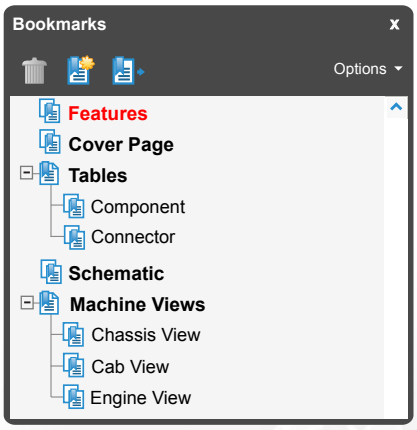
INTERACTIVE SCHEMATIC

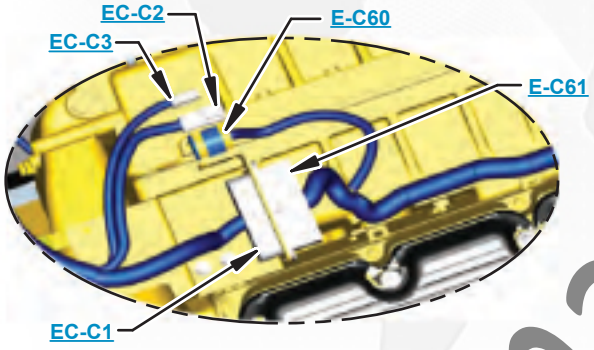


The Bookmarks panel will allow you to quickly navigate to points of interest.

This document is best viewed at a screen resolution of 1024 X 768.

To set your screen resolution do the following:
RIGHT CLICK on the **DESKTOP**.
Select **PROPERTIES**.
CLICK the **SETTINGS TAB**.
MOVE THE SLIDER under **SCREEN RESOLUTION** until it shows **1024 X 768**.
CLICK OK to apply the resolution.

**Due to different monitor sizes and PDF reader preferences there may be some variance in linked schematic locations*



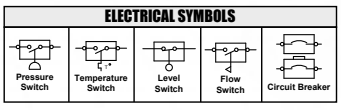
Click on any text that is BLUE and underlined. These are hyperlinks that can be used to navigate the schematic and machine views.

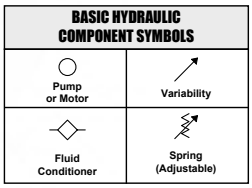
Click here to save a copy of this interactive schematic to your desktop

VIEW ALL CALLOUTS

When only one callout is showing on a machine view, clicking on this button will make all of the callouts visible. This button is located in the top right corner of every machine view page.

HOTKEYS (Keyboard Shortcuts)		
	FUNCTION	**KEYS**
	Zoom In	"CTRL" / "+"
	Zoom Out	"CTRL" / "-"
	Fit to Page	"CTRL" / "0" (zero)
	Hand Tool	"SPACEBAR" (hold down)
	Find	"CTRL" / "F"





Click here to view the Schematic Symbols and Definitions page

SCHEMATIC SYMBOLS AND DEFINITIONS

VALVES

ENVELOPES

One Position | Two Position | Three Position

PORTS

Two-way | Three-Way | Four-Way

CONTROL

Normal Position (A B / P T) | Shifted Position (A B / P T) | Infinite Position

CHECK

Basic Symbol | Spring Loaded | Shuttle | Pilot Controlled

INTERNAL PASSAGEWAYS

FLOW IN ONE DIRECTION	FLOW ALLOWED IN EITHER DIRECTION	PARALLEL FLOW / CROSS FLOW
Infinite Positioning	Two Position	Three Position

CYLINDERS

Single Acting | Double Acting

ACCUMULATORS

Spring Loaded | Gas Charged

PUMPS

FIXED DISPLACEMENT

Unidirectional | Bidirectional

VARIABLE DISPLACEMENT NON- COMPENSATED

Unidirectional | Bidirectional

MOTORS

FIXED DISPLACEMENT

Unidirectional | Bidirectional

VARIABLE DISPLACEMENT NON- COMPENSATED

Unidirectional | Bidirectional

BASIC HYDRAULIC COMPONENT SYMBOLS

Pump or Motor	Variability
Fluid Conditioner	Spring (Adjustable)
Spring	Pressure Compensation
Control Valves	Line Restriction (Variable)
Restriction	Line Restriction (Fixed)
Line Restriction Variable and Pressure Compensated	MAIN AUX. 2-Section Pump
Attachment	Pump: Variable and Pressure Compensated

Hydraulic Energy Triangles | Pneumatic

PILOT CONTROL

RELEASED PRESSURE

External Return | Internal Return

REMOTE SUPPLY PRESSURE

Simplified | Complete | Internal Supply Pressure

ROTATING SHAFTS

Unidirectional | Bidirectional

COMBINATION CONTROLS

Solenoid | Solenoid or Manual | Solenoid and Pilot | Solenoid and Pilot or Manual | Servo | Thermal | Detent

LINES

Crossing | Joining

MEASUREMENT

Pressure | Temperature | Flow

MANUAL CONTROL

Push-pull Lever | Manual Shutoff | General Manual | Push Button | Pedal | Spring

FLUID STORAGE RESERVOIRS

Vented | Pressurized | Return Above Fluid Level | Return Below Fluid Level

HYDRAULIC SYMBOLS - ELECTRICAL

Transducer (Fluid) | Transducer (Gas / Air) | Generator | Electric Motor | Pressure Switch | Pressure Switch (Adjustable) | Temperature Switch | Electrical Wire

ELECTRICAL SYMBOLS

Pressure Switch | Temperature Switch | Level Switch | Flow Switch | Circuit Breaker

BASIC ELECTRICAL COMPONENT SYMBOLS

Fuse: A component in an electrical circuit that will open the circuit if too much current flows through it.

