pplicant K	elso Technologies Inc.		······		AAR	No.E1	621	00
escription of	Device Bottom O	itlet Valve (4") With Cor	ramic Ball				······································	
Applicant No.		Device l	ident, No.	KBCV-P Series	Date	2/9/10	***************************************	
	Kelso Technok	naies Inc.						
. Manufact	7773-118A Street	utataanatiiniiiiiiiiiiiiiiiiiiiiiiiiiiii		City 5	elta	State Bri	idsh Colum	bein Canada V4C I
. Test facil	ity if other than the	manufacturer			Address			
. Test date	17/21/14			4. Observe Title:	Staff Engineer	······································	······································	
EST PROC	EDURE					***************************************		***************************************
Description	on of prototype tes	ting: High and Low Te	mp. Testing	(315F & -20F); Shock ad at more terms (75)	and Vibration; His	gh and Lov	v preseure i	lotting at different te
na body nodom				00 de 10000 1011ps (1 0	7100			
6. Cycles	Min. Temp.	@ Pressure	Cycles	Max. Temp.	@ Pressure	Test M		Remarks
10	-20 ap	300 psi	10	315 op	300 psi	Nitrogen Nitrogen		No Leeks
10	-28 °C	2088 kPa	10	157 °C	2088 jepa			
Cycles 10	Min. Temp.	@ Pressure	Cycles 10	Max. Temp. 315 °F	@ Pressure	Test M	Aedium Remarks	
10	-28 °C	2.06 kPa	10	157 °C	206 kPa	Nitroge	en	No Leaks
			Croles	Max. Tomp.		Total M	faulinus	Remarks
Cycles	Min. Temp.		Cycles 10		@ Pressure	Test Medium Nitrogen		No Leaks
10	-40 op	300 psi	10	315 of	300 pati	******	Seu i	No Leaks
10 Commodit	±40 ℃ by: Regulated Comm	2066 kPs 206	10	157°C modity Specifi	2068_kPa	X "Com	gen umodity to b set to TCC This applie	e disclosed and approval** s to duration and units
. Commodii . Flow rate	ty: Regulated Comm (if applicable)	2088 kPs	10	157°C modity Specifi	2068 kPa	X **Com subje Note: Servi	gen unodity to b	e disclosed and approval** s to duration and units
. Commodii. Flow rate	40 °C ty: Regulated Comm (if applicable)	2086 kPs nodity Non Regu gpm (lated Comm	157 °C modity Specification Limin) ring Number at revision	2068 kPa	Nitro X **Gom subje Note Servi Pre	gen umodity to b act to TCC: This applie ce Trial Onle	e disclosed and approval* s to duration and units
. Commodit. Flow rate Applicab . Device ap	ty: Regulated Comm (if applicable) the drawings	2066 kPs nodity Non Regu gpm (Material CS with Ceramic Ball	10 Draw lated KBOV-P	nodity Specific Limin) Specific Limin) Specific Limin Speci	2068 kPn	Nitro X **Gom subje Note Servi Pre	gen umodity to b act to TCC: This applie ce Trial Onle	e disclused and approvel* s to duration and units y.
. Commodification of the commodification of t	40 °C ty: Regulated Comm (if applicable) the drawings plication	2086 kPs nodity Non Regu gpm (Draw late KBOV-P	157 °C modity Specification Limin) ring Number at revision	2068 kPn	Nitro X **Gom subje Note Servi Pre	gen umodity to b act to TCC: This applie ce Trial Onle	e disclused and approvel* s to duration and units y.
