

# LPG Truck Equipment

***Kosan Crisplant is able to offer  
LPG bulk transport trailers and  
bobtail delivery trucks as well  
as all necessary equipment  
and accessories that are  
needed for a safe and efficient  
operation.***

In order to build a bobtail truck / trailer or simply make the necessary regular maintenance, several special products are needed. According to different countries or customer specifications, you may need part of the bellow products:

- Internal valves and accessories
- Automatic internal valves for bobtail delivery trucks, transports and large stationary storage tanks
- Full Internal Pressure Relief Valves for bobtail delivery trucks and transport
- Level gauging bobtail delivery trucks and transports – Manual and Magnetic
- Globe Valves and Angle Valves – See chapter 3
- Ball Valves – See chapter 6
- Pumps for Bobtail delivery trucks and transport
- By Pass valves for bobtail delivery trucks and transports
- Filters – See chapter 3
- Excess Flow Valves – See chapter 2
- Check Lock – See chapter 2
- Hose end Valves
- Meters for bobtail delivery trucks and transports
- Reels
- Hoses – See chapter 3

The range Kosan Crisplant is offering is complete and matches several specifications and different demands from various markets. Nevertheless, if you do not find what you need on the following pages, we kindly ask you to contact us. We will do our best to provide the best solution for your need.

For proper support contact one of the KC offices closest to your location.

## Application

Depending on size and capacity, they are installed on LPG bobtail delivery trucks, LPG transport trucks or even large stationary storage tanks, flanged pumps or piping. This kind of valves may close automatically when the flow is higher than a certain value or when the differential pressure of the pump unit drops drastically.

Internal valve operation may be manual, pneumatic or by cable. Pneumatic actuators work with pressurized air or Nitrogen from 3,44 bar to 10,34 bar and they are equipped with a thermal fuse for thermal protection.

The possibility of right or left lever on the 3" size allows easy installation without the need of extra pulley. On the cable application, a remote thermal release may be applied to ensure the closure of the valve in case of high temperature.

### 3" FLANGED INTERNAL VALVE FOR BOBTAIL DELIVERY TRUCKS, TRANSPORTS AND LARGE STATIONARY STORAGE TANKS

REGO Part Number		Lever position	Inlet connection	Outlet connection	LPG Closing flow (l/min)	Pneumatic actuator
Single flange body	Double flange body					
A3217FR160	A3217DFR160	Right	3" ANSI 300 RF modified flange *	3 " ANSI 300 RF Flange	605	A3217FPA
A3217FL160	A3217DFL160	Left				A3217FLPA
A3217FR210	A3217DFR210	Right			795	A3217FPA
A3217FL210	A3217DFL210	Left				A3217FLPA
A3217FR260	A3217DFR260	Right			984	A3217FPA
A3217FL260	A3217DFL260	Left				A3217FLPA
A3217FR410	A3217DFR410	Right			1551	A3217FPA
A3217FL410	A3217DFL410	Left				A3217FLPA

### 4" FLANGED INTERNAL VALVE FOR TRANSPORTS AND LARGE STATIONARY STORAGE TANKS

REGO Part Number	Inlet connection	Outlet connection	LPG Closing flow (l/min)	Pneumatic actuator	Remote thermal release
A3219FA400L	4" ANSI 300 RF modified flange **	4" ANSI 300 RF flange	1514	A3219FPA	A3219RT(2)
A3219FA600L			2271		

\* (Modified bore - 4 5/8" diameter with 5 3/4" diameter raised face)

\*\* (Modified bore - 5 7/8" diameter with 7" diameter raised face)