Switch (Normally Open): A switch that will close at a specified point (temp, press, etc.). The circle indicates that the component has screw terminals and a wire can be disconnected from it.

Switch (Normally Closed): A switch that will open at a specified point (temp, press, etc.). No circle indicates that the wire cannot be disconnected from the component.

Ground (Wired): This indicates that the component is connected to a grounded wire. The grounded wire is fastened to the machine.

Ground (Case): This indicates that the component does not have a wire connected to ground. It is grounded by being fastened to the machine.

Reed Switch: A switch whose contacts are controlled by a magnet. A magnet closes the contacts of a normally open reed switch; it opens the contacts of a normally closed reed switch.

Sender: A component that is used with a temperature or pressure gauge. The sender measures the temperature or pressure. Its resistance changes to give an indication to the gauge of the temperature or pressure.

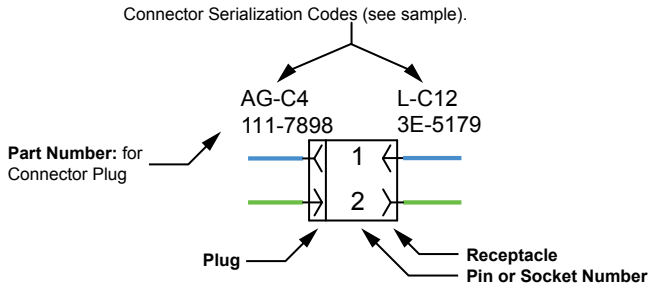
Relay (Magnetic Switch): A relay is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close the switch part of the relay.

Solenoid: A solenoid is an electrical component that is activated by electricity. It has a coil that makes an electromagnet when current flows through it. The electromagnet can open or close a valve or move a piece of metal that can do work.

Magnetic Latch Solenoid: An electrical component that is activated by electricity and held latched by a permanent magnet. It has two coils (latch and unlatch) that make electromagnet when current flows through them. It also has an internal switch that places the latch coil circuit open at the time the coil latches.

HARNESS AND WIRE SYMBOLS

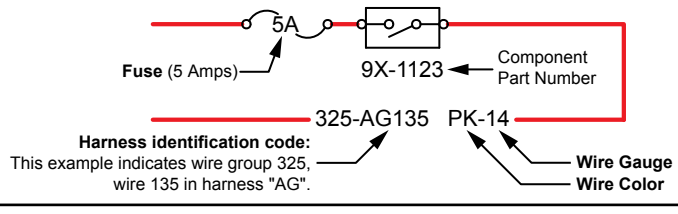
Wire, Cable, or Harness Assembly Identification: Includes Harness Identification Letters and Harness Connector Serialization Codes (see sample).

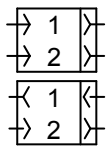


Harness Identification Letter(s): (A, B, C, AA, AB, AC, ...)

Harness Connector Serialization Code: The "C" stands for "Connector" and the number indicates which connector in the harness (C1, C2, C3, ...)

L-C12
3E-5179





Deutsch connector: Typical representation of a Deutsch connector. The plug contains all sockets and the receptacle contains all pins.

Sure-Seal connector: Typical representation of a Sure-Seal connector. The plug and receptacle contain both pins and sockets.

CATERPILLAR®

UENR3202
November 2013

Schematic

725C and 730C Articulated Truck Hydraulic System

725C:
LFB1-UP
TFB1-UP

730C:
LFF1-UP
TFF1-UP

Printed in U.S.A.

