Product: Kubota WSM KX36-3,KX41-3S,KX41-3V Excavator Service Repair Workshop Manual(Mechanism Chapter)
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WSM

WORKSHOP MANUAL
KUBOTA EXCAVATOR

KX36-3
KX41-3S, KX41-3V

Mechanism Chapter

Kubota

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Record of Revisions

Symbol	Date	Main Revised Points & Corrective Measures	Person-in-charge
△1			
△2			
△3			
△4			

EU - version machine models : KX36-3, KX41-3S, KX41-3V
KTC, KCL, KTA version machine model : KX41-3V

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CONTENTS

I. General

a. Sales feature

Product concept : Comfort in conpact

(1) Grade up the basic performance; Digging, filling back and lifting capacity
(2) Grade up product feature to differentiate competitor; Digital meter, upper boom cylinder, hose protection

Workability	Bucket digging force improvement
	Variable pump adoption
	Boom and SP simultaneous operation
	The maximum digging depth priority
	High level stability
Maintenance	Boom cylinder over a boom
	Hoses arranged inner boom
	Bucket hose/ SP hose inner Arm
	Blade hose division
	New digital meter adoption
Amenity	Much easier access into cabin
	Cabin width expansion
Operativity	Straight travel adoption
	Smoother operation
Safety	Engine safety start
	Travel lock system
	ROPS, FOPS standard equipment

b. Difference between KX36-3 and KX41-3

	Differentiation	KX36-3	KX41-3	Remark
No1.	Engine	D782 (13 PS)	D902 (16PS)	
No2.	Bucket digging forth	1276 kgf	1591 kgf	Bucket cylinder is different
No3.	Working area (Arm length)	950 mm	1100 mm	
No4.	New digital meter	Not equipped	Equipped	
No5.	Variable track specification	Not adopted	Adopted	Fixed track is same parts
No6.	Travel speed	One speed	Two speed	
No7.	Straight travel	Not equipped	Equipped	KX41-3S, V : EU - version only
No8.	Seat grade	Standard seat	High back seat	
No9.	Roof window of the cabin	Not equipped	Equipped	

c. Quick chart for selling points : KX41-3V

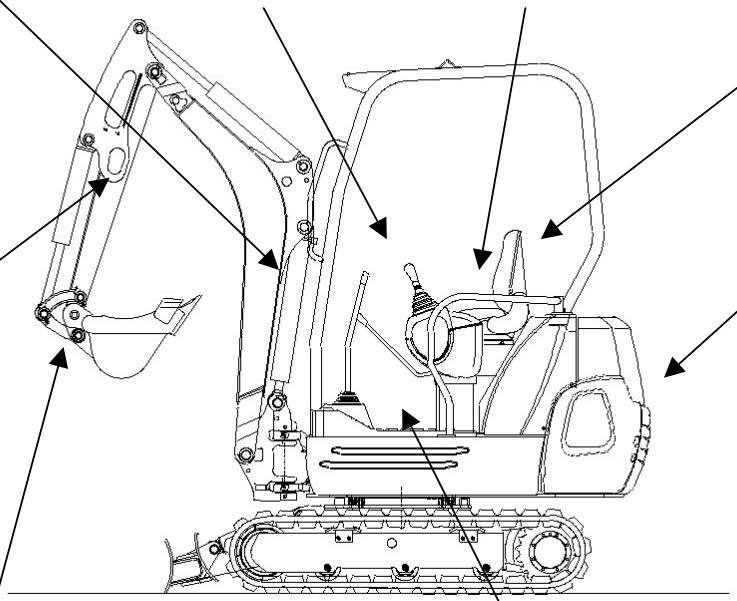
Boom cylinder is installed over upside of boom

Short stroke operating lever and wrist rest

Digital panel with new navigation system

High speed travel switch on the dozer lever

Aux. Hydraulic hoses are routed inside of arm.



Best matching of displacement hydraulic pump and Kubota new diesel engine
D902, 17.0HP 2300rpm

Increased bucket pin diameter
Pin diameter : 30mm

Separated boom swing pedal and auxiliary hydraulic pedal

d. Comparison to competitors;EU - version

Sales features(Sample:EU - version)		1.5 t class						
		KUBOTA KX41-3V	KUBOTA KX41-2αV	Bobcat 322D	VOLVO EC15B	TAKEUCHI TB016	KOMATSU PC12	YANMAR B15-3
Workability	Bucket digging forth (kgf)	1591	1270	1546	1541	1336	1350	1525
	Variable pump adoption	○	○	×	×	○	×	○
	Boom and SP simultaneous operation	○	×	-	-	-	-	-
	Maximum digging depth priority (mm)	2382	2336	2197	2300	2375	2180	2150
	High level stability							
Maintenance ability	Boom cylinder over boom	○	×	×	×	×	×	×
	Hoses arranged inner boom	○	×	×	×	×	△	×
	Bucket hose/SP hose inner Arm	○	×	×	×	○	△(bucket)	×
	Divided blade hoses	○	○	×	×	×	×	×
Operator comfort	Much easier access into cabin	○(485)	× (390)	× (420)	○(460)	× (400)	△(450)	× (345)
	Cabin width expansion	○(915)	× (845)	× (850)	× (860)	○(902)	△(880)	○(960)
	New digital meter adoption	○	×	×	×	×	×	×
Operativity	Straight travel adoption	○	○	×	×	×	○	×
	Smoother operation	◎	○	×	○	×	△	△
	Wrist-controled lever	○	×	○	○	○	○	○
Safety	Engine starting check	○	×	×	○	×	×	×
	Travel lock system	○	×	○	○	○	○	○
	ROPS/FOPS standard equipment	○	×	○	○	×	×	○
Others (for KX36-3)	Tumbler distance extension (mm)							
	Shoes width extension (mm)							

Sales features(Sample:EU - version)		1.3 t class			
		KUBOTA KX36-3	KUBOTA KX36-2α	JCB 8015	VOLVO EC13
Workability	Bucket digging forth (kgf)	1276	1245	1122	1122
	Variable pump adoption	○	×	×	×
	Boom and SP simultaneous operation	○	×	-	-
	Maximum digging depth priority (mm)	2230	2170	2102	2010
	High level stability	<Shown by demonstration>			
Maintenance ability	Boom cylinder over boom	○	×	×	○
	Hoses arranged inner boom	○	×	×	○
	Bucket hose/SP hose inner Arm	○	×	△(bucket)	△(bucket)
	Divided blade hoses	○	×	×	-
Operator comfort	Much easier access into cabin	○(440)	× (390)	◎(550)	-
	Cabin width expansion				
	New digital meter adoption	×	×	×	×
Operativity	Straight travel adoption	×	×	×	×
	Smoother operation	○	○	×	-
	Wrist-controled lever	○	×	○	×
Safety	Engine starting check	○	×	×	-
	Travel lock system	○	×	×	○
	ROPS/FOPS standard equipment	○	×	×	×
Others (for KX36-3)	Tumbler distance extension (mm)	1090	1010	1008	1085
	Shoes width extension (mm)	230	200	230	200

e. New engineering feature

1. Hydraulic system

1) New hydraulic circuit with downsized cylinder valve

(1) New Hydraulic Circuit

Despite the downsizing of the cylinder valve (with an overall length reduced to 335 mm from 368.5 mm), the construction of the interflow circuit for the upward and downward movement of the boom along with the employment of the pump flow unload valve interlocked with an unload lever ensures the smooth operability and stability of the hydraulic system.

(a) Boom Upward and Downward Interflow

When boom upward and downward pilot signal is input, the inflow section will be switched and the flow of pump number 3 will be guided to the boom section. The total flow of pump number 1 and number 3 will drive the boom cylinder, thus increasing the operation speed of the boom.

(b) Unload Section

When the safety lever beside the operator's seat is set to the unload position, the spool of the unload section will be switched and the hydraulic oil in pump number 1 and number 2 will flow directly to the tank circuit, thus ensuring safety and protecting the operator from improper control.

2) Flow characteristic simulation for operability improvement

(2) Flow Characteristic Simulation

To ensure the smooth operability, a fine adjustment to the cylinder valve spool is essential. The flow characteristics of the spool vary with the combination of the squeezed areas of three types of passages. Therefore, a computer simulation was conducted to grasp the flow characteristics, a prototype was manufactured, and a fine adjustment based on the feeling results of operability on an actual model was made to achieve comfortable operability.