A3217FPA on A3217FR Single Flange Valve



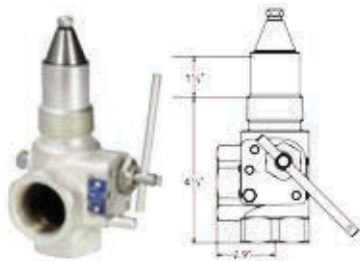
A3217FPA



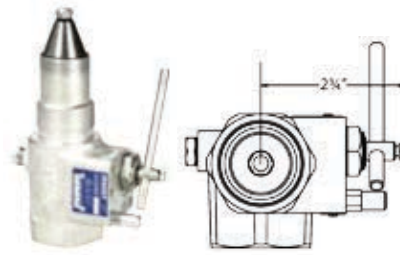
A3217 FR Series

### 1 1/4" THREADED INTERNAL VALVE FOR SMALL CAPACITY PUMPING SYSTEMS AND BOBTAIL VAPOR EQUALIZATION

Rego Part Number	Inlet connection	Outlet connection	LPG Closing flow (l/min)	Propane Vapour Capacity (m3/h)		Thermal Latch	Pneumatic Actuator
				@1.72bar	@6.89bar		
A3209D050	1 1/4"		189	376	648	A3209TL	A3209PA A3209PAF
A3209D080			302	444	756		
A3209DT050			189	376	648		
A3209DT080			302	444	756		



A3209DT



A3209DT

### 3" THREADED INTERNAL VALVE FOR BOBTAIL DELIVERY TRUCKS, TRANSPORTS AND STATIONARY STORAGE TANKS

Rego Part Number	Connections (NPT)		Closing flow (l/min)		Propane Vapour Capacity (m3/h)		Aproximate Dimensions (mm)						Accessories	
	Inlet M	Outlet F	Half coupling	Full coupling	@1.72bar	@6.89bar	A	B	C	D	E	F	Thermal Latch	Pneumatic Actuator
A3213R150	3"		567	473	-	-	38	149	108	-	-	181	A3213TL	A3213PA
A3213R200			757	605	1248	2127								
A3213R300			1135	946	1639	2562								
A3213R400			1514	1230	2021	3434								
A3213RT150			567	473	-	-	38	202	108	98	114	89		
A3213RT200			757	605	1248	2127								
A3213RT300			1135	946	1639	2562								
A3213RT400			1514	1230	2021	3434								

### 2" THREADED INTERNAL VALVE FOR BOBTAIL DELIVERY TRUCKS, TRANSPORTS AND STATIONARY STORAGE TANKS

Rego Part Number	Connections (NPT)		Closing flow (l/min)		Accessories	
	Inlet M	Outlet F	Half coupling	Full coupling	Thermal Latch	Pneumatic Actuator
A3212R105	2"		397	246	A3213TL	A3213PA
A3212RT105						
A3212R175			662	378		
A3212RT175						
A3212R250			946	492		
A3212RT250						



A3213R



A3212R

# Automatic Internal Valves for Bobtail Delivery Trucks, Transports and Large Stationary Storage Tanks

## Application

They may be used on bobtail delivery trucks, transports or large stationary tanks. The operation of this kind of valve is fully automatic as the opening or closing is synchronized with pump on/off position using the built-in differential pressure.

In case of excess flow, causing extreme decrease of pump differential pressure, the valve will close. Main advantages of using this kind of valve are: improper sizing of excess flow valve is eliminated, elimination of operator's errors, cable problems never occur, easily built-in filter, no need of cables or air lines checking, etc.

This kind of valve has built-in visual indicator in order to recognize if the valve is open or closed.



A783FK

### FLOMATIC INTERNAL VALVE FOR BOBTAIL DELIVERY TRUCKS, TRANSPORTS AND LARGE STATIONARY STORAGE TANKS

Rego Part Number	Inlet connection	Outlet connection	Strainer width (mm)	Base Width (mm)	Height (mm)	Height from indicator to base (mm)	Included accessories	
							Filter	3-way valve
A7883FK	3" – ANSI 300 *	3" – ANSI 300	120	209	276	122	A7884-201	A7853A
A7884FK	4" – ANSI 300 **	4" – ANSI 300	146	254	285	125		