COMPONENT TABLE

Component Locations							
Description	Part Number	Machine Location	Schematic Location	Description	Part Number	Machine Location	Schematic Location
Accumulator GP - Brake	236-7794	1	F-8	Plug - Orifice	166-4057	23	D-5
Accumulator GP - Brake (Parking) (Main Control Valve)	163-5632	2	E-7	Pump GP - ATAAC	371-9334	24	D-1
Body - Drain Valve	8J-8782	3	B-5	Pump GP - Fan, Brake, and Hoist	240-2647	25	C-7
Brake GP - Hydraulic Caliper (LH Center Axle)	347-9761	4	F-2	Pump GP - Metering (HMU)	223-7718	26	D-4
Brake GP - Hydraulic Caliper (LH Front Axle)	347-9761	5	D-8	Pump GP - Secondary Steering	369-7919	27	D-5
Brake GP - Hydraulic Caliper (LH Rear Axle)	347-9761	6	F-1	Pump GP - Steering	240-2647	28	C-6
Brake GP - Hydraulic Caliper (RH Center Axle)	347-9761	7	F-2	Screen - Hydraulic Tank (Fan, Brake, and Hoist and Steering Pumps)	119-4885	29	B-6
Brake GP - Hydraulic Caliper (RH Front Axle)	347-9761	8	E-8	Screen - Hydraulic Tank (Main Hydraulic Fan and ATAAC Motors)	119-4885	30	B-4
Brake GP - Hydraulic Caliper (RH Rear Axle)	347-9761	9	F-1	Sensor GP - Pressure (Brake Oil) (S2)	344-7391	31	F-7
Brake GP - Parking	160-8009	10	F-5	Sensor GP - Pressure (Brake Oil) (S3)	344-7391	32	F-7
Breather - Hydraulic Tank	356-7423	11	C-5	Sensor GP - Pressure (Parking Brake Warning)	344-7391	33	F-6
Cylinder GP - Hoist (LH)	285-4031	12	F-3	Switch AS - Pressure (Steering)	313-5104	34	D-6
Cylinder GP - Hoist (RH)	285-4032	13	F-3	Switch GP - Pressure (Hydraulic Tank Return Bypass)	253-2673	35	C-3
Cylinder GP - Steering (LH)	349-8518	14	E-3	Tank GP - Hydraulic	381-3512	36	B-3
Cylinder GP - Steering (RH)	349-8517	15	D-3	Valve AS - Control (Hydraulic Oil)	360-5604	37	D-2
Cylinder GP - Suspension (LH)	341-4122	16	B-4	Valve GP - Brake Pedal	373-4532	38	D-8
Cylinder GP - Suspension (RH)	341-4122	17	F-4	Valve GP - Check (Hydraulic Oil Cooler Bypass)	145-8983	39	C-3
Filter Element AS - Hydraulic Oil	132-8876	18	B-3	Valve GP - Cross-Axle Differential Control (Center and Rear Axle)	432-1661	40	C-1
Motor GP - ATAAC	395-0530	19	E-1	Valve GP - Cross-Axle Differential Control (Front Axle)	432-1661	41	C-2
Motor GP - Main Hydraulic Fan	293-6517	20	D-2	Valve GP - Hoist Control	281-3307	42	E-4
Oil Cooler	366-8881	21	D-2	Valve GP - Main Control	437-1480	43	F-7
Plate AS - Diffuser	419-3907	22	B-3	Valve GP - Solenoid (ATAAC Control)	211-2092	44	E-1

TAP TABLE

Tap Locations Pressure, Sampling, and Sensor		
Tap Number	**Description**	**Schematic Location**
AA	Front Axle Cross-Axle Differential Pressure	B-2
BB	Center and Rear Axle Cross-Axle Differential Pressure	B-1
CC	ATAAC Fan Pressure	E-1
TP1	Fan, Brake, and Hoist Pump Pressure	D-6
TP2	Steering Pump Pressure	D-6
TPBR	Brake Accumulator Charge Pressure	E-7
TPDL	Cross-Axle Differential Pressure	E-5
TPF	Fan Drive Pressure	E-7
TPHP	Hoist Pilot Pressure	F-6
TPST	Steering Pressure	D-6

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30 Page, (Dimensions: 39 inches x 28 inches)

(1) ACCUMULATOR GP BRAKE 236-7794
(2) ACCUMULATOR GP BRAKE (PARKING) (MAIN CONTROL VALVE) 163-5632
(3) BODY DRAIN VALVE 8J-8782
(5) BRAKE GP HYDRAULIC CALIPER (LH FRONT AXLE) 347-9761
(6) BRAKE GP HYDRAULIC CALIPER (LH REAR AXLE) 347-9761
(7) BRAKE GP HYDRAULIC CALIPER (RH CENTER AXLE) 347-9761
(8) BRAKE GP HYDRAULIC CALIPER (RH FRONT AXLE) 347-9761
(9) BRAKE GP HYDRAULIC CALIPER (RH REAR AXLE) 347-9761
(10) BRAKE GP PARKING 160-8009
(11) BREATHER HYDRAULIC TANK 356-7423
(12) CYLINDER GP HOIST (LH) 285-4031
(13) CYLINDER GP HOIST (RH) 285-4032
(14) CYLINDER GP STEERING (LH) 349-8513
(15) CYLINDER GP STEERING (RH) 349-8517
(16) CYLINDER GP SUSPENSION (LH) 341-4122
(17) CYLINDER GP SUSPENSION (RH) 341-4122
(18) FILTER ELEMENT AS HYDRAULIC OIL 132-8876
(19) MOTOR GP ATAAC 395-0530
(20) MOTOR GP MAIN HYDRAULIC FAN 293-6517
(21) OIL COOLER 366-8881
(22) PLATE AS DIFFUSER 419-3907
(23) PLUG ORIFICE 166-4057
(24) PUMP GP ATAAC 371-9334
(25) PUMP GP FAN, BRAKE, AND HOIST 240-2647
(26) PUMP GP METERING (HMU) 223-7718
(27) PUMP GP SECONDARY STEERING 369-7919
(28) PUMP GP STEERING 240-2647
(29) SCREEN HYDRAULIC TANK (FAN, BRAKE, AND HOIST AND STEERING PUMPS) 119-4885
(30) SCREEN HYDRAULIC TANK (MAIN HYD FAN AND ATAAC MOTORS) 119-4885
(31) SENSOR GP PRESSURE (BRAKE OIL) (SS) 344-7391
(32) SENSOR GP PRESSURE (BRAKE OIL) (ES) 344-7391
(33) SENSOR GP PRESSURE (PARKING BRAKE WARNING) 344-7391
(34) SENSOR GP PRESSURE (STEERING) 313-5104
(35) SWITCH GP PRESSURE (HYDRAULIC TANK RETURN BYPASS) 253-2670
(36) TANK GP HYDRAULIC 381-3512
(37) VALVE AS CONTROL (HYDRAULIC OIL) 360-5604
(38) VALVE GP BRAKE PEDAL 373-4532
(39) VALVE GP CHECK (HYDRAULIC OIL COOLER BYPASS) 145-8983
(40) VALVE GP CROSS-AXLE DIFFERENTIAL CONTROL (CENTER AND REAR AXLE) 432-1661
(41) VALVE GP CROSS-AXLE DIFFERENTIAL CONTROL (FRONT AXLE) 432-1661
(42) VALVE GP HOIST CONTROL 281-3307
(43) VALVE GP MAIN CONTROL 437-1480
(44) VALVE GP SOLENOID (ATAAC CONTROL) 211-2092

