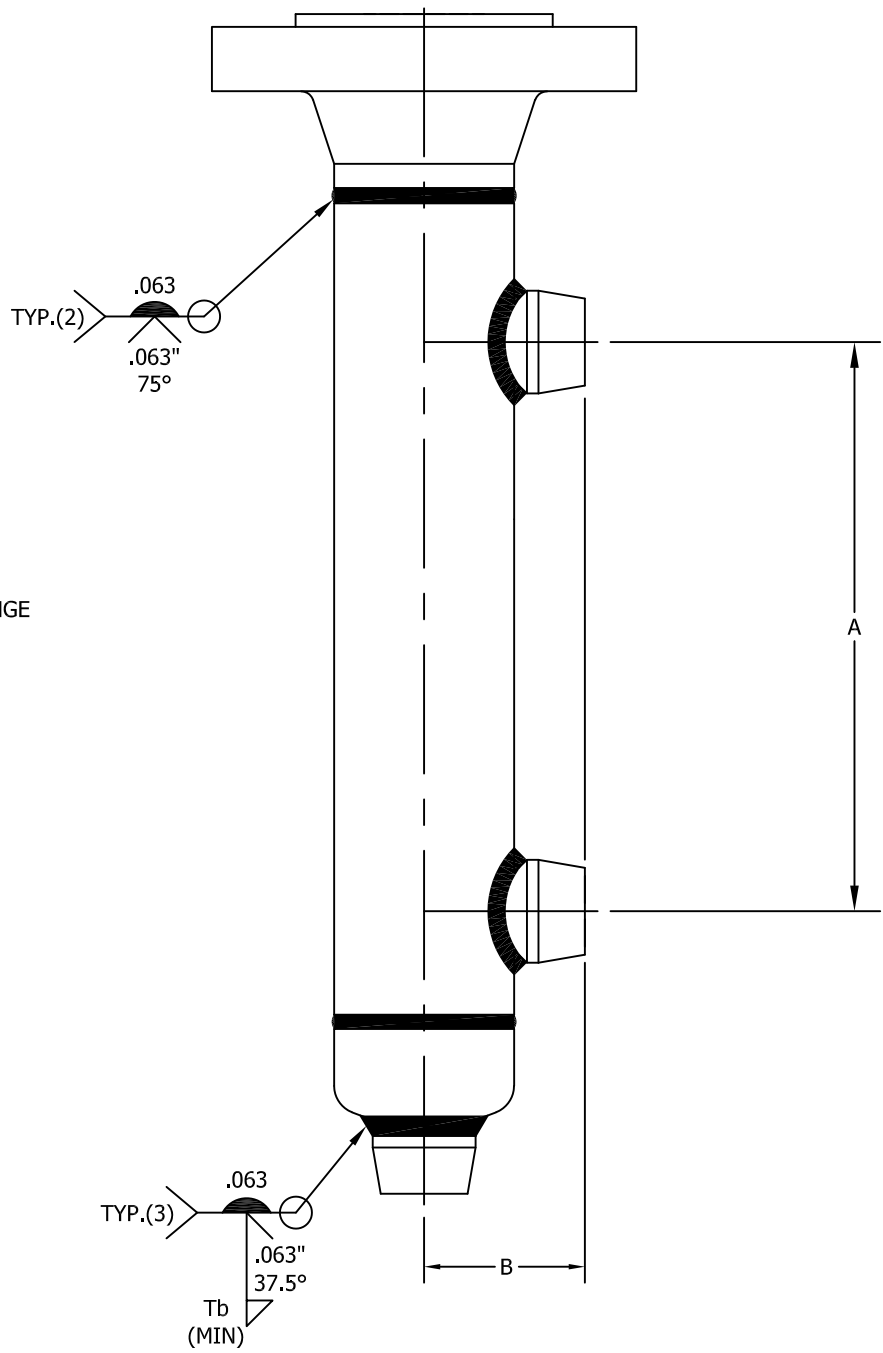
**JERGUSON / MAGNESONICS®**

MAGNETIC LEVEL CHAMBER  
 WELD DETAIL

DRAWN: KMB	
CHECKED:	
DATE: 12/7/2012	
REVISION: 1 PER CDC 22-490	
DRAWING NO.: CRN JX___/1	REV.: 1

MODEL	A (1 & 2 SWITCHES)	B
JX_1F/2	14"	3-1/8"
JX_2F/2	14"	3-5/8"
JX_3F/2	14"	3-5/8"
JX_4F/2	14"	3-5/8"
JX_5F/2	14"	4-5/32"
JX_6F/2	14"	4-11/16"
JX_7F/2	14"	4-11/16"
JX_8F/2	14"	4-11/16"
JX_9F/2	14"	5-11/16"
JX_1D/2	14"	3-1/8"
JX_2D/2	14"	3-1/8"
JX_4D/2	14"	3-1/8"
JX_5D/2	14"	3-1/8"
JX_6D/2	14"	3-5/8"