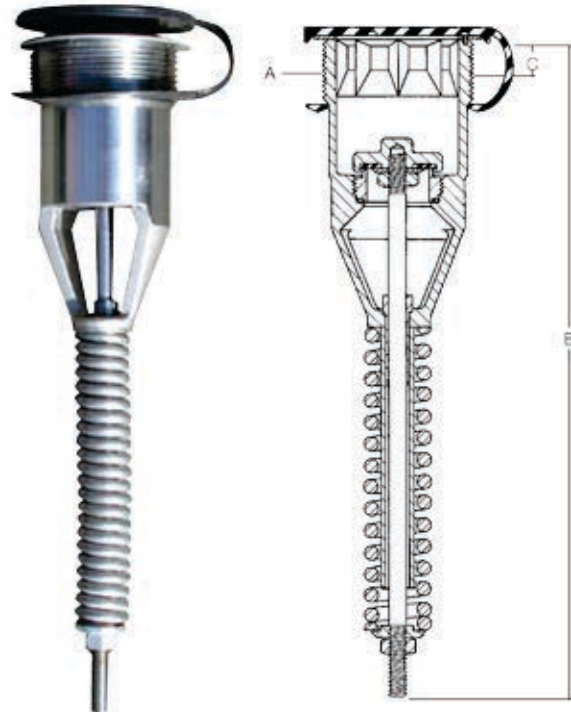
\* (With 4 13/16" diameter bore)  
 \*\* (With 5 13/16" diameter bore)

# Full Internal Relief Valves for Bobtail Delivery Trucks and Transports

## Application

They are installed as primary relief valves on bobtails or transport trucks. In this case, relief valves should be fully installed internally to the container (full internal relief valve), this means that all parts of the valve such as spring, guide, etc. are located below the container connection in order to reduce the risk of damage.

The valve can be installed or removed using an octagonal wrenching broach. The main advantage compared to ordinary relief valves is the Pop-Action design that permits the slight opening when there is a moderate pressure increase and a full "pop" opening when there is a pressure increase beyond a predetermined point. Trucks normally use some other small PRV. For other models of pressure valves consult Section C.



A8434-SERIES

Rego Part Number	Start to discharge setting (bar) (Approx.)	Container connection A	Approximate dimensions (mm)		Air flow capacity at 120% of set pressure (m3/h) *		Application up to surface area** (Approx.)	Protective cap Included
			B	C	UL	ASME		
A8434N	18,27	2" M NPT	230	12,70	104	103	16	A8434-11B
A8434G	17,24					97		
A8436N	18,27	3" M NPT	454	19,05	289	271	55	A8436-11B
A8436G	17,24							

\* Other settings under request

\*\* According NFPA Pamphlet #58, Appendix D. Surface area is for UL or ASME flow rate – whichever is large

# Level Gauging - Manual & Magnetic

## Application of Manual Gauging

Assures accurate information about LPG level inside the tank.

They can be installed in end or side mounting position depending on model / tank size with 3/4" or 1" male adapter.

During measuring operation, the vent valve must be open and the dip tube should be rotated slowly from the vapor side of the storage tank to the liquid side.

The liquid discharge informs that the liquid was reached by deep tube. At this point, dial indicates the level of liquid.

A compensation temperature scale is printed on the dial in order to avoid over filling

Rego Part Number		Inside diameter limits (mm)			Tank connection	Dial
For mobile or stationary tanks	For stationary tanks	Ellipsoidal heads		Hemispherical heads		
		Side mounted	End mounted	Side & End mounted		
9091RM24	-	762-1143	762-1905	762-1143	1"	A9091-18L – All sizes A9001-18LX – Over 4,6m3
9092RM36	-	1168-1549	1930-2743	1168-1549		
9093TSM48*	9093RSM48	1574-2006	2768-3733	1574-2006		
9094TSM60*	9094RSM60	2032-2514	-	2032-2514		
9095TSM72*	9095RSM72	2540-3733	-	2540-3733		
+2070CO	-	-	-	1016	3/4"	Included
+2070CO	-	-	-	1524		

9090 series – Dip tube must be cut at the length of 1/2 ID – 146,05mm

2070 series - Dip tube must be cut at the length of 1/2 ID – 12,70mm when center line mounted

\* - Supported design



Rotogage® Assembly



2070 Series

Another way of measuring the level of LPG inside the container is by using the vent valves.

This kind of accessory is normally used in order to realize when the liquid reaches the maximum allowable level by attaching the vent valve to a fixed and predetermined length of dip tube.

When liquid appears (bleed), the filling operation should be stopped immediately.

Rego Part Number	Connection	Warning name plate
3165C	1/4" M NPT	2550-40P
3165S		
TSS3169		



3165C



3165S



TSS3169

# Level Gauging Bobtail Delivery Trucks and Transports - Manual & Magnetic

## Application of Magnetic Gauging

By using a float it is possible to have permanent information about liquid level inside the tank.