2. Improvement in user-friendliness and operator's range of vision

(1) Optimum positioning of levers and other attachments

The optimum positioning of the respective levers, pedal, meter, and key was considered in a 3D (CATIA) simulation.

3. Electronic System

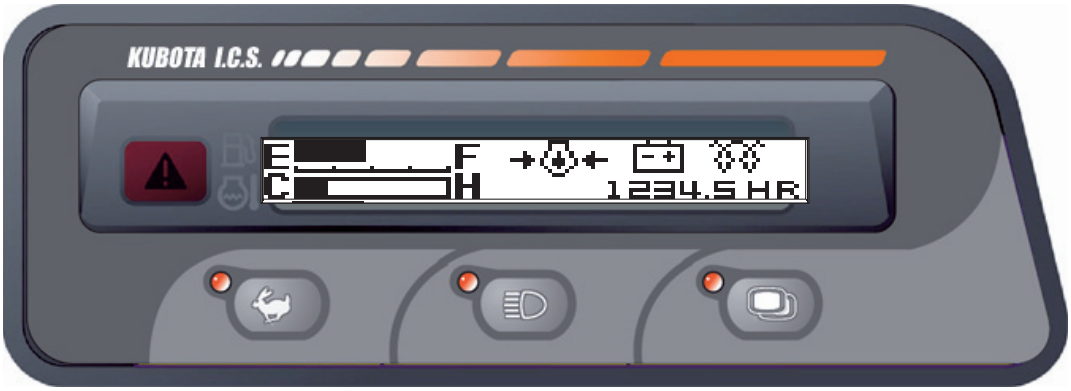
1) Digital Navigation System

(1) Information-intensive Display

The dot-type LCD provides a variety of alarms as well as normal display items supporting 11 languages. Furthermore, the display incorporates a service tester and other versatile functions for improvement in ease of use.

(2) Integration of Functions

The integration of functions implemented at the time of the development of the KX91-3, 101-3 Construction Machine has been further developed to include a variety of control functions into a meter for a great decrease in the number of parts along with an increase in functional performance and a reduction in cost. The meter incorporates an auto release, auto glow, finger control service port, auto idling, and two-speed selection functions.



f. Compornents compatibility

◉	●	◕	◑	◔	○
Parent	100% compatible	high compatible		low compatible	Original design

Location		Main components	KX36-3 (EU)	KX41-3(EU)		KX41-3V (US)
				S	V	
Under carriage	1	Track frame	●	◉	●	◉
	2	Track roller, idler	●	●	●	◉
	3	Blade	●	◉	●	◉
	4	Travel motor	○	○	○	◉
	5	Track shoe	●	◉	○	◉
Upper frame	6	Swivel bearing	●	●	●	◉
	7	Seat	○	●	◉	◉
	8	Swivel frame	●	●	●	◉
	9	Hydraulic Pump	◕	●	●	◉
	10	Control valve	○ 9 stacks	● Ten stacks	◉ Ten stacks	◉ Ten stacks
	11	Engine	◉	●	●	◉
	12	Bonnet	●	●	●	◉
	13	Control box, cover, step	●	●	●	◉
	14	Cab	●	●	◉	●
	15	Electric parts	◕	●	●	◉
	16	Control device	◕	●	●	◉
Front attachment	17	Swing bracket	●	●	●	◉
	18	Boom	●	●	●	◉
	19	Arm	○	●	●	◉

II.Machine Body

a. Quality Specifications

No		Specificatios Items			Unit	KX36-3 EU	KX41-3S	KX41-3V EU	KX41-3V US	Remarks
Q1		Main Speed JIS A8404								
1	1	Machine size	Total length(Transport)		mm	3670 ± 73	3665 ± 73	←	←	
					inch	144.5 ± 2.9	144.3 ± 2.9	←	←	
	2		Total width		mm	990 ± 10	990 ± 10	1300/994 ± 13	←	
					inch	39.0 ± 0.4	39.0 ± 0.4	51.2/39.1 ± 0.5	←	
	3		Total height(Canopy)		mm	2283 ± 23	←	←	←	
					inch	89.9 ± 0.9	←	←	←	
	4		Total height(Cabin)		mm	2283 ± 23	←	←		
					inch	89.9 ± 0.9	←	←		
2	1	Weight	Machine weight (Canopy)		kg	1440 ± 29	1450 ± 29	1595 ± 32	←	Fuel tank
					lbs	3174.6 ± 63.9	3197 ± 63.9	3516.337 ± 70.5	←	
	2		Machine weight(Cabin)		kg	1540 ± 31	1550 ± 31	1705 ± 34		
					lbs	3395.1 ± 68.3	3417.13 ± 68.3	3759 ± 75.0		
	3		Ground contact press. (Canopy)		kPa					
					psi					
					kgf/cm^2					
	4		Ground contact press. (Cabin)		kPa					
					psi					
					kgf/cm^2					
3	1	Performance	Swivel speed		rpm	9.1 ± 0.9	←	←	←	Rated engine RPM, η = 100 %
	2		Travel speed	F1	km/h	2.2 ± 0.2	2.4 ± 0.2	2.2 ± 0.2	2.3 ± 0.2	
					mph	1.37 ± 0.12	1.49 ± 0.12	1.37 ± 0.12	1.43 ± 0.12	
	3			F2	km/h		4.3 ± 0.4	4 ± 0.4	4.1 ± 0.4	
					mph		2.67 ± 0.25	2.49 ± 0.25	2.55 ± 0.25	
	4			R1	km/h	2.2 ± 0.2	2.4 ± 0.2	2.2 ± 0.2	2.3 ± 0.2	
					mph	1.37 ± 0.12	1.49 ± 0.12	1.37 ± 0.12	1.43 ± 0.12	
	5			R2	km/h		4.3 ± 0.4	4 ± 0.4	4.1 ± 0.4	
					mph		2.67 ± 0.25	2.49 ± 0.25	2.55 ± 0.25	
	6		Gradeability		deg	30 <	←	←	←	
4	1	Rear end min. turning radius			mm	1070 ± 21	←	←	←	
					inch	42.1 ± 0.8	←	←	←	
	2	Swivel frame rear ground clearance			mm	423 ± 8	←	←	426 ± 8	
					inch	16.7 ± 0.3	←	←	16.8 ± 0.3	
	3	Tambler center distance			mm	1090 ± 33	←	1230 ± 37	←	
					inch	42.9 ± 1.3	←	48.4 ± 1.5	←	
	4	Crawler total length			mm	1445 ± 43	←	1587 ± 48	←	
					inch	56.9 ± 1.7	←	62.5 ± 1.9	←	
	5	Crawler total width			mm	990 ± 20	←	1300/994 ± 26	←	
					inch	39.0 ± 0.8	←	51.2/39.1 ± 1.0	←	
	6	Crawler shoe width			mm	230 ± 5	←	←	←	
					inch	9.1 ± 0.2	←	←	←	
	7	Min. ground clearance			mm	167 ± 5	158 ± 5	←	←	
					inch	6.6 ± 0.2	6.2 ± 0.2	←	←	