RAISE
LOWER
LEFT TURN
RIGHT TURN
TRACTOR TRAILER HITCH
PRIME
TRANSMISSION
FRONT AXLE CROSS-AXLE DIFFERENTIAL
CENTER AXLE CROSS-AXLE DIFFERENTIAL
REAR AXLE CROSS-AXLE DIFFERENTIAL

Tap Locations
Pressure, Sampling, and Sensor

Tap Number	Description	Schematic Location
AA	Front Axle Cross-Axle Differential Pressure	B-2
BB	Center and Rear Axle Cross-Axle Differential Pressure	B-1
CC	ATAAC Fan Pressure	E-1
TP1	Fan, Brake, and Hoist Pump Pressure	D-6
TP2	Steering Pump Pressure	D-6
TPBR	Brake Accumulator Charge Pressure	E-7
TPDL	Cross-Axle Differential Pressure	E-5
TPF	Fan Drive Pressure	E-7
TPHP	Hoist Pilot Pressure	F-6
TPST	Steering Pressure	D-6

LINE PATTERNS

———	Pressure Line
– – – – –	Pilot / Load Sensing Pressure
· · · ·	Drain / Return Lines
– ——— – ———	Component Group

CALLOUTS

◇ TP	Taps (Pressure, Sampling, Sensor - by letter)
(F)	Connections

Callout Number (Machine Location from Component Locations Table) — (52) VALVE GP - CONTROL 138-1234 — Component Name / Part Number

HYDRAULIC CIRCUIT COLOR DESCRIPTIONS

STEERING AND EJECTOR PUMP OUTPUT
EJECTOR CIRCUIT
ATAAC CIRCUIT
SUPPLY LINE
SECONDARY STEERING PUMP OUTPUT
FAN, BRAKE, AND EJECTOR PUMP OUTPUT
DRAIN / RETURN LINE
MAIN HYDRAULIC FAN CIRCUIT
BRAKE CIRCUIT
PARKING BRAKE CIRCUIT
CROSS-AXLE DIFFERENTIAL CONTROL CIRCUIT
SUSPENSION CIRCUIT
ELECTRICAL CIRCUITS

THIS SCHEMATIC IS FOR THE 725C AND 730C ARTICULATED TRUCK HYDRAULIC SYSTEM

MEDIA NUMBER: UENR3202

SCHEMATIC PART NUMBER: 372-5143, CHANGE: 00, VERSION: GB

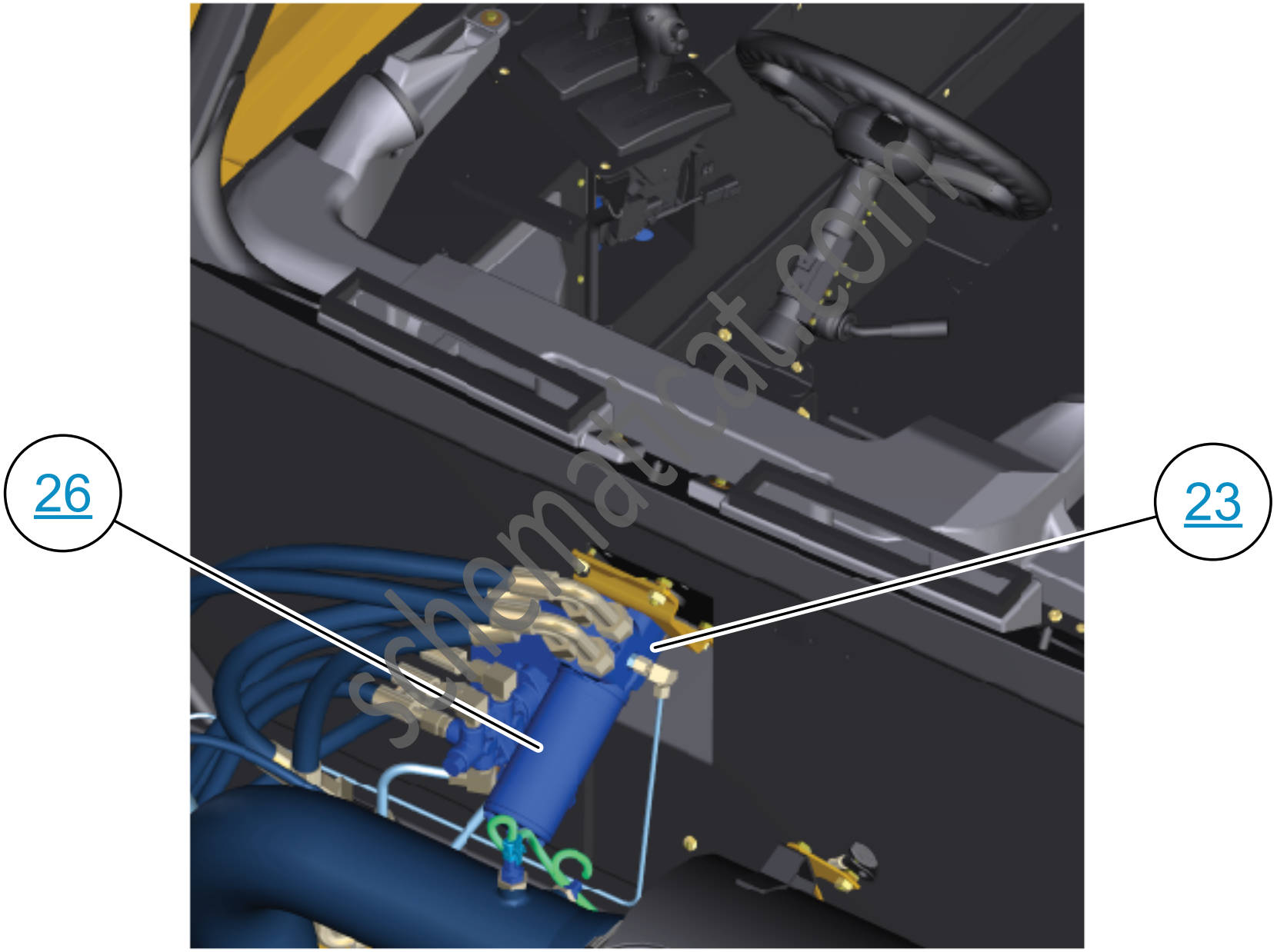
Components are shown installed on a fully operable machine with the key and engine off, transmission shifter in neutral and with parking brake set.