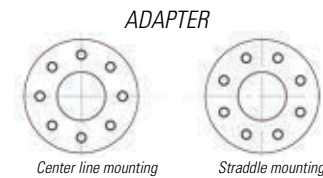
The transmission from the mobile parts to the dial is made by magnetic coupling, this means that there is no mechanical connection between the dial pointer and the parts inside the tank, which makes it possible to exchange a damaged dial by a new one without the need of gas evacuation.

Dial should have compensation scale for temperature and different density of the LPG.

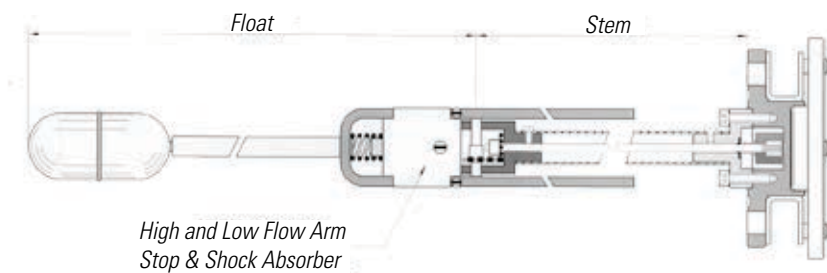
For mobile application, a spring shock absorber is used to eliminate the vibrations. For correct sizing it is necessary to provide: (i) internal and external tank diameter (ii) riser dimension (iii) mounting position (iv) typical pressure and temperature.

## Mounting

Information about mounting position is required: In case of straddle mounting order add a suffix "X" to the model number.



Part Number	Mounting	Dial (5 to 95%)	Head	Support center shaft Float arm	Counter balance	Magnet	Gears	Gasket	Applications
M633911	Side, End Angle up to ±45°	100mm	SS	SS	Cadmium plated steel	AlNiCo	SS	Teflon Filles 304 SS Spiral wound	LPG and others
M634211									



## Replacement of Rotogage

A magnetic gauge version is available, too, for substitution of the manual rotary dip tube gauge described earlier. In this case, there is a thread 1" NPT adapter that may be connected to the tank.

The dial is supplied with 100 mm dial. Depending on the application, aluminium and stainless steel constructions are available for stationary tanks up to 2200mm diameter.

Tank diam.	Application	Model	Head&Body, Gear Housing	Float bulb	Gasket
300-2000	Stationary	P6293	Aluminium, Plastic	Nitril rubber	Buna-N
2001-2200	Stationary	P6493	Stainless Steel	Stainless Steel	Teflon/St. St
300-1500	Mobile	P6493	Stainless Steel	Stainless Steel	Teflon/St. St.



P6293



# Pumps for Bobtail Delivery Trucks and Transports

## Application

The most well-known pump application on bobtails or transport trucks is the vane type as this is specifically designed to operate on the very demanding conditions such as high differential pressure, pump overspeeding, poor suction conditions and the high loads from PTO systems that, anyway, may be avoided in case of hydraulic motor installation.

Furthermore, depending on each location, specific conditions may occur, such as long distances, big level differences between truck pump and tank as well as important flow restrictions on the filling valves. Appropriate vane pump selection will overcome these restrictive piping arrangements.

Factory adjusted internal pressure relief valve allows to keep capacity at differential pressures, and the setting should not be changed. Easy mechanical seal replacement and long life of auto adjusted vanes make the maintenance simple

Pump Speed (RPM)	Differential Pressure (bar)	Approximate flow capacity (l/min)	Motor required	Pump Torque Required (N.m)
<b>Z2000</b>				
500	3.45	197	1.4	27.7
500	6.89	174	2.9	55.3
600	3.45	238	1.7	27.7
600	6.89	208	3.5	55.3
650	3.45	261	1.9	27.7
650	6.89	231	3.8	55.3
750	3.45	303	2.2	27.7
750	6.89	265	4.3	55.3
<b>Z3200</b>				
500	6.89	235	4,3	82,6
500	3,45	265	2,8	54,1
600	6,89	288	5,9	87,9
600	3,45	326	3,7	56
650	6,89	318	6,1	89,9
650	3,45	360	3,9	57
750	6,89	3,75	7,4	94
750	3,45	424	4,6	58,9
<b>Z4200</b>				
500	6,89	787	12,4	237,3
500	3,45	893	6,2	118
600	6,89	961	14,8	237,3
600	3,45	1094	7,3	118
650	6,89	1052	16,1	237,3
650	3,45	1196	8	118
750	6,89	1230	18,6	237,3
750	3,45	1397	9,3	118

