

# Technical Manual

EX12 to EX45-2

# INTRODUCTION

## TO THE READER

- This manual is written for an experienced technician to provide technical information needed to maintain and repair this machine.

- Be sure to thoroughly read this manual for correct product information and service procedures.
- If you have any questions or comments, at if you found any errors regarding the contents of this manual, please contact using "Service Manual Revision Request Form" at the end of this manual.

(Note: Do not tear off the form. Copy it for usage.):

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- The following abbreviations of the serial numbers are used in this manual.

Model	Type A	Type B
EX12-2	02001 to 02812	02813 and up
EX15-2	01501 to 02175	02176 and up
EX18-2	00101 to 00532	00533 and up
EX22-2	02001 to 02653	02654 and up
EX25-2	01501 to 02204	02205 and up
EX30-2	03501 to 05699	05700 and up
EX35-2	02001 to 03404	03405 and up
EX40-2	003501 to 004842	004843 and up
EX45-2	001001 to 001593	001594 and up

## ADDITIONAL REFERENCES

- Please refer to the materials listed below in addition to this manual.

- The Operator's Manual
- The Parts Catalog

- Operation Manual of the Engine
- Parts Catalog of the Engine
- Hitachi Training Material

## MANUAL COMPOSITION

- This manual consists of two portions: the Technical Manual and the Workshop Manual. Use the manuals according to purpose.

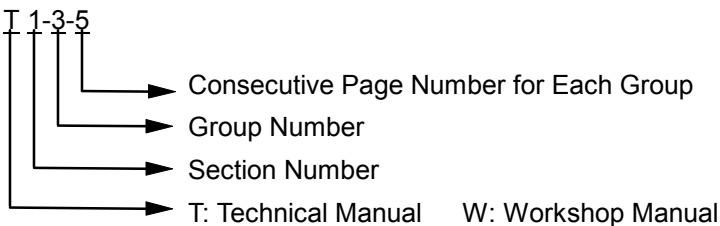
- Information included in the Technical Manual: technical information needed for redelivery and delivery, operation and activation of all devices and systems, operational performance tests, and troubleshooting procedures.

- Information included in the Workshop Manual: technical information needed for maintenance and repair of the machine, tools and devices needed for maintenance and repair, maintenance standards, and removal/installation and assemble/disassemble procedures.

## PAGE NUMBER

- Each page has a number, located on the center lower part of the page, and each number contains the following information:

Example : T 1-3-5




# INTRODUCTION

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## SAFETY ALERT SYMBOL AND HEADLINE NOTATIONS

In this manual, the following safety alert symbol and signal words are used to alert the reader to the potential for personal injury or machine damage.


 This is the safety alert symbol. When you see this symbol, be alert to the potential for personal injury. Never fail to follow the safety instructions prescribed along with the safety alert symbol.

The safety alert symbol is also used to draw attention to component/part weights.

To avoid injury and damage, be sure to use appropriate lifting techniques and equipment when lifting heavy parts.

-  **CAUTION:**  
Indicated potentially hazardous situation which could, if not avoided, result in personal injury or death.

- **IMPORTANT:**  
Indicates a situation which, if not conformed to the instructions, could result in damage to the machine.

-  **NOTE:**  
Indicates supplementary technical information or know-how.

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## UNITS USED

- SI Units (International System of Units) are used in this manual.

MKSA system units and English units are also indicated in parentheses just behind SI units.

Example : 24.5 MPa (250 kgf/cm<sup>2</sup>, 3560 psi)

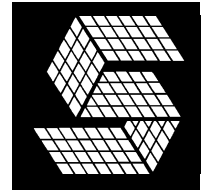
A table for conversion from SI units to other system units is shown below for reference purposes.

Quantity	To Convert From	Into	Multiply By	Quantity	To Convert From	Into	Multiply By
Length	mm	in	0.03937	Pressure	MPa	kgf/cm <sup>2</sup>	10.197
	mm	ft	0.003281		MPa	psi	145.0
Volume	L	US gal	0.2642	Power	kW	PS	1.360
	L	US qt	1.057		kW	HP	1.341
	m <sup>3</sup>	yd <sup>3</sup>	1.308	Temperature	°C	°F	°C×1.8+32
Weight	kg	lb	2.205	Velocity	km/h	mph	0.6214
Force	N	kgf	0.10197		min <sup>-1</sup>	rpm	1.0
	N	lbf	0.2248	Flow rate	L/min	US gpm	0.2642
Torque	N·m	kgf·m	1.0197		mL/rev	cc/rev	1.0
	N·m	lbf·ft	0.7375				

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**SECTION 1**  
**GENERAL**



**–CONTENTS–**

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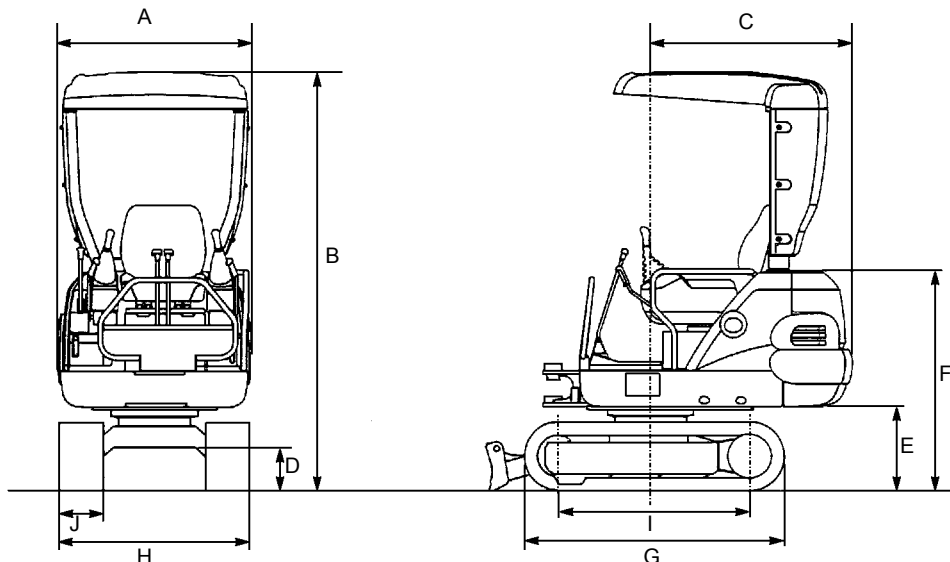
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## GENERAL / Specifications