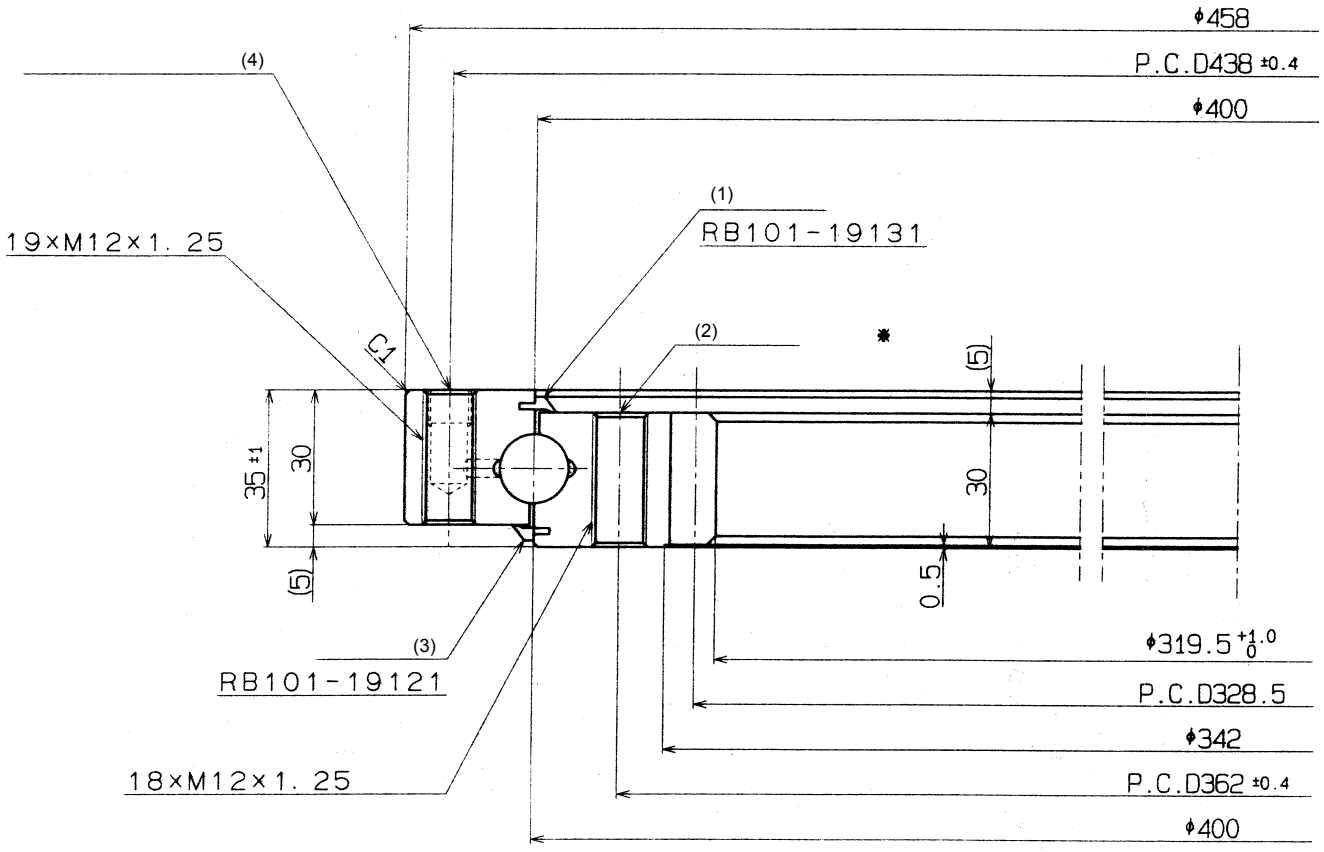
No		Specificatios Items			Unit	KX36-3 EU	KX41-3S	KX41-3V EU	KX41-3V US	Remarks
5	1	Engine,SAE J1349 Gross	Model name			D782-BH	D902-BH	D902-BH	D902-EBH	
	2		Rated output DIN 70020		kw	9.00 ± 0.20	11.80 ± 0.30	←	←	
					ps	12.2 ± 0.3	16.0 ± 0.4	←	←	
	3		Rated speed		rpm	2300	←	←	←	
	4		Displacement		L	0.778	0.898	←	←	
					cc	778	898	←	←	
					Usgal	0.21	0.24	←	←	
6	1	Hydraulic pump type								
	2	Pump delivery			L	16.6 x 2	17.3 x 2	←	←	
						10.4, 6.2	10.4, 6.2	←	←	
					Usgal	4.39 x 2	4.57 x 2	←	←	
						2.75, 1.72	2.75, 1.72	←	←	
	3	Main relief pressure (Bench set)	p 1, p2		Mpa	20.6 $^{-0.2}$	21.6 $^{-0.2}$	←	←	Valve bench set
					kgf/cm^2	210 $^{+3, -2}$	220 $^{+3, -2}$	←	←	
					Bar	206	216	←	←	
					psi	2986	3128	←	←	
			p 3		Mpa	20.1	20.6	←	←	
					kgf/cm^2	205	220	←	←	
					Bar	201	216	←	←	
					psi	2915	3128	←	←	
			p4		Mpa	3.9 $^{+0.3}$	←	←	←	
					kgf/cm^2	40	←	←	←	
					Bar	39	←	←	←	
					psi	569	←	←	←	
7	1	Swivel motor type								
8	1	Under carrage	Travel motor type							
	2		Parking brake type							
	3		Crawler shoe type							
9	1	Front attachment	Bucket heaped capacity	CECE	m^3	0.035 ± 0.002	0.04 ± 0.002	←	←	
					yd^3	0.046 ±	0.052 ±	←	←	
	2			SAE, JIS	m^3	0.035 ± 0.002	0.04 ± 0.002	←	←	
					yd^3	0.046 ±	0.052 ±	←	←	
	3		Bucket width		mm	402 ± 10	450 ± 10	←	←	Without side cutter
					inch	15.8 ± 0.4	17.7 ± 0.4	←	←	
	4		Swing angle	L	deg	73 ± 2	73 ± 2	←	←	
	5			R	deg	50 ± 2		←	←	
	6		Max. digging radius		mm	3782 ± 57	3910 ± 59	←	←	
					inch	148.9 ± 2.2	153.9 ± 2.3	←	←	
	7		Ground level Max. digging radius		mm	3723 ± 56	3855 ± 58	←	←	
					inch	146.6 ± 2.2	151.8 ± 2.3	←	←	
	8		Ground level Min. finish radius		mm	1237 ± 25	1231 ± 25	←	←	Bucket bottom horizontal
					inch	48.7 ± 1.0	48.5 ± 1.0	←	←	
	9		Max. digging depth		mm	2227 ± 45	2370 ± 47	←	←	
					inch	87.7 ± 1.8	93.3 ± 1.9	←	←	
	10		Max. vertical digging depth		mm	1742 ± 35	1835 ± 37	←	←	
					inch	68.6 ± 1.4	72.2 ± 1.5	←	←	
	11		Max. digging height		mm	3458 ± 69	3540 ± 71	←	←	
					inch	136.1 ± 2.7	139.4 ± 2.8	←	←	

No		Specificatios Items			Unit	KX36-3 EU	KX41-3S	KX41-3V EU	KX41-3V US	Remarks
9	12	Front attachment	Max. dump height		mm	2366 ± 47	2455 ± 49	←	←	
					inch	93.1 ± 1.9	96.7 ± 1.9	←	←	
	13		Max. dump height (Arm vertical)		mm					
					inch					
	14		Mini. turning radius		mm	1439 ± 43	1550 ± 47	←	←	
					inch	56.7 ± 1.7	61.0 ± 1.9	←	←	
	15		Mini. turning radius (Left swing)		mm	1147 ± 34	1245 ± 37	←	←	
					inch	45.2 ± 1.3	49.0 ± 1.5	←	←	
	16		Off-set amount	L	mm	512 ± 15	←	←	←	
					inch	20.2 ± 0.6	←	←	←	
	17			R	mm	323 ± 10	←	←	←	
					inch	12.7 ± 0.4	←	←	←	
	18		Max. digging force		kgf					
					N					
					lbw					
	19		Optional bucket range	JIS, SAE	m^3					
					yd^3					
10	1	Dozer	Width		mm	990 ± 5	←	1300/994 ± 5	←	
					inch	39.0 ± 0.2	←	51.2/39.0 ± 0.2	←	
	2		Height		mm	230 ± 5	←	←	←	
					inch	9.1 ± 0.2	←	←	←	
	3		Length		mm					
					inch					
	4		Max. lift above GL		mm	180 ± 9	181 ± 9	201 ± 10	←	
					inch	7.1 ± 0.4	7.1 ± 0.4	7.9 ± 0.4	←	
	5		Max. below GL		mm	193 ± 10	←	205 ± 11	←	
					inch	7.6 ± 0.4	←	8.1 ± 0.4	←	
	6		Displacement capacity		m^3					
					yd^3					
11	1	Water & oil	Radiator capacity		L					
					US gal					
	2		Reserve tank capacity		L					
					US gal					
	3		Engine crank case		L					
					US gal					
	4		Hydraulic oil (all amount)	Full	L	21 ± 1.1	←	←	20 ± 1	
					US gal	5.55 ± 0.29	←	←	5.28 ± 0.26	
	5		Hydraulic oil (tank amount)	Tank	L	14.5 ± 0.7	←	←	←	
					US gal	3.83 ± 0.18	←	←	←	
	6		Gear oil	Wheel motor	L					
					US gal					
	7			Swivel reduction case	L					
					US gal					
	8			Track roller	L					
					US gal					
	9			Front idler	L					
					US gal					
	10		Fuel tank		L					
					US gal					