Refer to the appropriate Service Manual for Troubleshooting, Specifications and Systems Operations.

Note: Refer to the Parts Manual using a specific serial number prefix in SIS before ordering parts from this schematic.

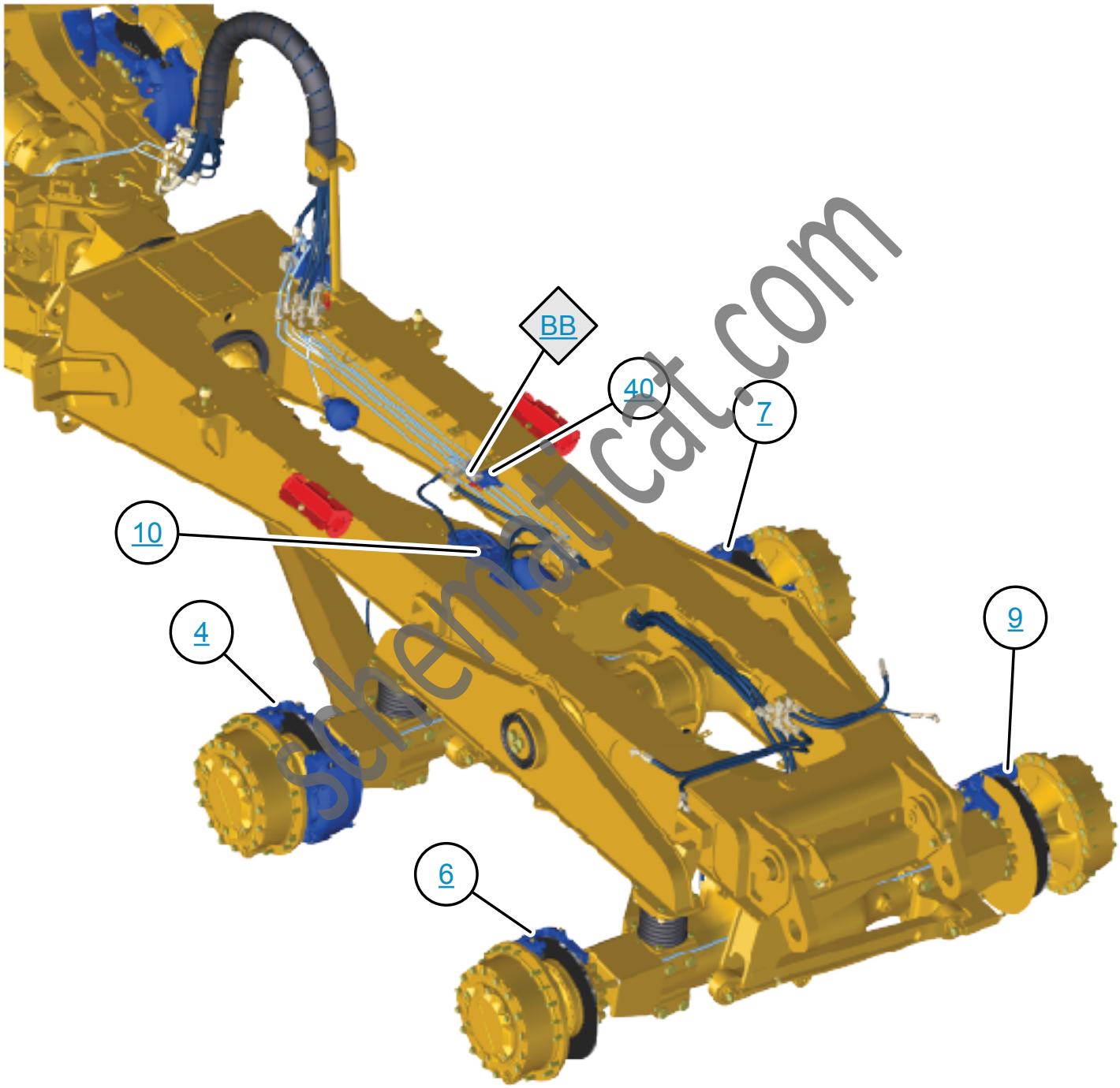
STEERING COMPONENTS

VIEW ALL CALLOUTS



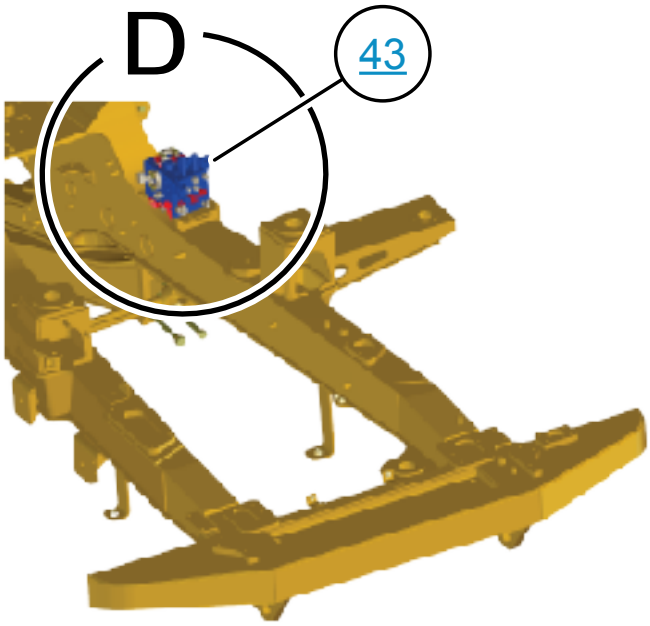
REAR FRAME COMPONENTS

VIEW ALL CALLOUTS



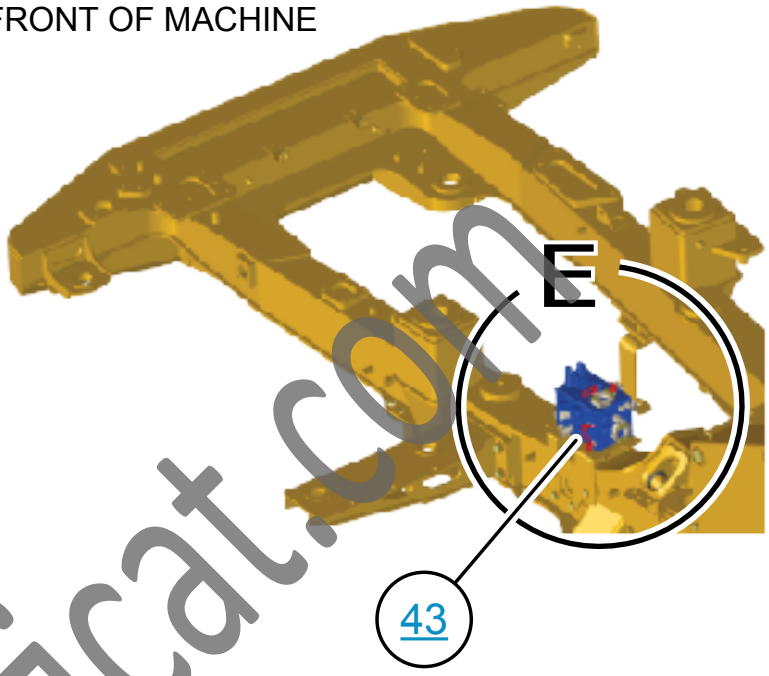