### SPECIFICATIONS

	Unit	EX12-2		EX15-2		EX18-2	
		Canopy	Cab	Canopy	Cab	Canopy	Cab
Front Attachment	–	Boom Swing Type		Boom Swing Type		Boom Swing Type	
Bucket Capacity (Heaped)	m <sup>3</sup>	PCSA: 0.041 CECE: 0.035		PCSA: 0.046 CECE: 0.04		PCSA: 0.05 CECE: 0.045	
Operating Weight	kg (lb)	1250 (2760)	1350 (2980)	1350 (2980)	1450 (3200)	1700 (3750)	1800 (3970)
Base Machine Weight	kg (lb)	1020 (2250)	1120 (2470)	1080 (2380)	1180 (2600)	1420 (3130)	1520 (3350)
Engine	–	KUBOTA D1105 12.1 kW/2000 min <sup>-1</sup> (16.5 PS/2000 rpm)		KUBOTA D1105 12.9 kW/2100 min <sup>-1</sup> (17.5 PS/2100 rpm)		KUBOTA D1105 12.1 kW/2000 min <sup>-1</sup> (16.5 PS/2000 rpm)	
A: Overall Width	mm (ft in)	1020(3'4") )	1055(3'6") )	1020(3'4") )	1055(3'6") )	1300(4'3") )	1300(4'3") )
B: Cab Height	mm (ft in)	2200(7'3") )	2280(7'6") )	2200(7'3") )	2280(7'6") )	2320(7'7") )	2400(7'10") )
C: Rear End Swing Radius	mm (ft in)	1070 (3'6")		←		←	
D: Minimum Ground Clearance	mm (ft in)	235 (9")		←		325 (1'1")	
E: Counterweight Clearance	mm (ft in)	445 (1'5")		←		565 (1'10")	
F: Engine Cover Height	mm (ft in)	1170 (3'10")		←		1275 (4'2")	
G: Undercarriage Length	mm (ft in)	1375 (4'6")		←		1775 (5'8")	
H: Undercarriage Width	mm (ft in)	960 (3'2")		1000 (3'3")		1300 (4'3")	
I: Sprocket Center to Idler Center	mm (ft in)	1025 (3'4")		←		1350 (4'5")	
J: Track Shoe Width	mm (ft in)	230 (9")		←		250 (10")	
Ground Pressure	kPa (kgf/cm <sup>2</sup> , psi)	25 (0.25)	26 (0.26)	26 (0.26)	27 (0.28)	23.5 (0.24)	24.5 (0.25)
Swing Speed	min <sup>-1</sup> (rpm)	8.5		9.0		10	
Travel Speed (Fast/Slow)	km/h (mph)	2.2 (1.37)		2.3 (1.44)		←	
Gradeability	% (deg.)	58 (30)		←		←	



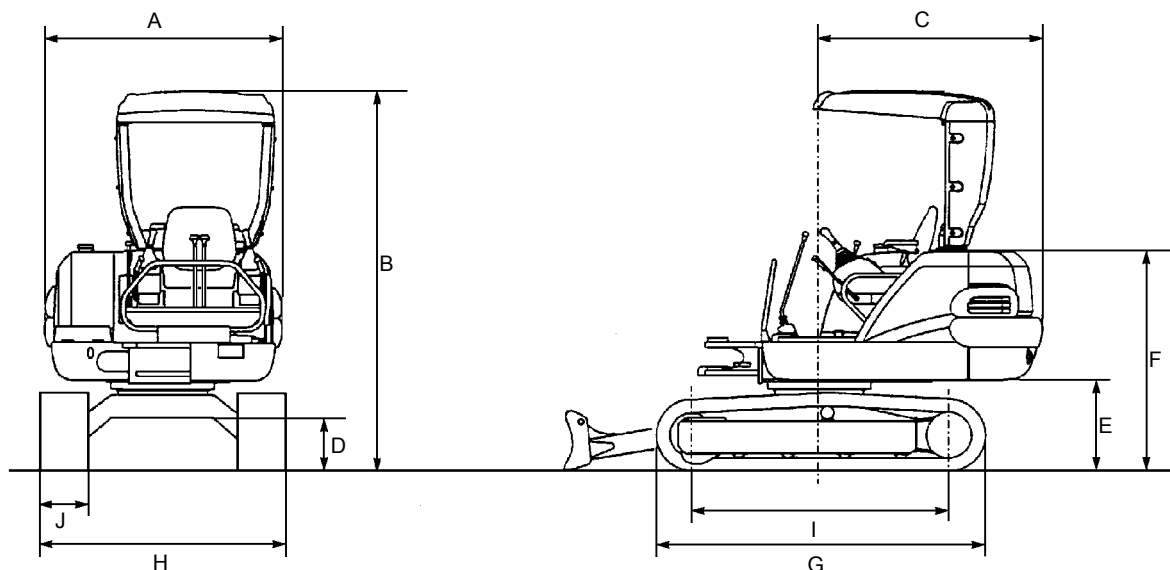
## GENERAL / Specifications

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## GENERAL / Specifications

	Unit	EX22-2		EX25-2		EX30-2	
		Canopy	Cab	Canopy	Cab	Canopy	Cab
Front Attachment	—	Boom Swing Type		Boom Swing Type		Boom Swing Type	
Bucket Capacity (Heaped)	m <sup>3</sup>	PCSA: 0.068 CECE: 0.06		PCSA: 0.08 CECE: 0.07		PCSA: 0.092 CECE: 0.08	
Operating Weight	kg (lb)	2250 (4960)	2380 (5250)	2400 (5290)	2530 (5580)	2750 (6060)	2880 (6350)
Base Machine Weight	kg (lb)	1750 (3860)	1880 (4150)	1860 (4100)	1990 (4390)	2140 (4720)	2270 (5000)
Engine	—	KUBOTA D1105 13.6 kW/2200 min <sup>-1</sup> (18.5 PS/2200 rpm)		KUBOTA D1105 14.7 kW/2400 min <sup>-1</sup> (20 PS/2400 rpm)		KUBOTA D1505 17.3 kW/2000 min <sup>-1</sup> (23.5 PS/2000 rpm)	
A: Overall Width	mm (ft in)	1450(4'9")	1460(4'10")	1450(4'9")	1460(4'10")	1470(4'10")	←
B: Cab Height	mm (ft in)	2340(7'8")	2430(7'12")	2340(7'8")	2430(7'12")	2350(7'9")	2440(8')
C: Rear End Swing Radius	mm (ft in)	1250 (4'1")		←		1370 (4'6")	
D: Minimum Ground Clearance	mm (ft in)	325 (1'1")		←		330 (1'1")	
E: Counterweight Clearance	mm (ft in)	555 (1'10")		←		565 (1'10")	
F: Engine Cover Height	mm (ft in)	1355 (4'5")		←		1350 (4'5")	
G: Undercarriage Length	mm (ft in)	1785 (5'10")		1890 (6'2")		2030 (6'8")	
H: Undercarriage Width	mm (ft in)	1400 (4'7")		1450 (4'9")		1520 (5')	
I: Sprocket Center to Idler Center	mm (ft in)	1350 (4'5")		1465 (4'10")		1590 (5'3")	
J: Track Shoe Width	mm (ft in)	250 (10")		300 (1')		←	
Ground Pressure	kPa (kgf/cm <sup>2</sup> , psi)	30 (0.31)	32 (0.33)	25 (0.25)	27 (0.27)	26 (0.26)	27 (0.27)
Swing Speed	min <sup>-1</sup> (rpm)	9.0		9.5		9.0	
Travel Speed (Fast/Slow)	km/h (mph)	3.7 / 2.2 (2.3 / 1.4)		4.0 / 2.4 (2.5 / 1.5)		4.5 / 3.0 (2.8 / 1.9)	
Gradeability	% (deg.)	58 (30)		←		←	