- NOTES:
- "\_" SYMBOL IN TABLE REPRESENTS MATERIAL,
    - "C" FOR CARBON STEEL
      - PIPE: A106 GR.B
      - REINFORCED FITTING: A105
      - CAP: A234 GR.WPB
      - FLANGE: A105
    - "S" FOR STAINLESS STEEL
      - PIPE: A312 GR.TP316
      - REINFORCED FITTING: A182 GR.F316L
      - CAP: A403 GR.WP316
      - FLANGE: A182 GR.F316L
    - "H" FOR CHROME MOLY (1.25 Cr - 0.5 Mo)
      - PIPE: A335 GR.P11
      - REINFORCED FITTING: A182 GR.F11
      - CAP: A234 GR.WP11
      - FLANGE: A182 GR.F11
    - "J" FOR CHROME MOLY (9 Cr - 1 Mo)
      - PIPE: A335 GR.91
      - REINFORCED FITTING: A182 GR.F91
      - CAP: A234 GR.WP91
      - FLANGE: A182 GR.F91
    - "K" FOR CHROME MOLY (2.25 Cr - 1 Mo)
      - PIPE: A335 GR.P22
      - REINFORCED FITTING: A182 GR.F22
      - CAP: A234 GR.WP22
      - FLANGE: A182 GR.F22
  - ALL TABLE DIMENSIONS ARE STANDARD. MAY CHANGE ACCORDING TO CUSTOMER REQUIREMENTS.
  - JDT\_# UNITS DO NOT CONTAIN SWITCHES.



1	12/19/2022	CHANGED "C10" TO "1", ADD 2 GR. CrMo., ADD PART MAT'L DESC. IN NOTES, REMOVE JDT MODELS: CDC 22-490	TBL
REV	DATE	CHANGE	BY

MANUFACTURED BY

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STRONGSVILLE, OH 44149 USA  
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WEB: www.clarkreliance.com

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MAGNETIC LEVEL CHAMBER  
WELD DETAIL