Part Number	Corken Coro-Vane® Z Series Pumps		
Model	Z2000	Z3200	Z4200
Inlet	2" NPT	3" ANSI 300	4" ANSI 300
Outlet	2"		
	NPT	NPT EII	Dual NPT
Max RPM	800		
Temp.	Min.	-32 °C	
	Max.	107 °C	
Max. Working Pressure	28.6 bar		
Max. Differential Pressure	8.6 bar		
Outlet Flange Option	No	Yes	No
Internal Relief Valve	Yes		
Steel Slip-on flange option			



Z2000



Z3200



Z4200

Approximate flow capacities based on vapor equalizing propane systems without pressure loss in pump suction piping. Restrictions in suction piping such as valves and elbows, missing vapor line (or restriction) or temperatures lower than 21°C will decrease the capacity. The decrease of capacity is related to thermodynamic characteristics of LPG.

# Bypass Valves

## Application

Bypass valves are typically used to protect the pump by returning the LPG to the tank when there is a pressure increase.

Depending on size, flow capacity, setting and application, there are several models that may be applied.

Setting of the pressure should be possible by the adjustment of different springs. Some models may require pressure sensor line.

Corken bypass valve	B166B	T166	ZV200	B177
Inlet	¾"; 1"	1 ¼"	2" (standard)	2", 2 ½"
Outlet		1 ½"		
Slip-on flange option	No	No	Yes	
Differential pressure range (bar)	1.7 – 15.5	1.7 – 15.5	2.8-10.3	0.7-8.6
O-ring options	Buna N (others on request)			