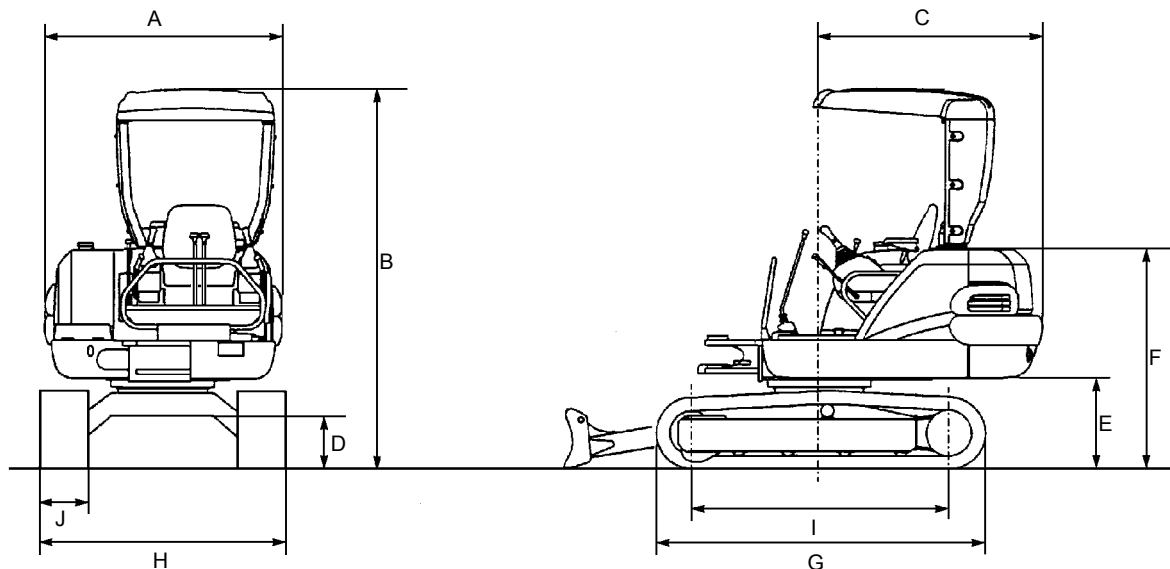


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## GENERAL / Specifications

	Unit	EX35-2		EX40-2		EX45-2	
		Canopy	Cab	Canopy	Cab	Canopy	Cab
Front Attachment	—	Boom Swing Type		Boom Swing Type		Boom Swing Type	
Bucket Capacity (Heaped)	m <sup>3</sup>	PCSA: 0.11 CECE: 0.10		PCSA: 0.14 CECE: 0.13		PCSA: 0.16 CECE: 0.14	
Operating Weight	kg (lb)	3100 (6830)	3230 (7120)	4000 (8820)	4150 (9150)	4300 (9480)	4450 (9810)
Base Machine Weight	kg (lb)	2440 (5380)	2570 (5670)	3410 (7520)	3560 (7850)	3660 (8070)	3810 (8400)
Engine	—	KUBOTA D1505 19.1 kW/2100 min <sup>-1</sup> (26 PS/2100 rpm)		KUBOTA V2203 26.5 kW/2100 min <sup>-1</sup> (36 PS/2100 rpm)		KUBOTA V2203 26.5 kW/2100 min <sup>-1</sup> (36 PS/2100 rpm)	
A: Overall Width	mm (ft in)	1470(4'10")	←	1690(5'7")	←	1690(5'7")	←
B: Cab Height	mm (ft in)	2350(7'9")	2440(8')	2520(8'3")	2595(8'6")	2520(8'3")	2595(8'6")
C: Rear End Swing Radius	mm (ft in)	1390 (4'7")		1445 (4'9")		←	
D: Minimum Ground Clearance	mm (ft in)	330 (1'1")		365 (1'2")		←	
E: Counterweight Clearance	mm (ft in)	565 (1'10")		635 (2'1")		←	
F: Engine Cover Height	mm (ft in)	1360 (4'6")		1535 (5')		←	
G: Undercarriage Length	mm (ft in)	2030 (6'8")		2440 (8')		←	
H: Undercarriage Width	mm (ft in)	1520 (5')		1850 (6'1")		←	
I: Sprocket Center to Idler Center	mm (ft in)	1590 (5'3")		1930 (6'3")		←	
J: Track Shoe Width	mm (ft in)	300 (1')		400 (1'4")		←	
Ground Pressure	kPa (kgf/cm <sup>2</sup> , psi)	29 (0.30)	30 (0.31)	23.6 (0.24)	24.5 (0.25)	25.4 (0.26)	26.5 (0.27)
Swing Speed	min <sup>-1</sup> (rpm)	9.0		10		←	
Travel Speed (Fast/Slow)	km/h (mph)	4.6 / 3.1 (2.9 / 1.9)		4.5 / 2.8 (2.8 / 1.8)		←	
Gradeability	% (deg.)	58 (30)		←		←	