DRAWN: KMB	
CHECKED:	
DATE: 12/7/2012	
REVISION: 1 PER CDC 22-490	
DRAWING NO.: CRN JX__/2	REV.: 1



ASSEMBLY: PRESSURE TUBE:  
 SA4/SA7/SI7 ENCLOSURE

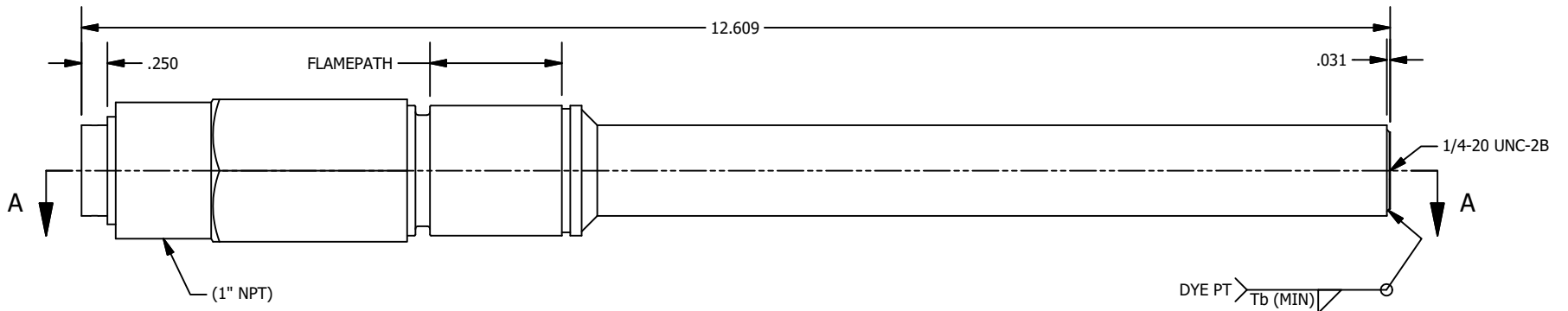
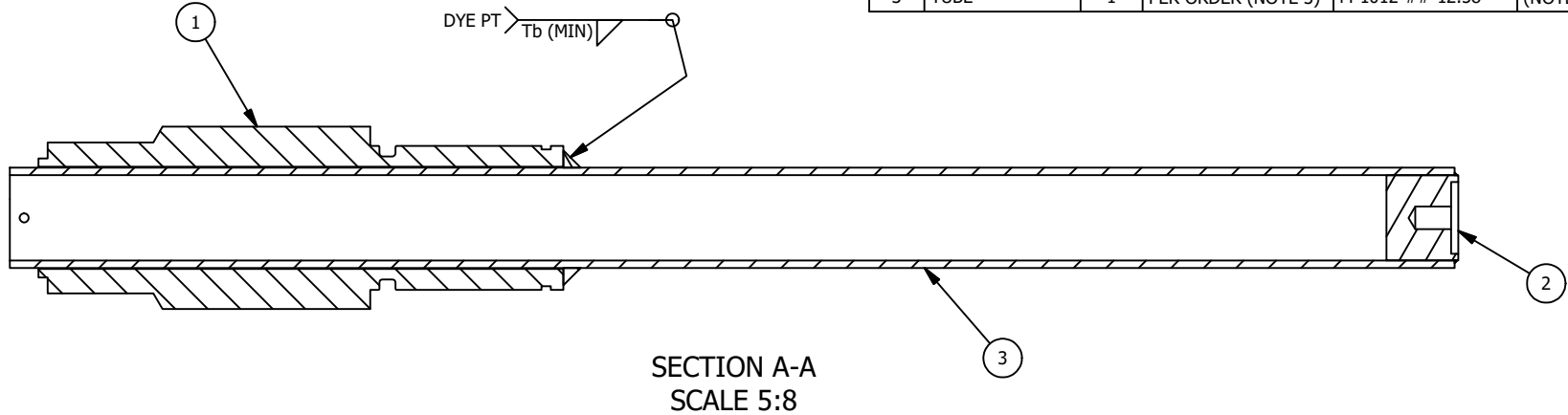
**JERGUSON**<sup>®</sup>

DRAWN: <b>KBeargie</b>	DRAWING NO.:	REV.:
CHECKED: <b>MBV</b>	<b>B-1005</b>	<b>3</b>
DATE: <b>11/11/2015</b>	REVISION: <b>3 PER CDC 17-017 SH 1/19/17</b>	
MATERIAL: <b>PER PART NO. (NOTE 1)</b>		
TOLERANCE CLASS (PER PES-004): <b>B</b>		
PART NUMBER: <b>B-1005-(NOTE 1)</b>		

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**BILL OF MATERIAL**

NO.	NAME OF PART	QTY.	MATERIAL	COMPONENT P/N	REMARKS
1	ADAPTER	1	PER ORDER (NOTE 2)	M-1049-##	(NOTES 1, 1b, & 1bi)
2	PLUG	1	PER ORDER (NOTE 3)	M-1017-##	(NOTES 1, 1b, & 1bi)
3	TUBE	1	PER ORDER (NOTE 3)	M-1012-##-12.58	(NOTES 1, 1b, & 1bi)



NOTES:

- P/N SCHEME: B-1005-(MAT'L)(MAT'L RESTRICTION)
  - MAT'L: '00' = CARBON/316SS, '13' = 316SS, '82' = INC625
  - MAT'L RESTRICTION: (OMITTED) = NO RESTRICTION, 'W' = REGIONALLY RESTRICTED, 'P' = PED, 'D' = DUAL (BOTH 'W' & 'P')
  - WHEN INVOKED, COMPONENT P/N ALSO CARRIES THE SAME ADDITIONAL MARKING.
- ADAPTOR MATERIAL: CARBON STEEL, 316SS, OR INC625
- TUBE AND PLUG MATERIALS: 316SS OR INC625
- FLAMEPATH MUST BE PROTECTED AND FREE FROM DAMAGE AT ALL TIMES.
- AGENCY CONTROLLED DOCUMENT.

3	6/12/2018	CHANGED DRAWING ORIENTATION, ADDED ALL NOTES, CHANGED MATERIAL COLUMN TO SAY PER ORDER, ADDED REV BLOCK, CHANGED FLAMEPATH LENGTH CALLOUT, ADDED DYE PENETRANT TEST, ADDED SECTION VIEW	SH/DMB
REV	DATE	REVISION	BY