. Commodit. Flow rate Applicab . Device ap. 0. Device as. 1. Device de	ty: Regulated Comm (if applicable) the drawings plication	2066 kPs nodity Non Regu gpm (Material CS with Ceramic Ball CS with Coramic Ball	Draw late KBOV-P KBOV-P KBOV-P	157 °C modity Specific L/min) ring Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages)	2088 kPa c Commodity Drawing No	Nitro X "Com subje Note: Servi Pre	gen unodity to b per to TCC o This applie ce Trial Onl- peedent Applica	e disclosed and approvation and units y. atton/Certificate
. Commodii . Flow rate Applicab . Device ap 0. Device as 1. Device de	ty: Regulated Comm (if applicable) He drawings plication sembly tails Materials Keington	2068 kPs addity Non Regularity Non Regularity Material CS with Ceramic Ball CS with Ceramic Ball CS with Ceramic Ball so has adhered to a string by the AAR.	Draw lated Communication (Communication Communication Comm	modity Specific L/min) Fing Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) patrol system that has	2088 kPa c Commodity Drawing No	Nitro X "Com subje Note: Servi Pre mber Code B85,	gen amodity to be begin to TCC. This applic ce Trial Onle cedent Applica B86, C4 as	e disclosed and approvation and units y. atton/Certificate
. Commodii . Flow rate Applicab . Device ap 0. Device as 1. Device de 2. Quality Commodia	ty: Regulated Comm (if applicable) He drawings plication sembly tails "Note: Kelse	2066 kPs aodityNon Regu gpm (Draw lated Committee Braw late KBOV-P KBOV-P KBOV-P KBOV-P rict quality co	nodity Specifi L/min) Fing Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) ontrol system that has	2068 kPa c Commodity Drawing Nu granted Kelso a *	Nitro X "Com subje Note: Servi Pre mber Code B85,	gen amodity to be begin to TCC. This applic ce Trial Onle cedent Applica B86, C4 as	e disclosed and approvation and units y. atton/Certificate
. Commodit. Flow rate Applicab . Device ap. 0. Device as. 1. Device de 2. Quality Conservations:	ty: Regulated Comm (if applicable) He drawings plication sembly tails **Note: Keix The only dr	2066 kPs aodity Non Regu gpm (Material CS with Ceramic Ball CS with Ceramic Ball so has adhered to a sh ing by the AAR. has received approval ference for this assembly	Draw lated Comma lated KBOV-P KBOV-P KBOV-P KBOV-P or service tria	modity Specification (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) control system that has for a similar Bortom Camic ball option denoted	2068 kPa c Commodity Drawing No granted Kelso a ** suitet valve with a steed by a *P* suffix.	Nitro X **Com subje Note: Servi Pre imber Code B85,	gen modity to be act to TCC this application TCC This application This ap	e disclosed and approvation and units y atton/Certificate and G5* certification
. Commodii . Flow rate Applicab . Device ap 0. Device as 1. Device de 2. Quality Commercial . Certifica	40 °C ty: Regulated Comm (if applicable) the drawings plication	2068 kPs andity Non Regularity Non Regularity Material CS with Ceramic Ball CS with Ceramic Ball CS with Ceramic Ball so has adhered to a string by the AAR. It has received approval for	Draw lated Communication (Communication) Draw late KBOV-P K	modity Specific L/min) Fing Number set revision (6/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) ontrol system that has a lifer a similar Bottom C amic ball option denotes with AAR Specific L/min)	2068 kPa c Commodity Drawing No granted Kelso a ** suitet valve with a steed by a *P* suffix.	Nitro X **Com subje Note: Servi Pre imber Code B85,	gen modity to be act to TCC this application TCC This application This ap	e disclosed and approvation and units y atton/Certificate and G5* certification