## GENERAL / Specifications


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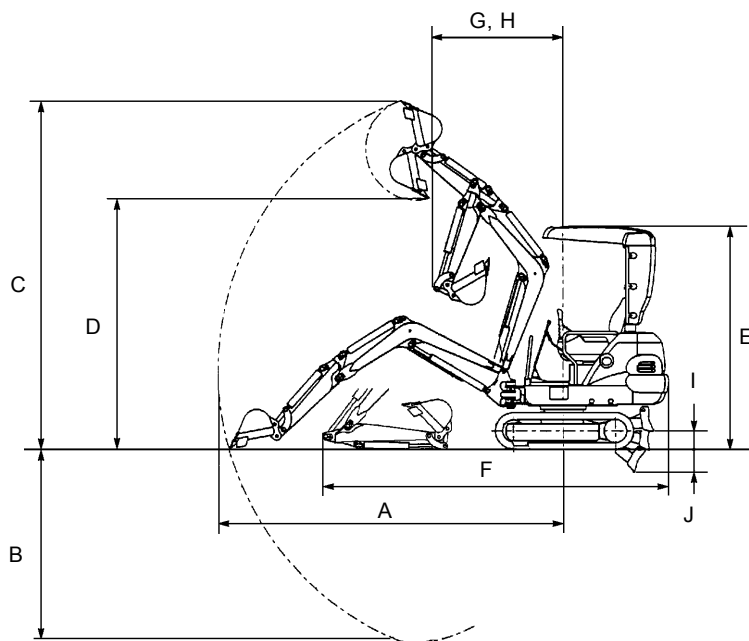
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## GENERAL / Specifications

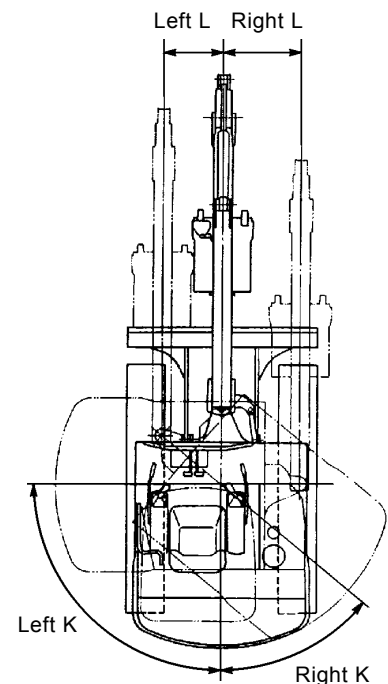
### WORKING RANGE. TRANSPORTATION

Model	EX12-2		EX15-2		EX18-2		EX22-2	
	Canopy	Cab	Canopy	Cab	Canopy	Cab	Canopy	Cab
A: Maximum Digging Reach mm (ft in)	3430 (11'3")	←	3680 (12'1")	←	3970 (13')	←	4360 (11'3")	←
B: Maximum Digging Depth mm (ft in)	1900 (6'3")	←	2170 (7'1")	←	2200 (7'3")	←	2440 (8')	←
C: Maximum Cutting Height mm (ft in)	3430 (11'3")	3120 (10'3")	3620 (11'1")	3260 (10'8")	3880 (12'9")	3475 (11'5")	4465 (11'8")	4215 (13'0")
D: Maximum Dumping Height mm (ft in)	2450 (8'1")	2190 (7'2")	2650 (8'8")	2330 (7'8")	2920 (9'7")	2560 (8'5")	3245 (10'8")	3020 (9'11")
E: Transport Height mm (ft in)	2220 (7'3")	2280 (7'6")	2200 (7'3")	2280 (7'6")	2320 (7'7")	2400 (7'10")	2340 (7'8")	2430 (8')
F: Overall Transport Length mm (ft in)	3520 (11'7")	←	3630 (11'11")	←	3800 (12'6")	←	4245 (13'11")	←
G: Minimum Swing Radius mm (ft in)	1270 (4'2")	1450 (4'9")	1270 (4'2")	1560 (5'1")	1560 (5'1")	1700 (5'7")	1430 (4'8")	1595 (5'3")
H: Minimum Swing Radius with Maximum Boom Swing Angle mm (ft in)	945 (3'1")	1240 (4'1")	960 (3'2")	1340 (4'5")	1160 (3'10")	1430 (4'8")	1075 (3'6")	1280 (4'2")
I: Blade Bottom Highest Position mm (ft in)	190 (8")	←	←	←	300 (1')	←	390 (1'3")	←
J: Blade Bottom Lowest Position mm (ft in)	220 (9")	←	←	←	290 (11")	←	355 (1'2")	←
K: Maximum Boom Swing Angle (°)	L 90° R 50°	L 70° ←	L 90° ←	L 70° ←	L 90° ←	L 70° ←	L 90° ←	L 80° ←
L: Offset Distance mm (ft in)	L400(1'4") R520(1'9")	← R490(1'7")	← R520(1'9")	← R490(1'7")	L475(1'7") R620(2'0")	← R580(1'11")	L480(1'7") R630(2'1")	← R620(2')

 NOTE: "E: Transport Height" do not include the height of shoe lug.



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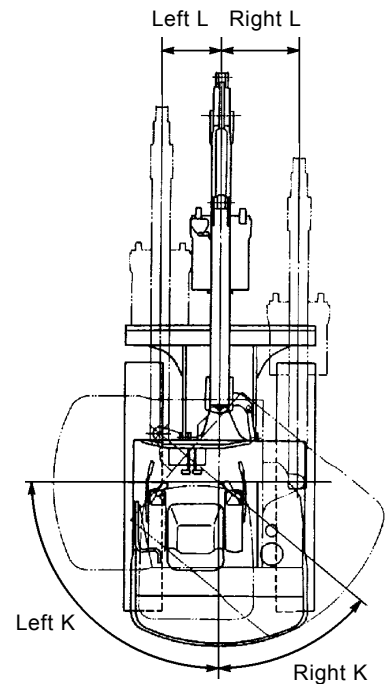
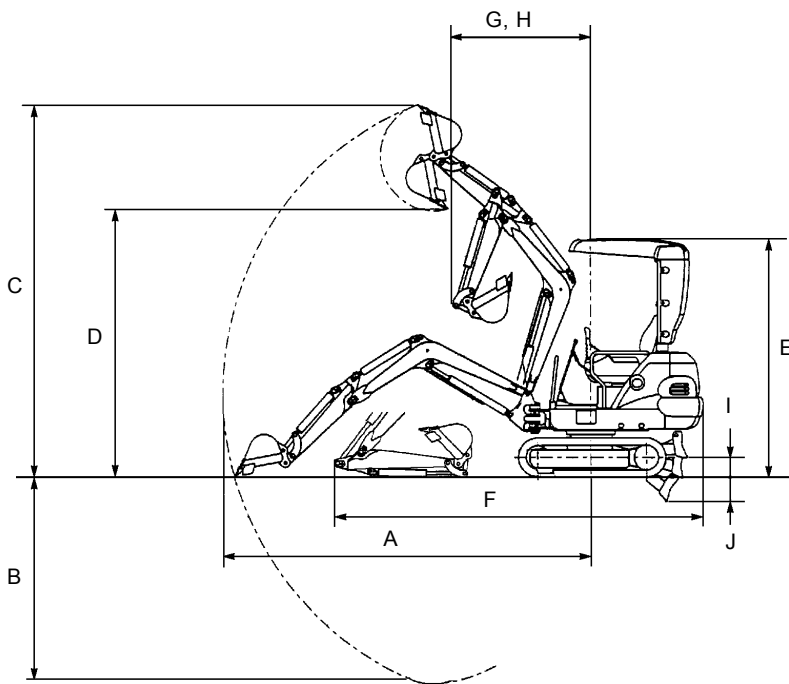