No		Specificatios Items			Unit	KX36-3 EU	KX41-3S	KX41-3V EU	KX41-3V US	Remarks
Q2		Main Specs JIS A8404								
1	1	Bucket tooth slaggish			mm	53, 73	←	←	←	
					inch	2.1, 2.9	←	←	←	
	2				mm	< 10	←	←	←	
					inch	< 0.39	←	←	←	
	3	Dozer's declination			mm	< 10	←	←	←	
					inch	< 0.39	←	←	←	
2	1	Eccentric amount from swing center			mm					From swivel center
					inch					
	2	Distance to swing center			mm					
					inch					
3	1	Distance to boom pin			mm					
					inch					
	2	Boom pin height			mm					exclude grouser
					inch					
	3	Min. clearance of bucket teeth to boom cylinder protector			mm	62 -16/+34	167 -16/+34			
					inch	2.4 -0.6/+1.3	6.6 -0.6/+1.3			
	4	Clearance of boom cylinder to shoe			mm					
					inch					
4	1	Approach angle			deg	26.5 ± 2.7		25.5 ± 2.6		
	2	Distance to dozer tip			mm					From swivel center
					inch					
	3	Distance of crawler end to dozer			mm					
					inch					
	4	Clearance of dozer to weight			mm					
					inch					
5	1	Crawler height			mm	357 ± 7				Include grouser on the spocket
					inch	14.06 ± 0.28				
	2	Max. crawler height			mm	358 ± 7				
					inch	14.09 ± 0.28				
	3	Clearance of swivel frame to crawler			mm					
					inch					
	4	Distance to idler center			mm					From swivel centerl
					inch					
	5	Distance to sprocket center			mm					
					inch					

b. Main component

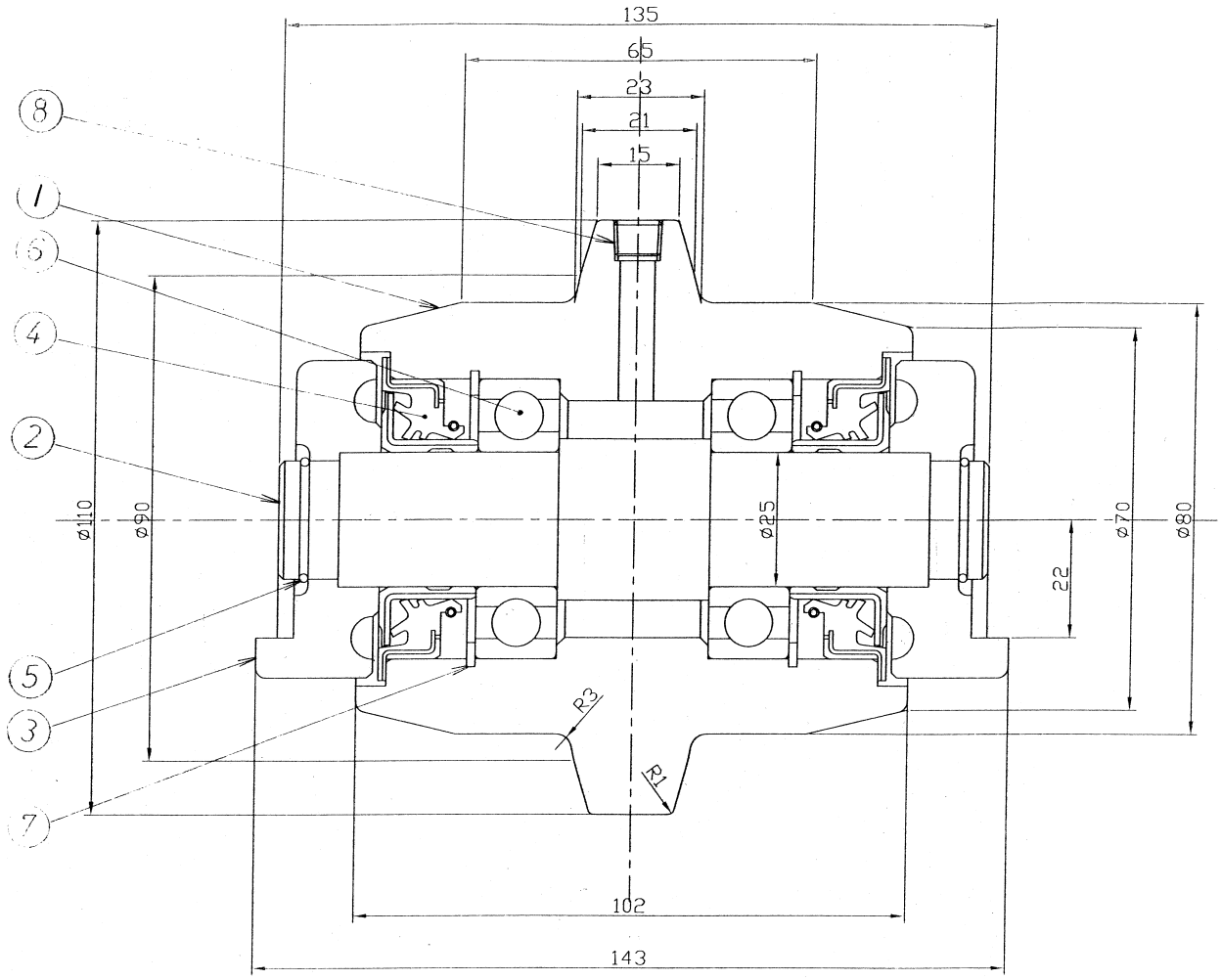
1. Swivel bearing

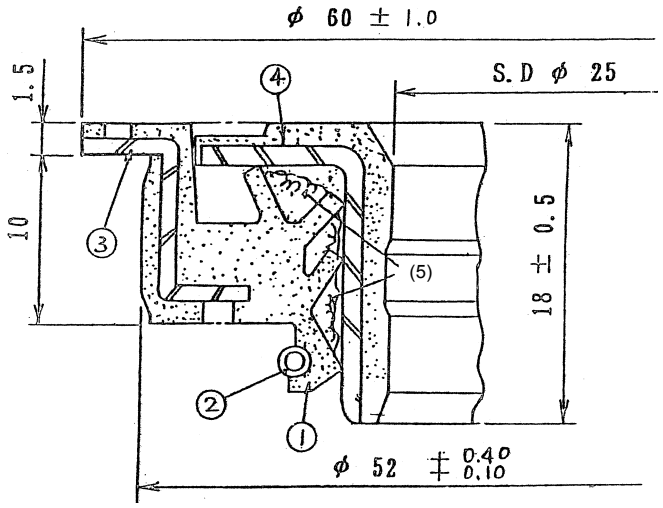


(1) Seal B
(2) S-mark
(3) Seal A
(4) R_p 1/8, for grease nipple

Number of teeth = 73
Backlash = 0.05 ~ 0.35 mm
(0.002 ~ 0.014 inch)
P.C.D. = ϕ 328.5