. Commodii . Flow rate Applicab . Device ap 0. Device as 1. Device de 2. Quality Commercial . Certifica	40 °C ty: Regulated Comm (if applicable) the drawings plication	2068 kPa addity Non Regulary N	Draw lated Communication (Communication) Draw late KBOV-P K	modity Specification (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) ontrol system that has a with AAR Species with AAR Species (1.6/15) (2 pages)	Drawing No granted Kelso a " nutlet valve with a steed by a "P" suffix. cifications for "	Nitro X **Com subje Note: Servi Pre mber Code B85, ainless stee	gen amodity to be set to TCC of This applie ce Trial Only seddent Applicated Applicated B68, C4 as a left ball option as, Appendix	e disclosed and approvation and units y atton/Certificate and G5* certification
. Commodii . Flow rate Applicab . Device ap 0. Device ap 1. Device de 2. Quality Commercial . Certifica	ty: Regulated Comm (if applicable) the drawings plication sembly tails "Note: Keise The only di TION: The above tested on	2068 kPs addity Non Regulary N	Draw lated Committee Commi	modity Specific L/min) Fing Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) mitrol system that has a litera similar Borton Camic ball option denotes with AAR Species. Title L	2068 kPa c Commodity Drawing No granted Kelso a ** suitet valve with a steed by a *P* suffix.	Nitro X **Com subje Note: Servi Pre mber Code B85, ainless stee	gen amodity to be set to TCC of This applie ce Trial Only seddent Applicated Applicated B68, C4 as a left ball option as, Appendix	e disclosed and approvation and units y atton/Certificate and G5* certification
. Commodification of the commodification of t	ty: Regulated Comm (if applicable) He drawings plication sembly tails **Note: Keise The only dr TION: The about	2068 kPa addity Non Regulary Non Non Non Regulary No	Draw lated Committee Commi	modity Specific L/min) Fing Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) mitrol system that has a litera similar Borton Camic ball option denotes with AAR Species. Title L	Drawing No granted Kelso a " nutlet valve with a steed by a "P" suffix. cifications for "	Nitro X **Com subje Note: Servi Pre mber Code B85, ainless stee	gen amodity to be set to TCC of This applie ce Trial Only seddent Applicated Applicated B68, C4 as a left ball option as, Appendix	e disclosed and approvation and units y atton/Certificate and G5* certification
Applicab Applicab Device ap Device as L. Device de Quality Constitution REVISIONS: CERTIFICA APPROVAL Date Approve	ty: Regulated Comm (if applicable) de drawings plication sembly tails **Note: Keise THON: The about tested of	2068 kPs addity Non Regulary Non Non Regulary Non Regula	Draw lated Committee Commi	modity Specific L/min) Fing Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) mitrol system that has a litera similar Borton Camic ball option denotes with AAR Species. Title L	Drawing No granted Kelso a " nutlet valve with a steed by a "P" suffix. cifications for "	Nitro X **Com subje Note: Servi Pre mber Code B85, ainless stee	gen amodity to be set to TCC of This applie ce Trial Only seddent Applicated Applicated B68, C4 as a left ball option as, Appendix	e disclosed and approvation and units y atton/Certificate and G5* certification
Applicab Applicab Device ap Device as L. Device de Quality Constitution REVISIONS: CERTIFICA APPROVAL Date Approve	ty: Regulated Comm (if applicable) He drawings plication sembly tails **Note: Keise The only dr TION: The about	2068 kPs addity Non Regulary Non Non Regulary Non Regula	Draw lated Committee Commi	nodity Specific L/min)	Drawing No granted Kelso a " nutlet valve with a steed by a "P" suffix. cifications for "	Nitro	gen umodity to be best to TCC. This applies ce Trial Onlineedent Applicated B86, C4 and B86, C4 and B86, C4 and B86, C4 and C46, C46, C46, C46, C46, C46, C46, C46,	e disclosed and approval** s to duration and units y. attor/Certificate and GS* certification a (AAR# 6152105: ST# dix A. The device