T523-01-01-004

## GENERAL / Specifications

EX25-2		EX30-2		EX35-2		EX40-2		EX45-2	
Canopy	Cab	Canopy	Cab	Canopy	Cab	Canopy	Cab	Canopy	Cab
4600 (15'1")	←	4810 (15'9")	←	5145 (16'11")	←	5720 (18'9")	←	5920 (19'5")	←
2745 (9')	←	2885 (9'6")	←	3140 (10'4")	←	3385 (11'1")	←	3585 (11'9")	←
4605 (15'1")	4330 (14'3")	4745 (15'7")	←	5145 (16'11")	←	5805 (19'1")	←	5940 (19'6")	←
3400 (11'2")	3155 (10'4")	3415 (11'2")	←	3805 (12'6")	←	4115 (13'6")	←	4250 (13'11")	←
2340 (7'8")	2430 (8')	2350 (7'9")	2440 (8')	2350 (7'9")	2440 (8')	2520 (8'3")	2595 (8'6")	2520 (8'3")	2595 (8'6")
4475 (14'8")	←	4680 (15'4")	←	4985 (16'4")	←	5430 (17'10")	←	5555 (18'3")	←
1430 (4'8")	1715 (5'8")	1560 (5'1")	←	1570 (5'2")	←	1930 (6'4")	←	1930 (6'4")	←
1080 (3'7")	1385 (4'7")	1185 (3'11")	1285 (4'3")	1185 (3'11")	1265 (4'2")	1450 (4'9")	1285 (4'3")	1455 (4'9")	1265 (4'2")
390 (1'3")	←	430 (1'5")	←	←	←	395(1'4") 315(1'0")	←	←	←
355 (1'2")	←	400 (1'4")	←	←	←	410(1'4") 365(1'2")	←	←	←
L 90° R 50°	L 80° ←	L 90° ←	L 80° ←	L 90° ←	L 80° ←	L 90° ←	L 80° ←	L 90° ←	L 80° ←
L480(17") R630(2'1")	← R620(2')	← R630(2'1")	← R620(2')	← R630(2'1")	← R620(2')	L590(17") R770(2'1")	← R760(2'0")	L590(1'11") R770(2'6")	← ←

NOTE: "E: Transport Height" do not include the height of shoe lug.



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## GENERAL / Specifications

### ENGINE SPECIFICATION

Model	EX12-2, EX18-2	EX15-2	EX22-2
Item			
Engine	KUBOTA	←	←
Model	D1105-BH-H-1	D1105-BH-H-2	D1105-BH-H-3
Type	Diesel 4 cycle, vertical, water cooled, swirl camber type	←	←
Cyl. No – bore×stroke	3-78 mm×78.4 mm	←	←
Piston displacement	1.123 L	←	←
Rated output	12.1 kW/2000 min <sup>-1</sup> (16.5 PS/2000 rpm)	12.9 kW/2100 min <sup>-1</sup> (17.5 PS/2100 rpm)	13.6 kW/2200 min <sup>-1</sup> (18.5 PS/2200 rpm)
Compression ratio	23	←	←
Dry weight	97.5 kg	←	←
Firing order	1-2-3	←	←
Rotation direction	Clockwise (viewed from fan side)	←	←
Starting system			
Motor	Reduction type	←	←
Voltage · Output	12 V · 1.4 kW	←	←
Alternator			
Type	AC type (with regulator)	←	←
Voltage · Output	12 V · 40 A	←	←
Fuel system			
Type	Bosch MD type	←	←
Governor	Centrifugal ball type	←	←

## GENERAL / Specifications

EX25-2	EX30-2	EX35-2	EX40-2, EX45-2
KUBOTA	←	←	←
D1105-BH-H-4	V1505-BH-H-1	V1505-BH-H-2	V2203-BH-HCM-1
Diesel 4 cycle, vertical, water cooled, swirl cam- ber type	←	←	←
3-78 mm×78.4 mm	4-78 mm×78.4 mm	←	4-87 mm×92.4 mm
1.123 L	1.498 L	←	2.197 L
14.7 kW/2400 min <sup>-1</sup> (20 PS/2400 rpm)	17.3 kW/2000 min <sup>-1</sup> (23.5 PS/2000 rpm)	19.1 kW/2200 min <sup>-1</sup> (26.0 PS/2200 rpm)	26.5 kW/2100 min <sup>-1</sup> (36.0 PS/2100 rpm)
23	22	←	23
97.5 kg	125 kg	←	196 kg
1-2-3	1-3-4-2	←	1-3-4-2
Clockwise (viewed from fan side)	←	←	←
Reduction type	←	←	←
12 V·1.4 kW	←	←	12 V·2.0 kW
AC type (with regulator)	←	←	←
12 V·40 A	←	←	12 V·45 A
Bosch MD type	←	←	Bosch K type
Centrifugal ball type	←	←	←

## GENERAL / Specifications

### INTERCHANGEABILITY


**IMPORTANT:** Part interchangeability is changed when the part is modified. Be sure to check update interchangeability referring to the current parts catalog.