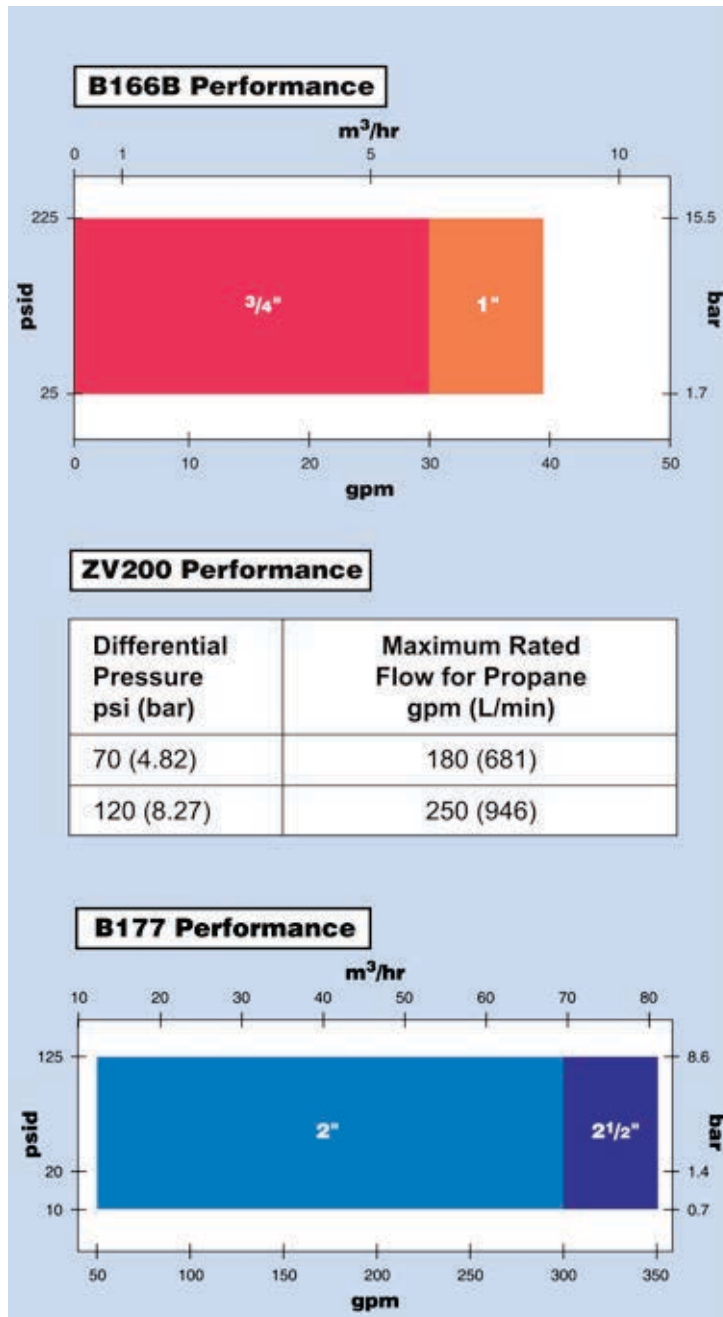
B166B



ZV200



B177



## Application

Hose end valves are installed at the end of the hose to create the connection to the tank filler valve.

Being specially designed to minimize the product loss on each filling operation, they are able to open fully when the handle is flipped and shut off instantaneously the opposite way. 360° rotation handle, lock handle feature and easy grip of the filling connector ensure friendly use and high safety standards.



Rego Part Number	Body	Connections (Female)		Locking Handle	Cv* @ 0.069bar (l/min) Propane	Filling connectors		
		Inlet	Outlet			Extended		Compact
						Steel	Brass	
A7793A	Angle	¾"	1 ¾"	Yes	60.5	-		
A7797A		1"						
A7707L	Globe	1"			68.1	A7575L4	3175A	A3175A
A7708L	Angle				83.3			

\* - To obtain flow rate for pressure drop values other than 0.069, multiply CV by square root of desired pressure drop x 14.5.



A7708L



A7707L

# Meters for Bobtail Delivery Trucks and Transports

## Application

LPG meter systems are necessary to measure the quantity of gas delivered by the bobtail or bulk transport trailers to each location.

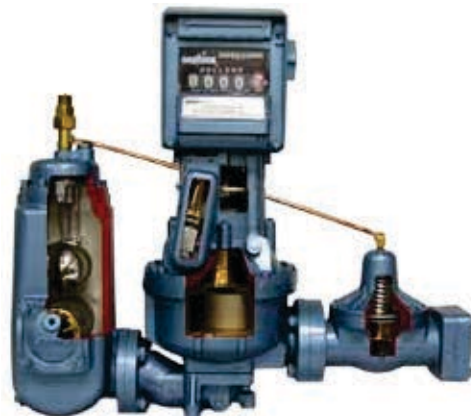
Apart from the meter itself, the system is usually completed with filter, air release, differential valve and a register (mechanical or electronic).

In some cases the temperature compensation as well as a printing device may also be added. All meters used for legal metrology or deliveries must be controlled by the local Standards Department.

## TECHNICAL DATA

<b>Specification</b>	2" 4D-MT (LPG meter)
<b>Flow rate</b>	76 to 380 l/min
<b>Working temperature</b>	-23°C to 52°C
<b>Max. working pressure</b>	24 bar
<b>Inlet connection</b>	Inlet check valve 2" NPT
<b>Outlet connection</b>	Companion flange for 1 1/2" or 2" NPT
<b>Units of measure</b>	Liter, US Gallon or Gallon
<b>Reset wheel capacity</b>	99.999 liter or 9.999,9 gallon
<b>Printing wheel capacity</b>	99.999 liter or 9.999,9 gallon
<b>Totalizer capacity</b>	99.999.999 liter or 99.999.990 gallon
<b>Temperature compensation</b>	Range from -23°C to 52°C compensation to 15°C
<b>Register type</b>	831 & 841* – Mechanical - Register + resettable register 833 & 843* – Same as 831 & 841 + Printer E4000 – Electronic register
<b>Materials</b>	Strainer – Mesh 80 stainless steel Housing – Aluminum Measuring chamber – Bronze Piston – Nituff® Teflon® impregnation coating Dynamic seals – Buna N Static seals – Buna N

83x Series – Gallon  
84x Series – Liter





# KC ProSupply

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