2. Track roller



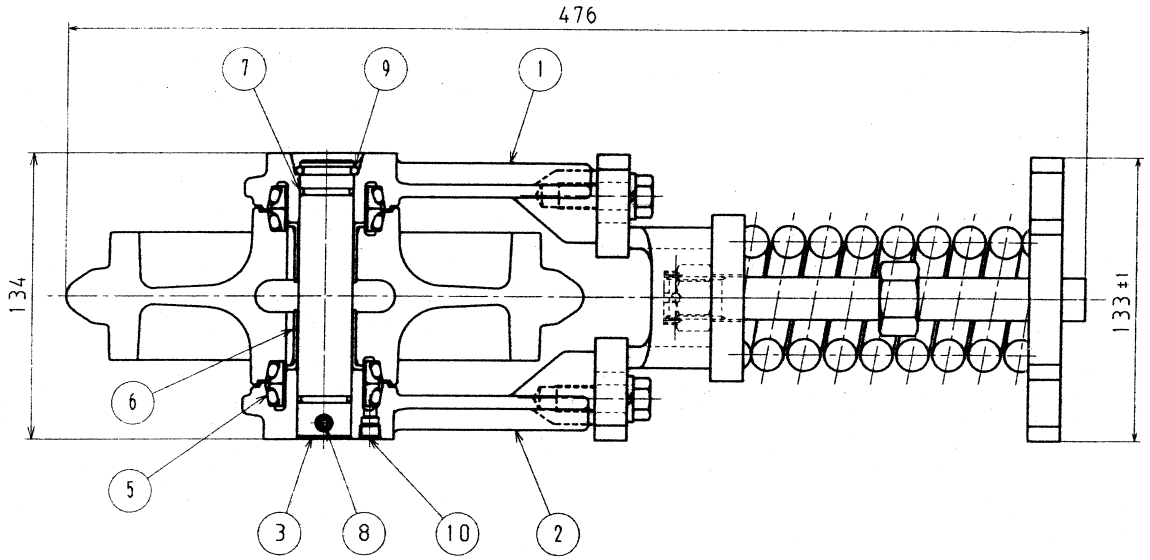


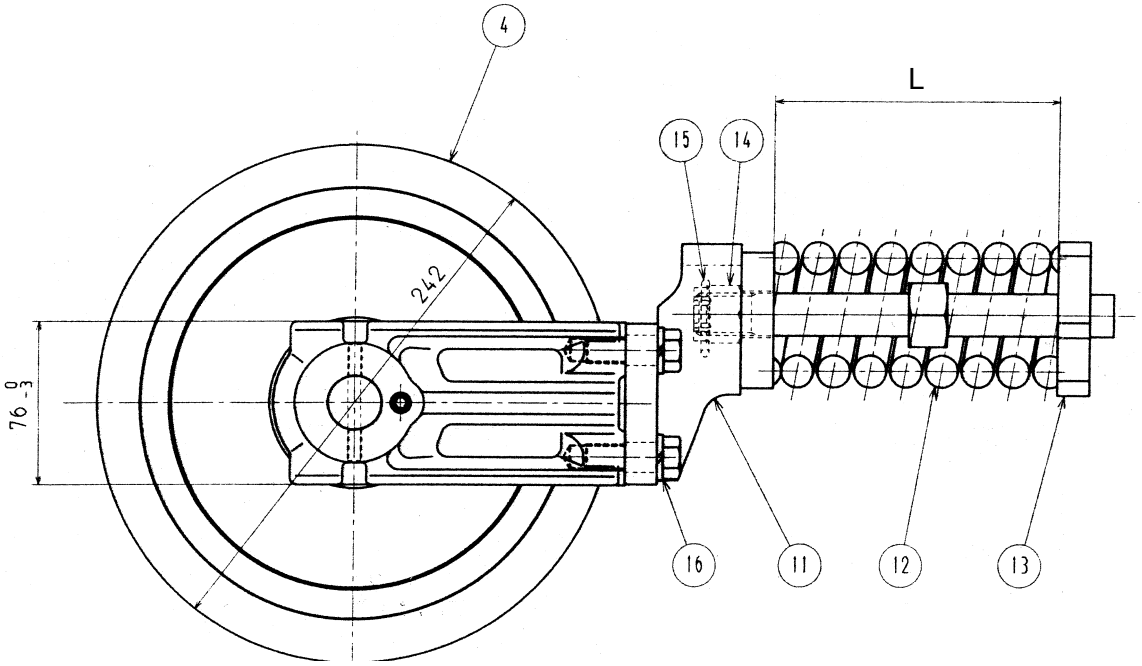
(1) Packing, NBR
(2) Spring
(3) Reinforce, ring
(4) Sleeve
(5) Fill grease

Lub oil :Engine oil SAE #30CD class 40 cc
Plug :Apply screw lock agent and tightening torque, 0.8 kg·m

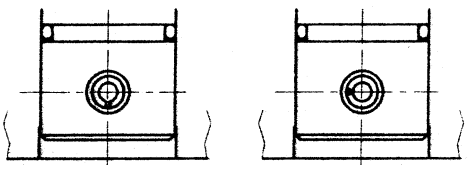
3. Idler and tension spring

3-1 Structure





(1) Support 1	(5) Floating seal	(9) Wire	(13) Retainer
(2) Support 2	(6) Bushing	(10) Plug, R 1/8	(14) Nut
(3) shaft	(7) O-ring	(11) Yoke	(15) Split pin
(4) Idler	(8) Spring pin	(12) Spring	(16) Bolt



(Spring roll pin direction)

Pre-set length of spring : L

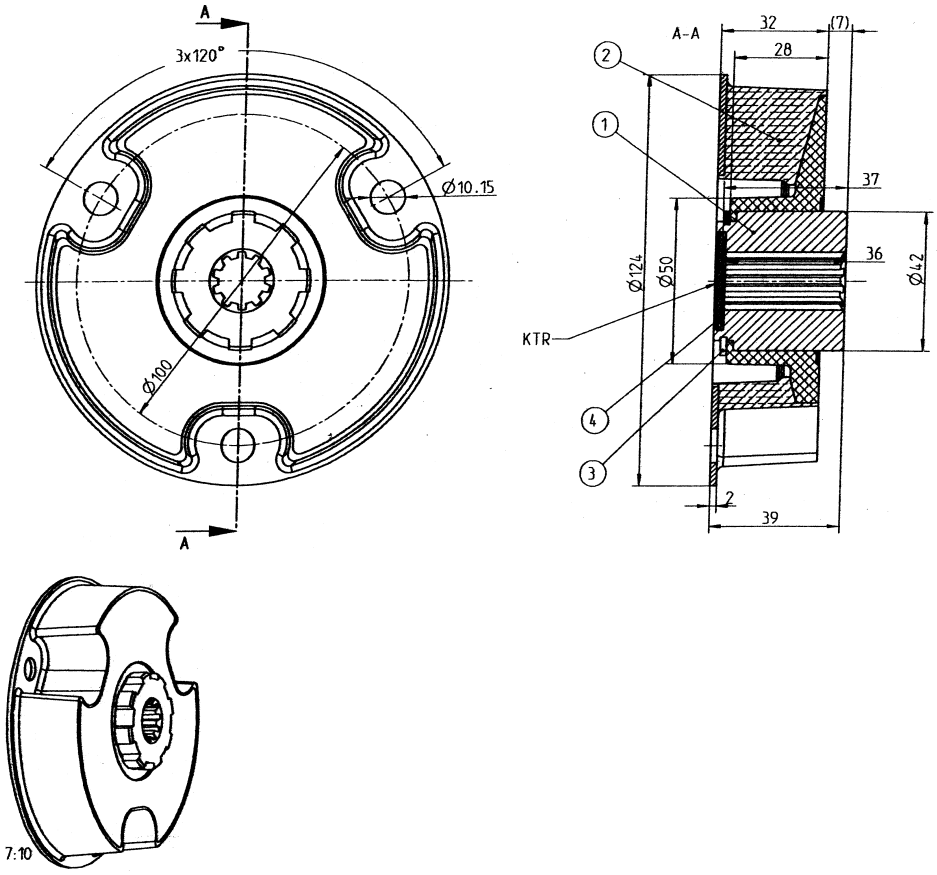
KX36-3 :

KX41-3 : 130 mm (5.12 inch)

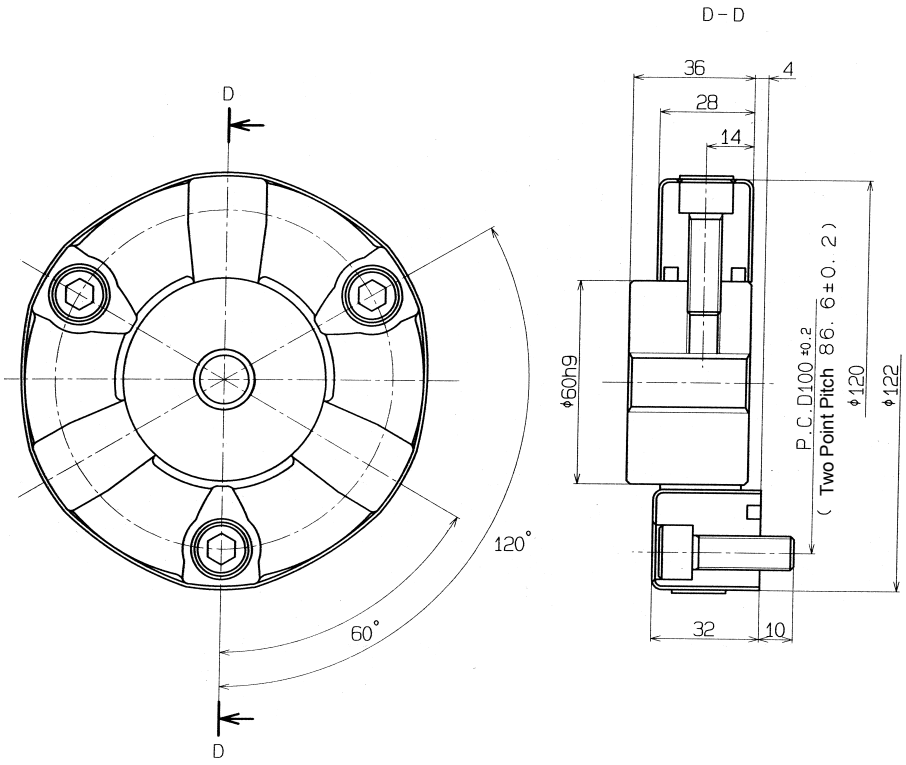
KX41-3V :