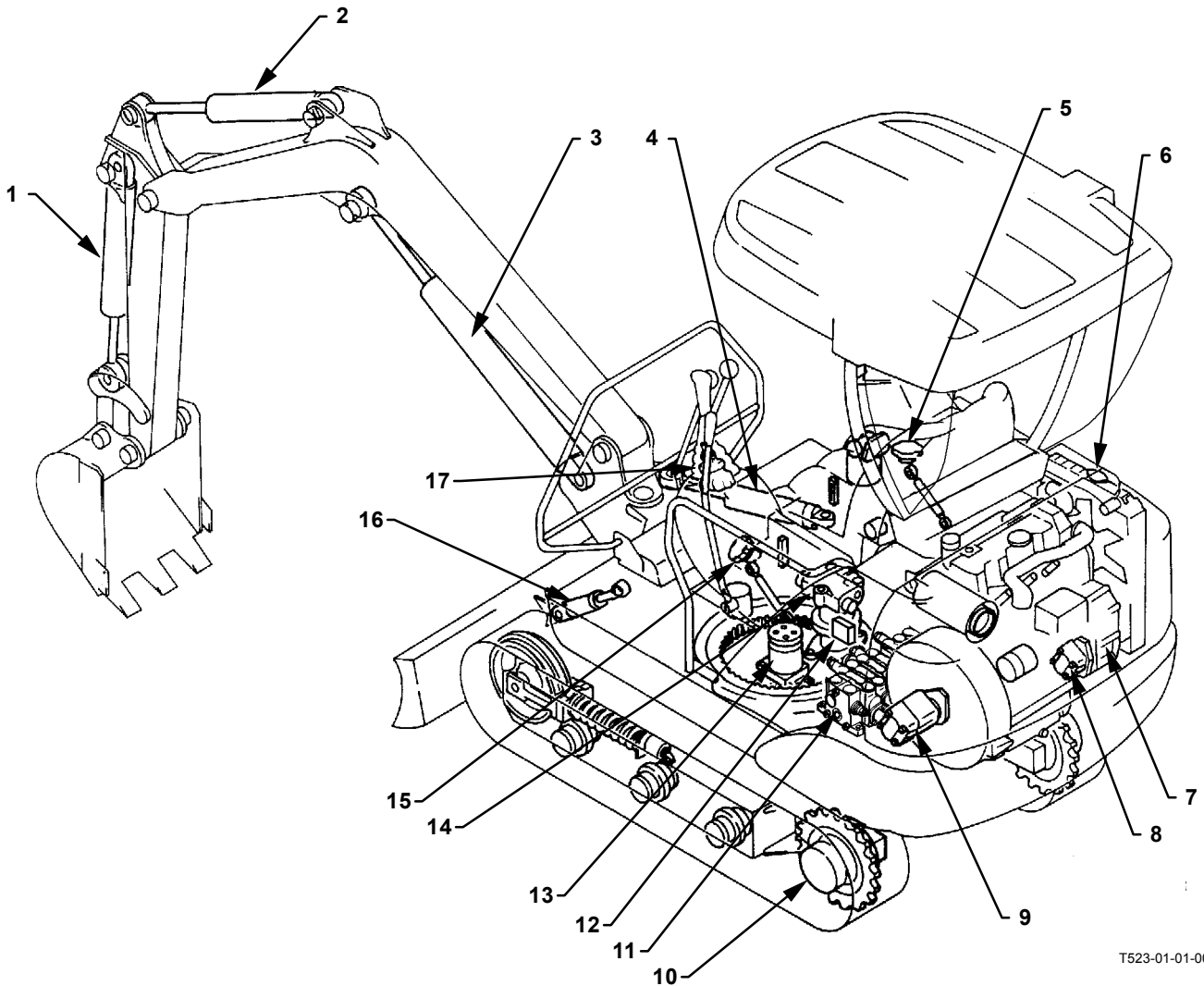
Item	Model	Interchangeable								
		EX12-2	EX15-2	EX18-2	EX22-2	EX25-2	EX30-2	EX35-2	EX40-2	EX45-2
Upperstructure										
Engine		●	●	●	●	●	●	●	●	●
Pump Device		●	●	●	●	●	●	●	●	●
Swing Device		●	●	●	●	●	●	●	●	●
Control Valve		●	●	●	●	●	●	●	●	●
Pilot Valve		●	●	●	●	●	●	●	●	●
Boom Swing Cylinder		●	●	●	●	●	●	●	●	●
Undercarriage										
Travel Device		●	●	●	●	●	●	●	●	●
Swing Bearing		●	●	●	●	●	●	●	●	●
Center Joint		●	●	●	●	●	●	●	●	●
Track Adjuster		●	●	●	●	●	●	●	●	●
Front Idler		●	●	●	●	●	●	●	●	●
Upper Roller		—	—	—	—	—	●	●	●	●
Lower Roller		●	●	●	●	●	●	●	●	●
Rubber Crawler		●	●	●	●	●	●	●	●	●
Blade		●	●	●	●	●	●	●	●	●
Blade Cylinder		●	●	●	●	●	●	●	●	●
Front Attachment										
Boom		●	●	●	●	●	●	●	●	●
Arm		●	●	●	●	●	●	●	●	●
Bucket		●	●	●	●	●	●	●	●	●
Boom Cylinder		●	●	●	●	●	●	●	●	●
Arm Cylinder		●	●	●	●	●	●	●	●	●
Bucket Cylinder		●	●	●	●	●	●	●	●	●

# GENERAL / Component Layout

## MAIN COMPONENTS

EX12-2, EX15-2, EX18-2

 NOTE: The components depends on the serial number. Refer to INTRODUCTION (IN-01) for the corresponding serial numbers.