MAIN CONTROL VALVE

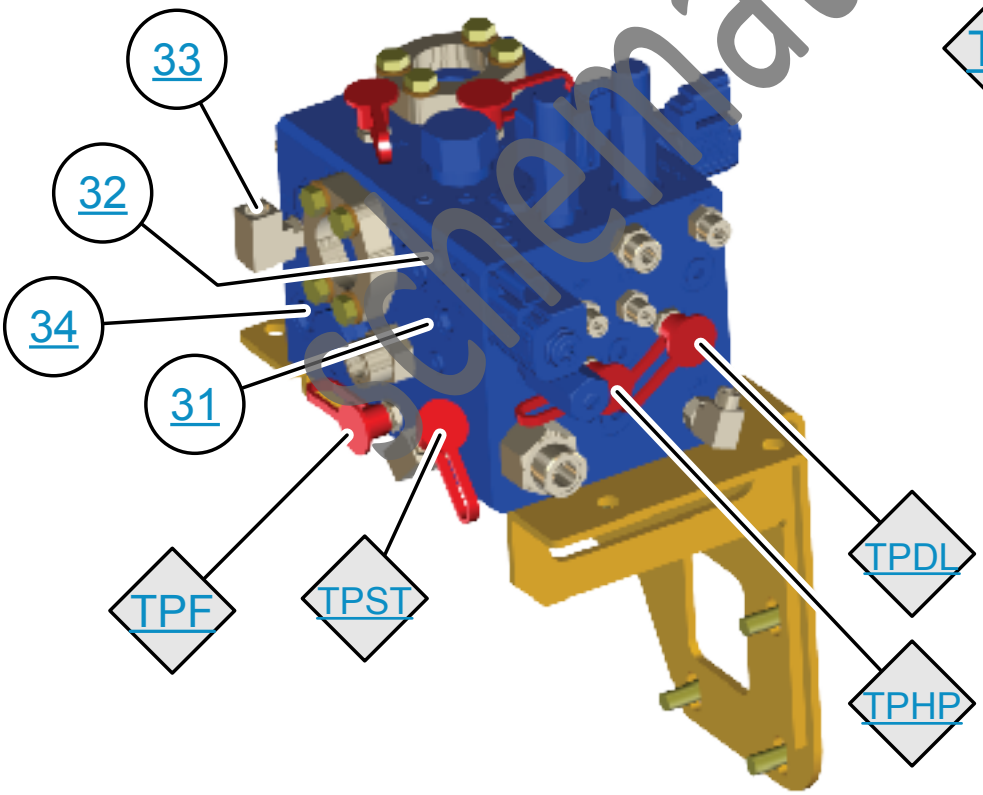
VIEW ALL CALLOUTS



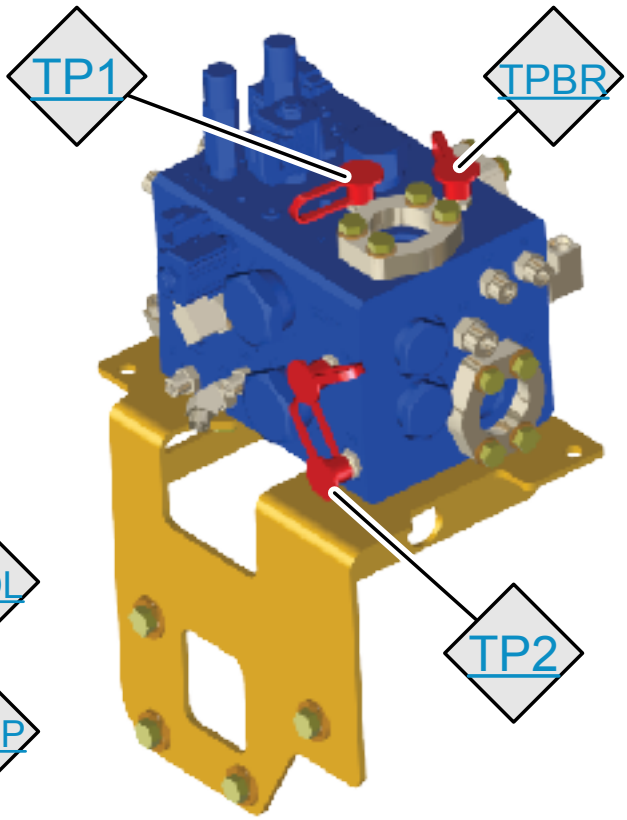
FRONT OF MACHINE

FRONT OF MACHINE





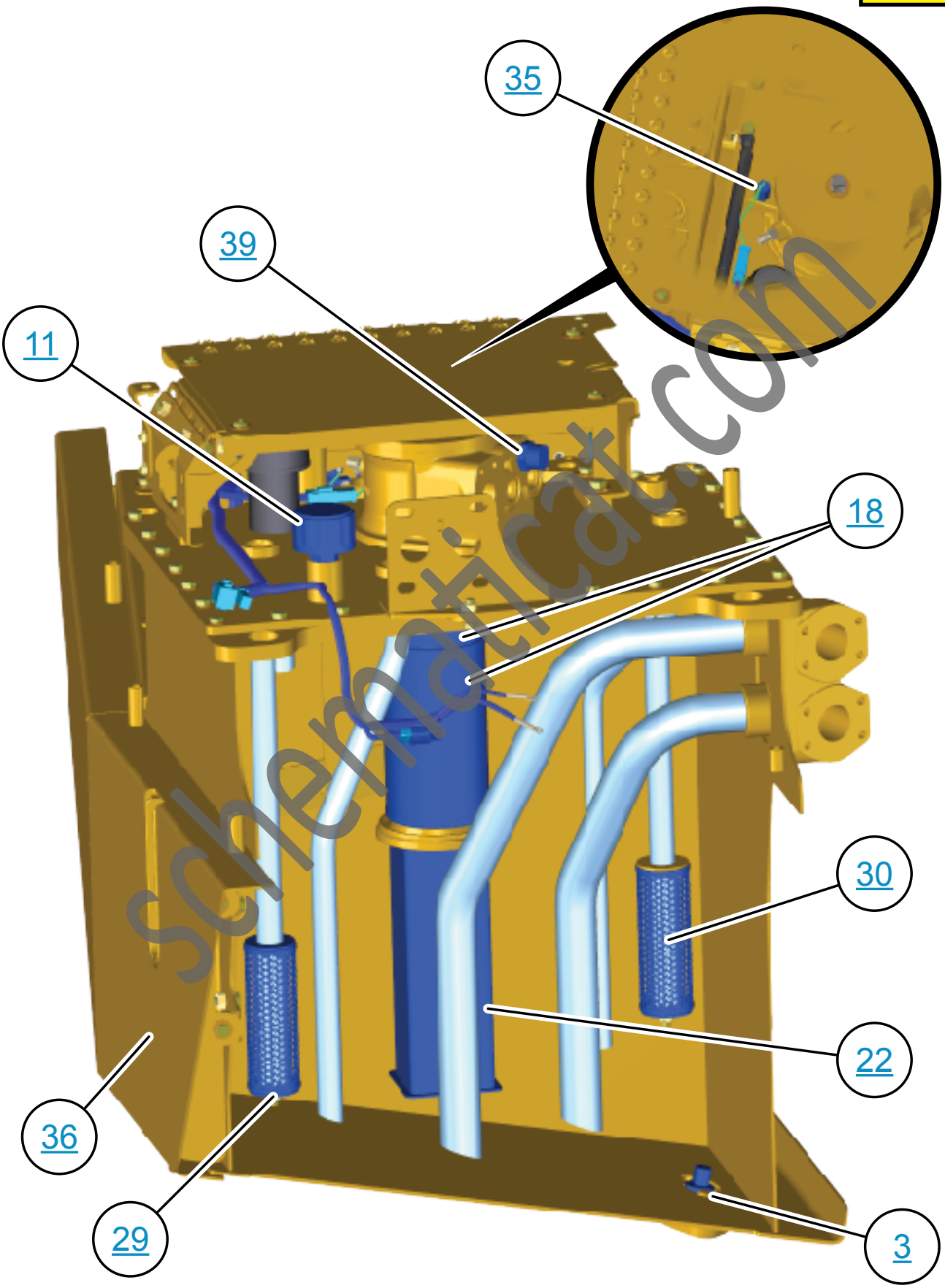
VIEW OF AREA “D”