4. Pump coupling

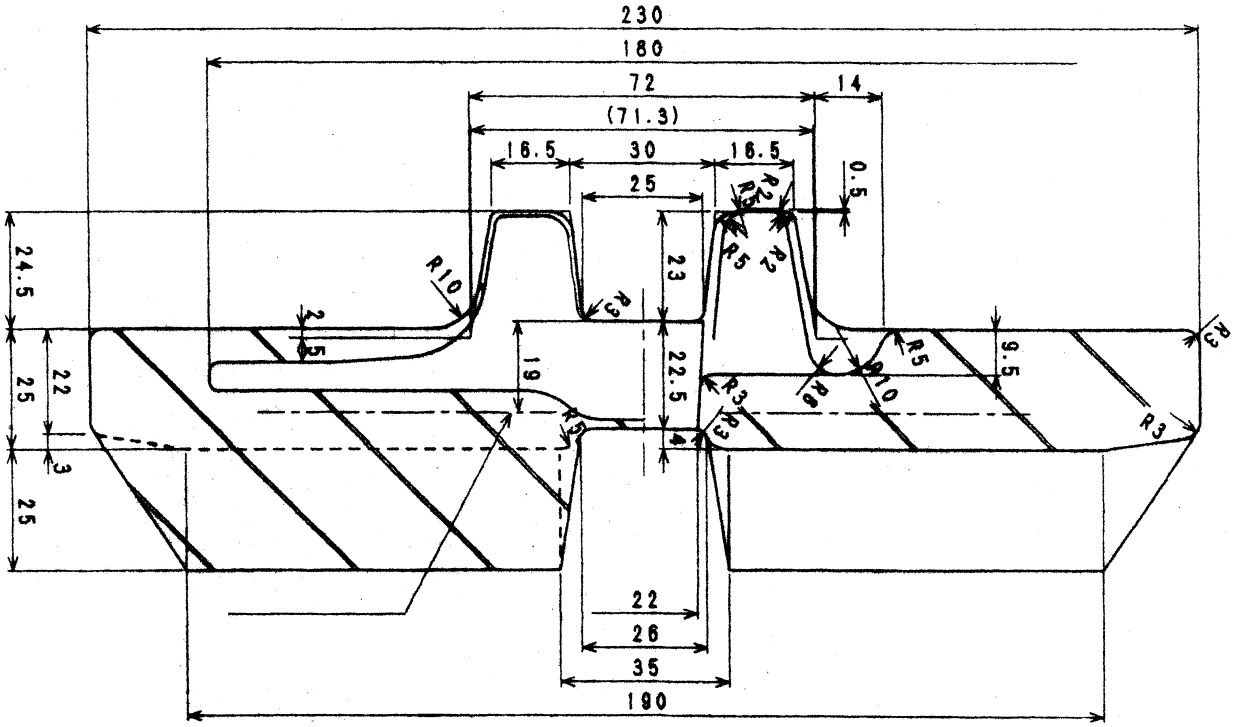
4-1 EU - version : KX36-3, KX41-3, KX41-3V