T523-01-01-001

- |                         |                    |   |                     |
|-------------------------|--------------------|---|---------------------|
| 1 - Bucket Cylinder     | 6 - Radiator       | 11 - Control Valve  | 16 - Blade Cylinder |
| 2 - Arm Cylinder        | 7 - Engine         | 12 - Pilot Shut-Off Valve (Type A)<br>Solenoid Valve (Type B) | 17 - Pilot Valve    |
| 3 - Boom Cylinder       | 8 - Pilot Pump     | 13 - Center Joint   |                     |
| 4 - Boom Swing Cylinder | 9 - Main Pump      | 14 - Swing Device   |                     |
| 5 - Hydraulic Oil Tank  | 10 - Travel Device | 15 - Fuel Tank  |                     |




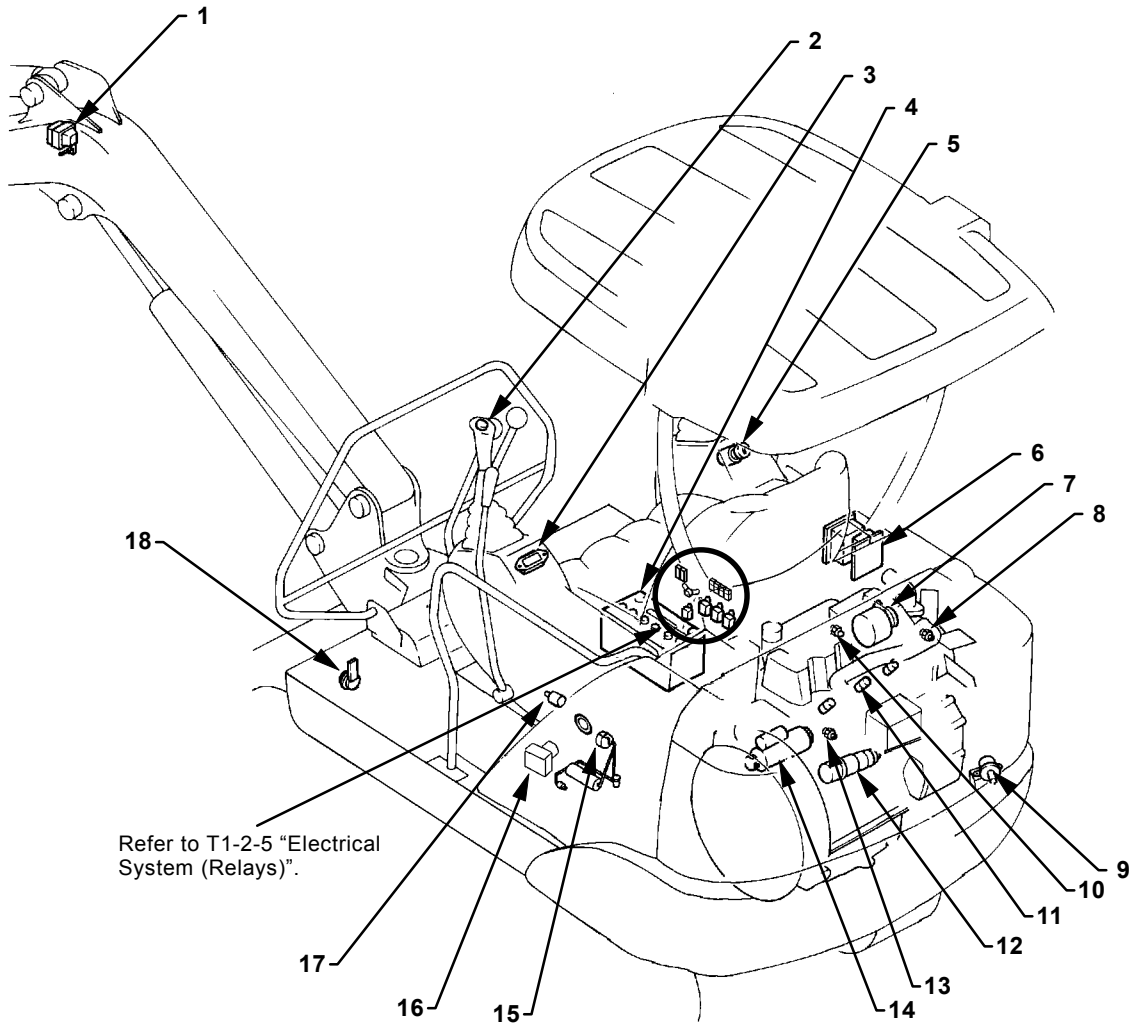


# GENERAL / Component Layout

## ELECTRICAL SYSTEM (Overall System)

EX12-2, EX15-2, EX18-2

 **NOTE:** The components depends on the serial number. Refer to INTRODUCTION (IN-01) for the corresponding serial numbers.