Applicab Applicab Device ap Device as L. Device de Quality Constitution REVISIONS: CERTIFICA APPROVAL Date Approve	ty: Regulated Comm (if applicable) de drawings plication sembly tails **Note: Keise THON: The about tested of	2068 kPs addity Non Regulary Non Non Regulary Non Regula	Draw lated Committee Commi	nodity Specific L/min)	Drawing No granted Kelso a " sutlet valve with a steed by a "P" suffix. cifications for "	Nitro	gen umodity to be best to TCC. This applies ce Trial Onlineedent Applicated B86, C4 and B86, C4 and B86, C4 and B86, C4 and C46, C46, C46, C46, C46, C46, C46, C46,	e disclosed and approval** s to duration and units y. attor/Certificate and GS* certification a (AAR# 6152105: ST# dix A. The device
Applicable Commodition of Plow cate Applicable	y: Regulated Comm (if applicable) He drawings plication sembly ontrol Statement rate "Note: Kelse The only dh THON: The above tested cost AAR Tapa Car did for Service Trial Number ST-	2068 kPs addity Non Regulary Non Non Regulary Non Regula	Draw lated Committee KBOV-P KBOV-P KBOV-P KBOV-P KBOV-P KBOV-P Idea to the conformal listed about 1 1 1 1 1 1 1 1 1 1	modity Specific L/min) ring Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) control system that has lifer a similar Borton Camic ball option denotes with AAR Species. Title Little	Drawing No granted Kelso a " sutlet valve with a steed by a "P" suffix. cifications for "	Nitro	gen umodity to be best to TCC. This applies ce Trial Onlineedent Applicated B86, C4 and B86, C4 and B86, C4 and B86, C4 and C46, C46, C46, C46, C46, C46, C46, C46,	e disclosed and approval** s to duration and units y. attor/Certificate and GS* certification a (AAR# 6152105: ST# dix A. The device
Applicable Device applicable Commodification of the Commodification	tested community to the drawings plication sembly "Note: Kelke The only distance the short statement to the short tested community the short te	2068 kPs andity Non Regulary Material CS with Ceramic Ball CS with Ceramic Ball CS with Ceramic Ball So has adhered to a shing by the AAR. That received approval for the same form with drawings of the Ball The	Draw lated Communication of the late of th	modity Specific L/min) ring Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) introl system that has a lifer a similar Bottom Camic ball option denotes with AAR Species Title Lined	Drawing No Drawing No granted Kelso a " sutlet valve with a steed by a "P" suffix. coffications for " Signature) on b	Nitro X **Com Subje Note: Servi Pre Imber Code B85, ainless sheet ainless sheet	gen amodity to be set to TCC or This applie or Trial Onlessed ent Applies B88, C4 as et ball option B, Append	e disclosed and approval** s to duration and units y. attor/Certificate and GS* certification a (AAR# 6152105: ST# dix A. The device
7. Commoding 7. Commoding 8. Flow rate Applicable 9. Device application 11. Device de 12. Quality Commoding 12. Quality Commoding 12. Quality Commoding 13. Approve Service Trial I	y: Regulated Comm (if applicable) He drawings plication sembly tails "Note: Keise The only did THON: The above tested on the steed of the completed of the completed AAR Tank Car C. Trial Completed	2068 kPs addity Non Regulary N	Draw lated Committee KBOV-P KBOV-P KBOV-P KBOV-P KBOV-P International text of the second conformal listed about the second conformal listed about the second conformal listed about the second conformal Required completed	modity Specific L/min) ring Number set revision (8/5/15) (2 pages) (8/5/15) (2 pages) (8/5/15) (2 pages) introl system that has a lifer a similar Bottom Camic ball option denotes with AAR Species Title Lined	Drawing No Drawing No granted Kelso a " sutlet valve with a steed by a "P" suffix. coffications for " Signature) on b	Nitro X **Com Subje Note: Servi Pre Imber Code B85, ainless sheet ainless sheet	gen amodity to be set to TCC or This applie or Trial Onlessed ent Applies B88, C4 as et ball option B, Append	e disclosed and approvation and units y atton/Certificate and G5* certification a (AAR# E152105: STe dix A. The device

Fig. 1.4 Form AAR 4-5 Application for Approval of Valves and Fittings