4-2 North America & Oceania - version : KX41-3V

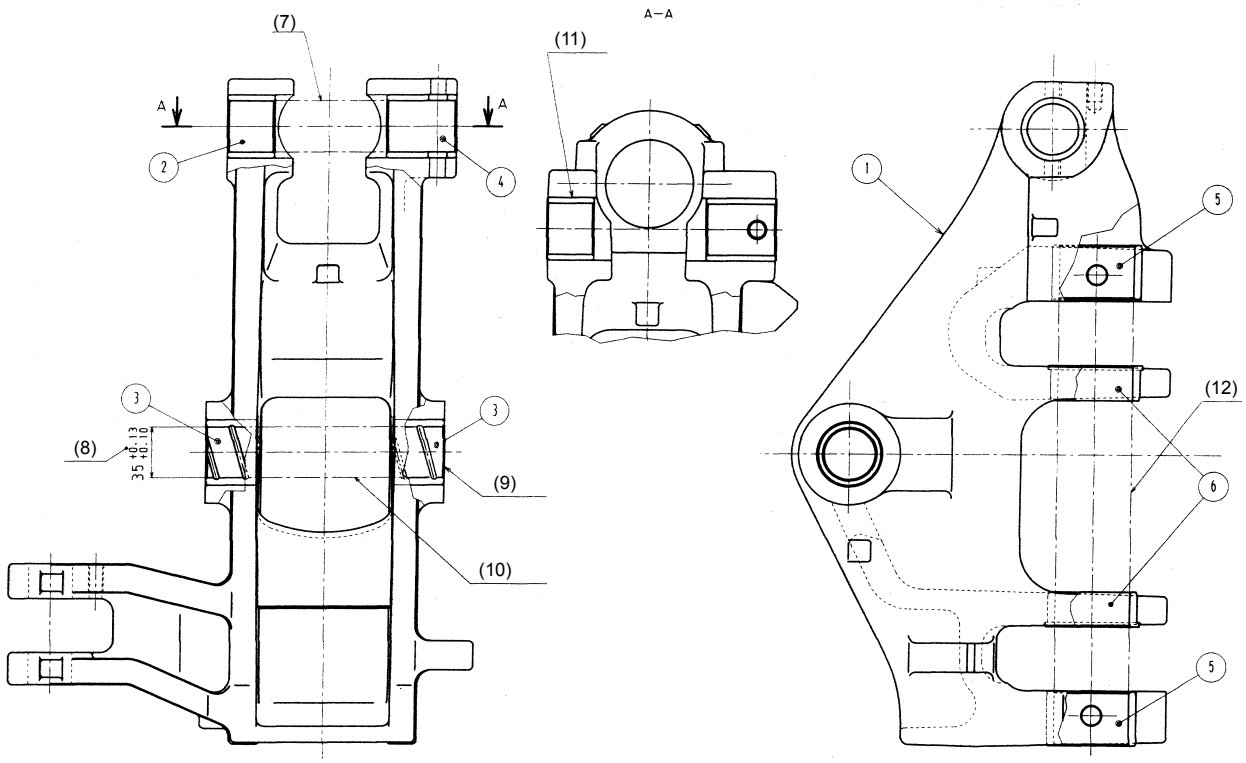


5. Rubber track



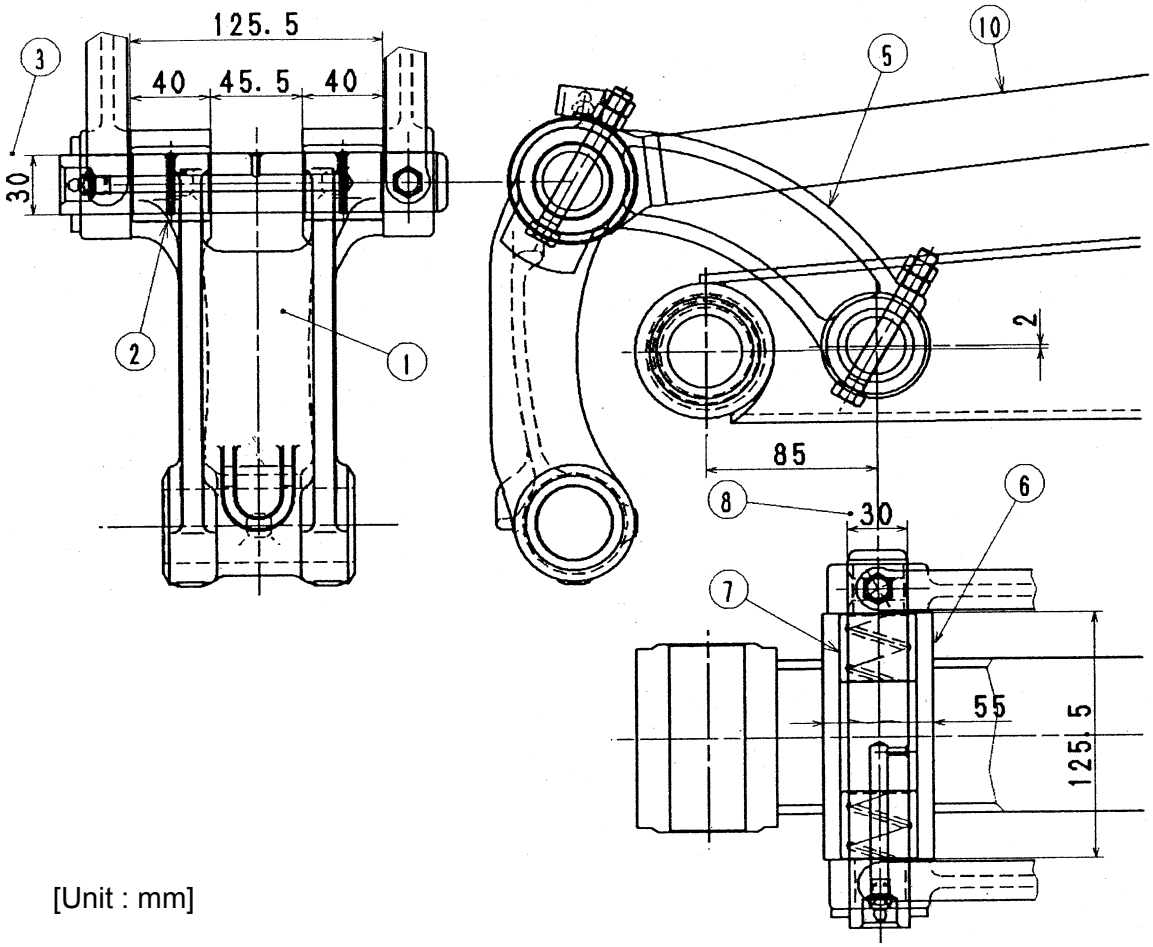
Spec items	KX36-3	KX41-3S, V EU	KX41-3V US
Type	230 x 32 x 96	230 x 35 x 96	←
Circunference	3072 ± 10 mm	3360 ± 10 mm	←
Number of steel cords	48^{+2}_{-0}	←	48 ± 4
Thickness of crawler main part	25.0 mm	←	23.0 mm
Ditto joint parts	28.5 mm	←	26.5 mm
Core metal	FCD1200 Austempering		FCD450
Number of core metal (Links)	32	35	35

6. Swing bracket



(1) Swing bracket
(2) ~ (6) Bushing
(7) After installing the bush, pin of ϕ34.9 goes through smoothy.
(8) Dimension before bushing.
(9) Side of the bush (3) should flash the face.
(10) After installing the bush, pin of ϕ34.9 goes through smoothy.
(11) Side of the bush (2) should behind the surface.
(12) After installing the bush, pin of ϕ49.95 goes through smoothy.

7. Bucket link pin : North America & Oceanea



[Unit : mm]

Parts name		Parts No.	Specifications
(1)	Bucket link 1	RB238-66713	Et 125.5 / Wb 40
(2)	Bush A	RB238-66781	ϕ38 x ϕ30 x W40
(3)	Pin A dia	RB238-66771	ϕ30 L : change
(5)	Bucket link 2, 3	RB238-66722	ϕ30 - ϕ30
		RB238-66732	
(6)	Arm boss	RB238-67112	X85 Y2 / ϕ55 x ϕ38 x L125.5
(7)	Bush B	68701-66661	ϕ38 x ϕ30 x W35
(8)	Pin B dia	RB238-66751	ϕ30 L : change
(10)	Bucket cylinder L/S (stroke)	RB238-67802	529 / 805.5 (276.5)

III.Electrical System III-2

III. Electrical System

a. Development concept : KX41-3

1. Background of Adoption of New Meter

(1) The L1 (3-ton class) Series, which was released in Japan in 1999 for domestic users, adopted a new meter of LCD type (called YUYU NAVI). Since then, this meter has been one of the sales points of the Series.

(2) Presently, the new meter is applied to only models for domestic users. No models for overseas users adopt this meter.

(3) The new meter has a stable reputation for providing advanced performance, convenience, and user-friendliness. This sales point should be added to models for overseas users.
We would like to start adopting the new meter with KX41-3 first, and expand the application range to include higher rank models systematically.

2. Features of New Meter

(1) Advanced performance:
Digital display (multi-language support), alarm sound, and design performance (see fig. 2 on the right-hand side)

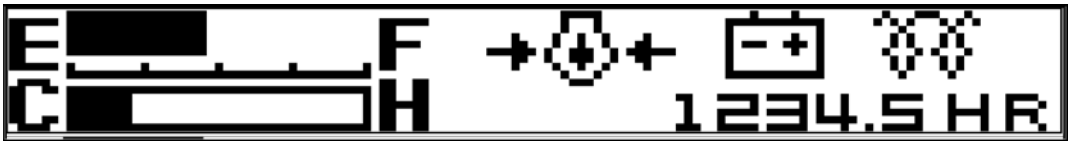
(2) Parts integration:
Relays and controllers supporting a variety of functions for conventional models are integrated into the new meter for space saving and high cost performance. (Relays partly need to be installed externally.)

(3) Functions in a Wide Variety

1. Warning and self-diagnostic functions:
The following items are displayed on the LCD with graphics, failure (warning) numbers, and characters along with an alarm sound.
   - Remaining fuel (see fig. 3 on the right-hand side)
   - Oil pressure (see fig. 4 on the right-hand side)
   - Charge (see fig. 5 on the right-hand side)
   - Overvoltage
   - Overheating
2. Inspection time instruction function:
"SERVICE HOURS" appears whenever the time has come for the inspection and replacement of the oil filter as explained in the manual, and prompts the user to make an inspection.
3. Fuel replenishment assist function:
The meter beeps intermittently at the time of fuel replenishment, and the interval between beeps is shortened when the tank is almost filled to prevent the fuel from overflowing.
The beep functions with the key turned OFF, but one of the switch needs to be pressed.
4. Service tester function:
This function allows the monitoring of the operation of electrical devices (e.g., an oil pressure switch) connected to the meter and provides the history of failures resulted in the past (see figs. 6 and 7 on the right-hand side).
While in harness manipulation mode, it is possible to diagnose and single out harness components that have internal failures (e.g., contact failures).
5. Other functions
   - Low Travel speed reset at the time of restarting the engine (if the engine is turned OFF with high - low switch set to the high range).
   - Engine start check (preventing the engine from starting with the lever unlocked).
   - Starter motor automatic disconnection → Auto release
   - Auto glow
   - Built-in hour meter and display
   - Built-in tachometer and display
6. Expansion function for the future (Presently not scheduled to adopt for KX4I-3)
   - Monitoring with theft prevention set up
   - Service port (thumb) hand-held proportional control
   - Air-conditioner idling control
   - Auto idling

(Reference) LCD Display Examples of New Meter

Fig. 1
Normal screen



Key switch ON (Only the glowing moment)

Normal screen (with the tachometer selected)

Normal screen (with the hourmeter selected)