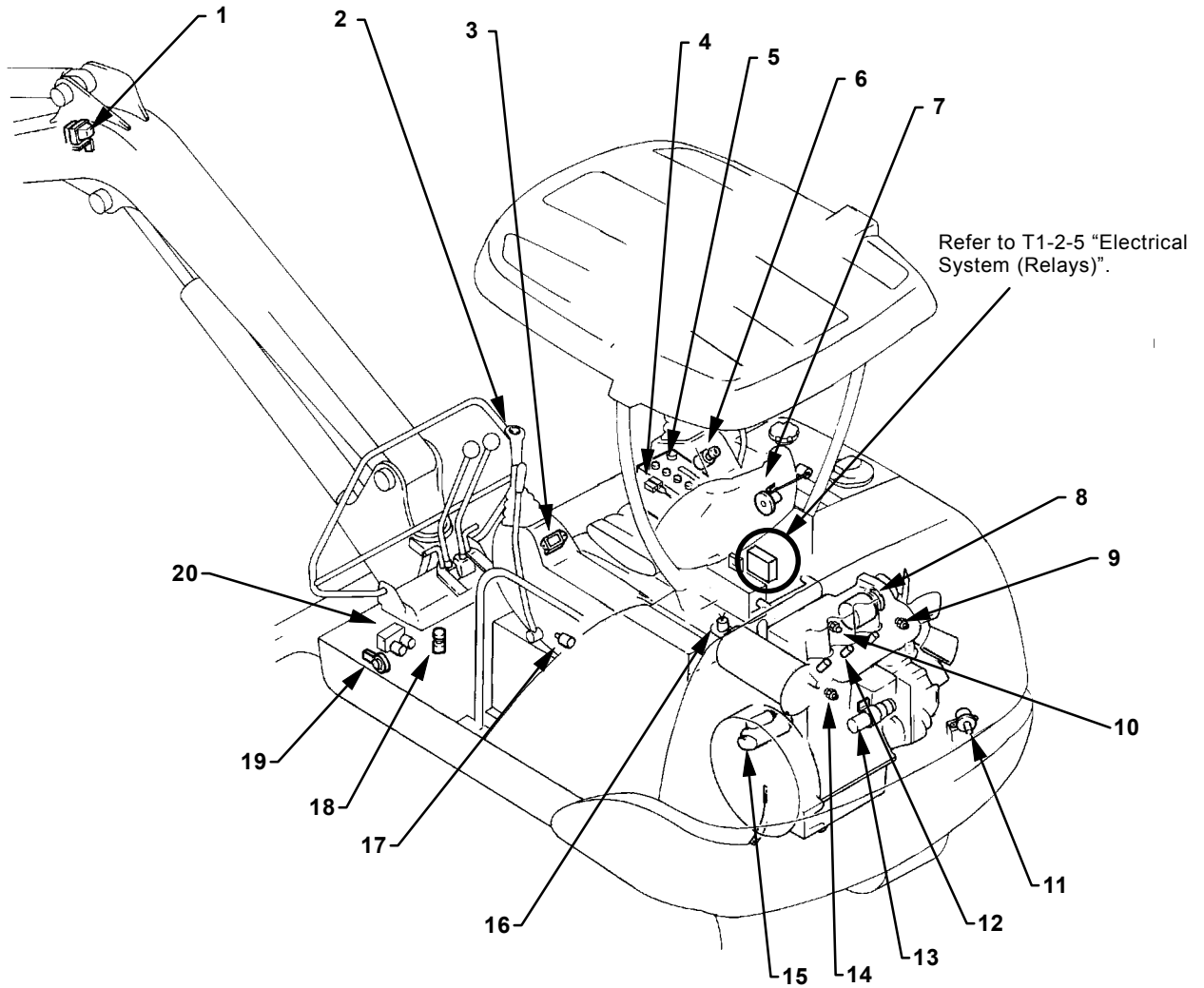
T523-01-01-005

- |                 |                                 |                                 |                                     |
|-----------------|---------------------------------|---------------------------------|-------------------------------------|
| 1 - Work Light  | 6 - Fuse Box                    | 11 - Glow Plug                  | 15 - Fuel Sensor                    |
| 2 - Horn Switch | 7 - Alternator                  | 12 - Engine Stop Solenoid       | 16 - Solenoid Valve (Type B)        |
| 3 - Hour Meter  | 8 - Overheat Switch             | 13 - Coolant Temperature Sensor | 17 - Pilot Shut-Off Switch (Type B) |
| 4 - Battery     | 9 - Fuel Pump                   | 14 - Starter                    | 18 - Horn                           |
| 5 - Key Switch  | 10 - Engine Oil Pressure Switch |                                 |                                     |

# GENERAL / Component Layout

EX22-2, EX25-2, EX30-2, EX35-2, EX40-2, EX45-2

 **NOTE:** The components depends on the serial number. Refer to INTRODUCTION (IN-01) for the corresponding serial numbers.




T525-01-01-003

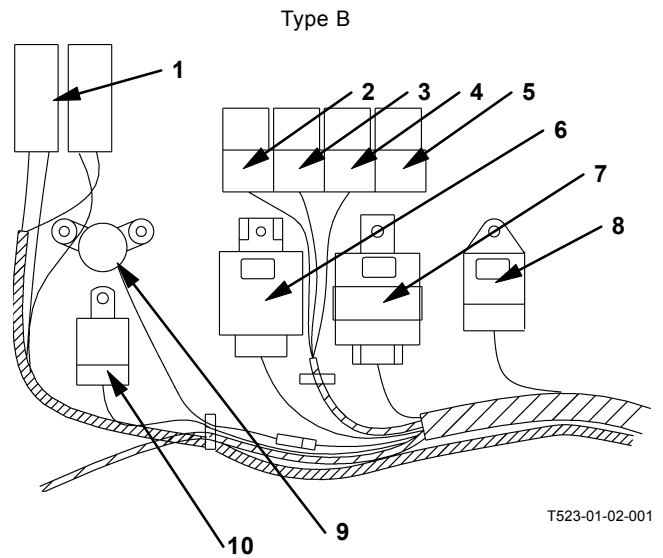
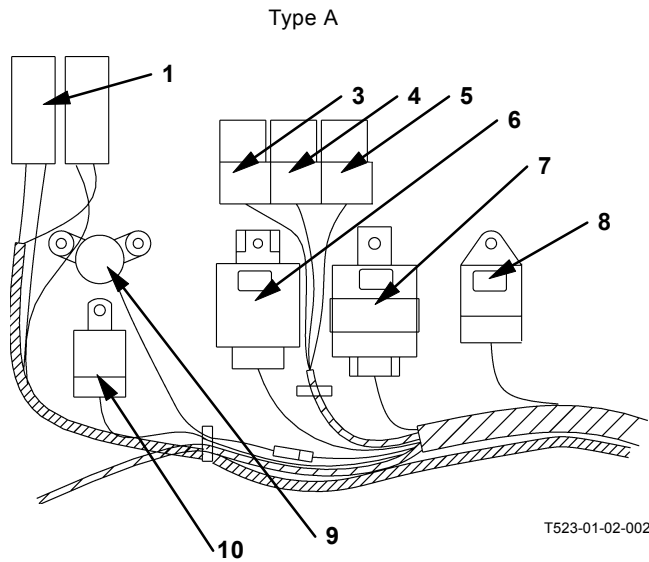
- |                  |                                |                                    |  |
|------------------|--------------------------------|------------------------------------|--|
| 1 - Work Light   | 7 - Fuel Sensor                | 13 - Engine Stop Solenoid          | 17 - Pilot Shut-Off Switch (Type B)                            |
| 2 - Horn Switch  | 8 - Alternator                 | 14 - Coolant Temperature Sensor    | 18 - Travel Speed Change Switch                                |
| 3 - Hour Meter   | 9 - Engine Oil Pressure Switch | 15 - Starter                       | 19 - Horn  |
| 4 - Fusible Link | 10 - Overheat Switch           | 16 - Air Filter Restriction Switch | 20 - Solenoid Valve (Type A)<br>2-Unit Solenoid Valve (Type B) |
| 5 - Battery      | 11 - Fuel Pump                 |                                    |  |
| 6 - Key Switch   | 12 - Glow Plug                 |                                    |  |

# GENERAL / Component Layout

## ELECTRICAL SYSTEM (Relays)

EX12-2, EX15-2, EX18-2

 **NOTE:** The components depends on the serial number. Refer to INTRODUCTION (IN-01) for the corresponding serial numbers.



- |                                   |                      |
|-----------------------------------|----------------------|
| 1 - Fusible Link                  | 4 - Work Light Relay |
| 2 - Pilot Shut-Off Relay (Type B) | 5 - Horn Relay       |
| 3 - Hour Meter Relay              | 6 - Timer Unit       |
|                                   | 7 - Starter Relay 2  |
|                                   | 8 - Glow Timer       |
|                                   | 9 - Buzzer           |
|                                   | 10 - Starter Relay 1 |

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