Fig. 2
Language selection screen

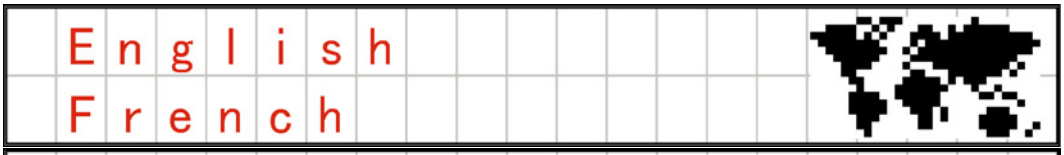


Fig. 3

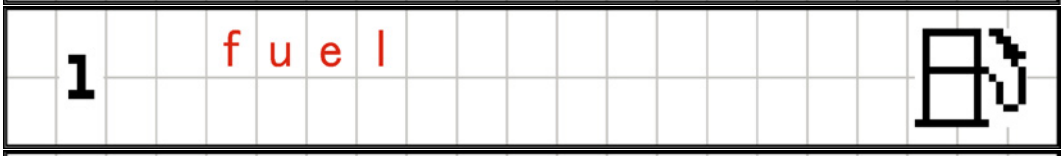


Fig. 4

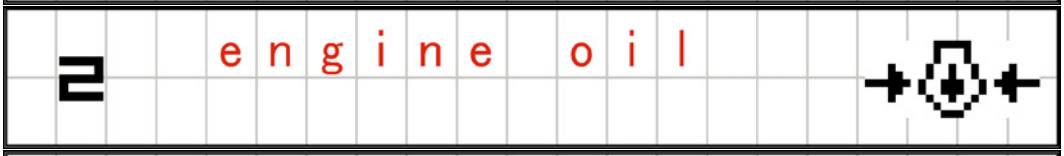


Fig. 5

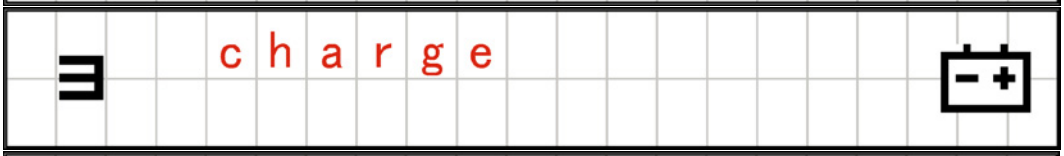
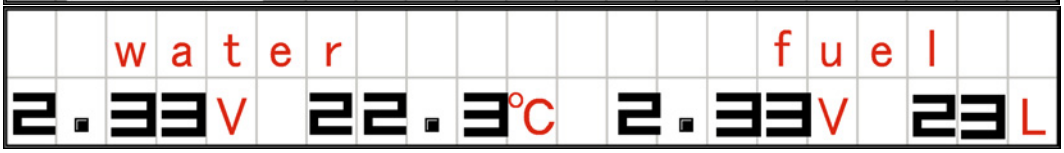


Fig. 6

Fig. 7



3. Electrical system : Functional comparison : KX41-3S, V

No.	Function	EU-version	North America & Oceanea
1	KICS;Kubota Intelligent Control System, LCD(liquid cristal display) with character and illustration	Yes	Yes
2	Maintenance indication upon hour meter	Yes (delete method:manual)	Yes (delete method:auto)
3	Anti-theft system	Yes (sample, date not fixed)	No
4	AI(Auto idle) function	No	No
5	Engine overheat warning	Yes	No
6	Starter motor auto release function	Yes	Yes
7	Glowplug auto glow function	Yes	Yes
8	Travel high-low switch at lever grip	Yes	Yes
9	Fuel feed assist sound	Yes	Yes
10	Heater	Yes (cab version)	No
11	Rotating lamp	Harness and switch are equipped as standard	Harness is incorporated
12			
13			
14			
15			

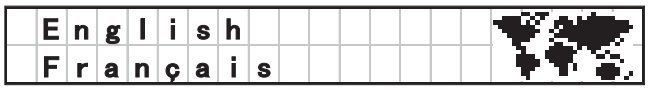
b. Outline of Kubota ICS (Intelligent Control System)

Feature of LCD Navigation System①

(K.I.C.S. : Kubota Intelligent Control System)

①Advanced Feature

- Digital display (Multi language),
  Design
  Alarm sound



②Integrated function

- Space saving, High Cost performance

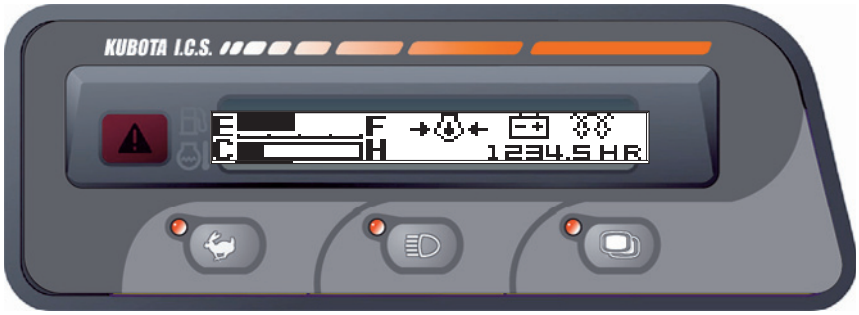
③Additional function

- Convenient function by Easy operation.

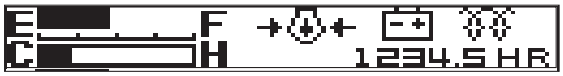
Feature of LCD Navigation System②

Additional function

(1) Normal display

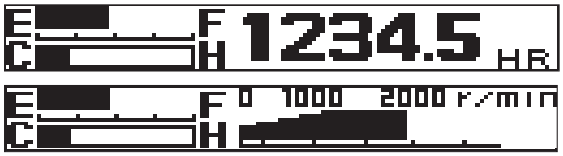


Key sw ON



Normal display

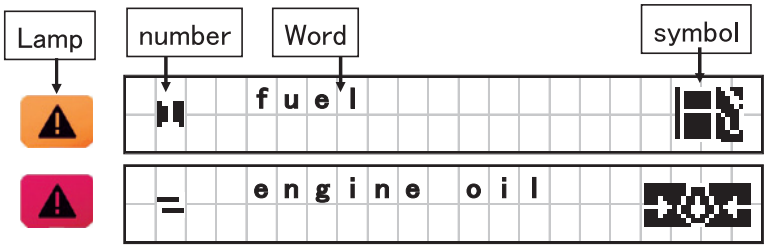
- Hour metor
- Tachometer



Feature of LCD Navigation System②

Additional function

(2)Warning & failure



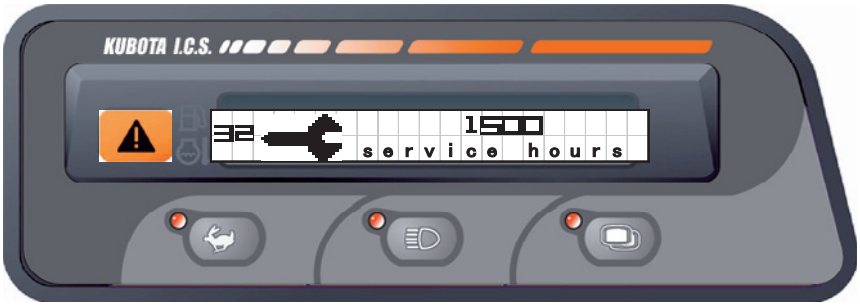
The number is coordinated with the manual.

Feature of LCD Navigation System③

Additional function

(3)display of service maintenance time

[Remind check schedule of service]



10 seconds after key switch on then message disappear, and 10 times key switch off ,this message is terminated.

(North America & Oceania – version)

As for EU – version, this message should be deleted manually by pressing the work lamp switch for 3 seconds.

Product: Kubota WSM KX36-3,KX41-3S,KX41-3V Excavator Service Repair Workshop Manual(Mechanism Chapter)
Full Download: https://www.arepairmanual.com/downloads/kubota-wsm-kx36-3kx41-3skx41-3v-excavator-service-repair-workshop-manualmechanism-chapter/

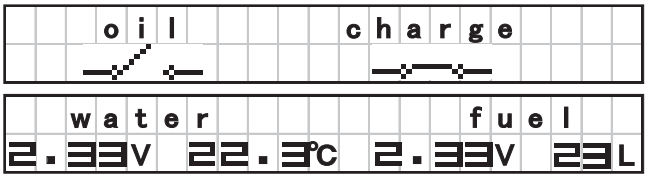
Feature of LCD Navigation System④

Additional function
(4)Refueling assistance
Prevents Fuel Overflow.
[Specification]
Buzzer sound changes
according to fuel level.
pi___pi___ → pi_pi_pi → pi----------

Push  with key off.
And this function starts.

Feature of LCD Navigation System⑤

Additional function
(6) The serviceman's support function.
Repairing time becomes shorter.
(for example)
・Tester Function



・Fail record

Sample of manual. Download All 130 pages at:
https://www.arepairmanual.com/downloads/kubota-wsm-kx36-3kx41-3skx41-3v-excavator-service-repair-workshop-manualmec