VIEW OF AREA “E”

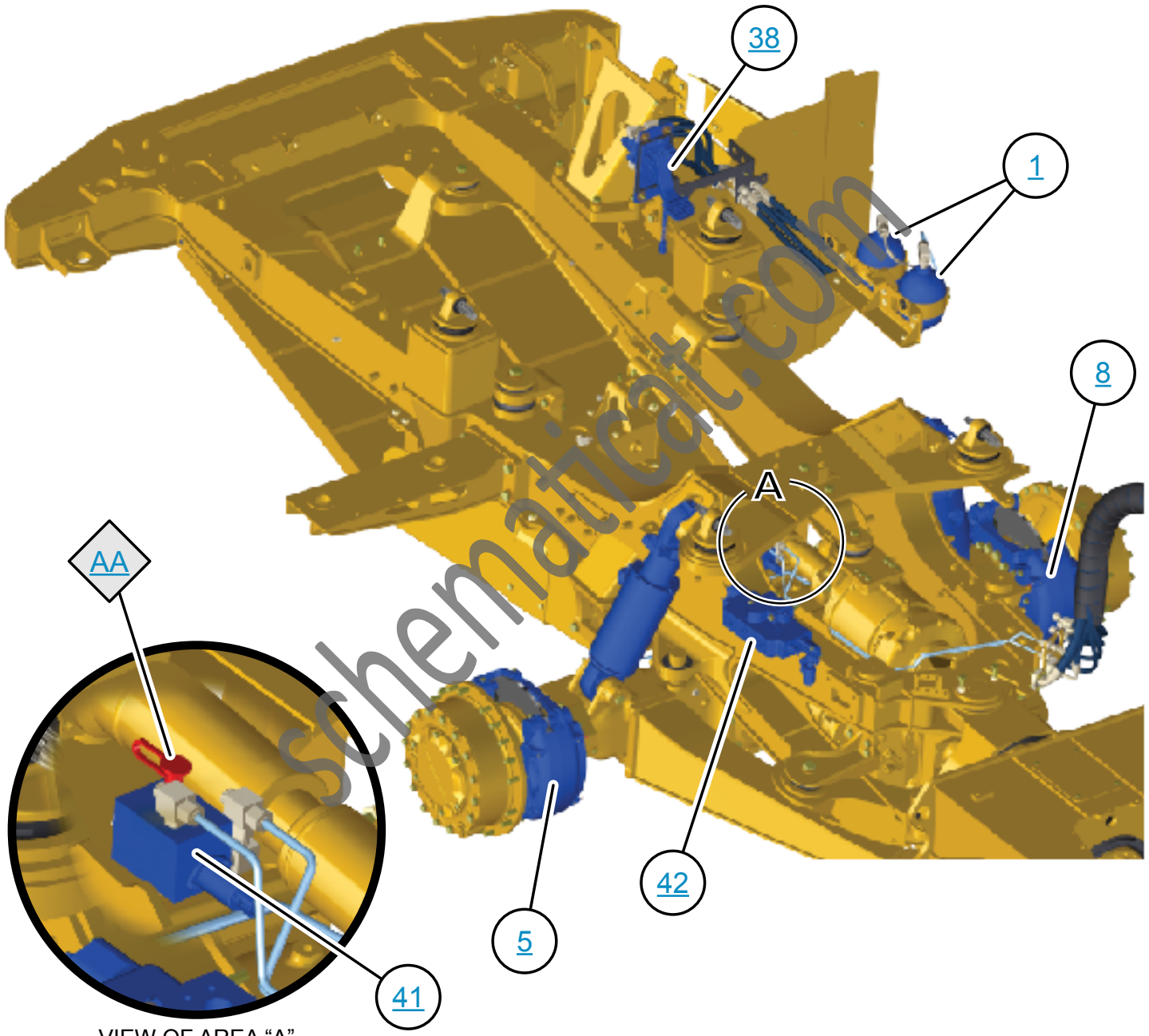
HYDRAULIC TANK

VIEW ALL CALLOUTS



FRONT FRAME COMPONENTS

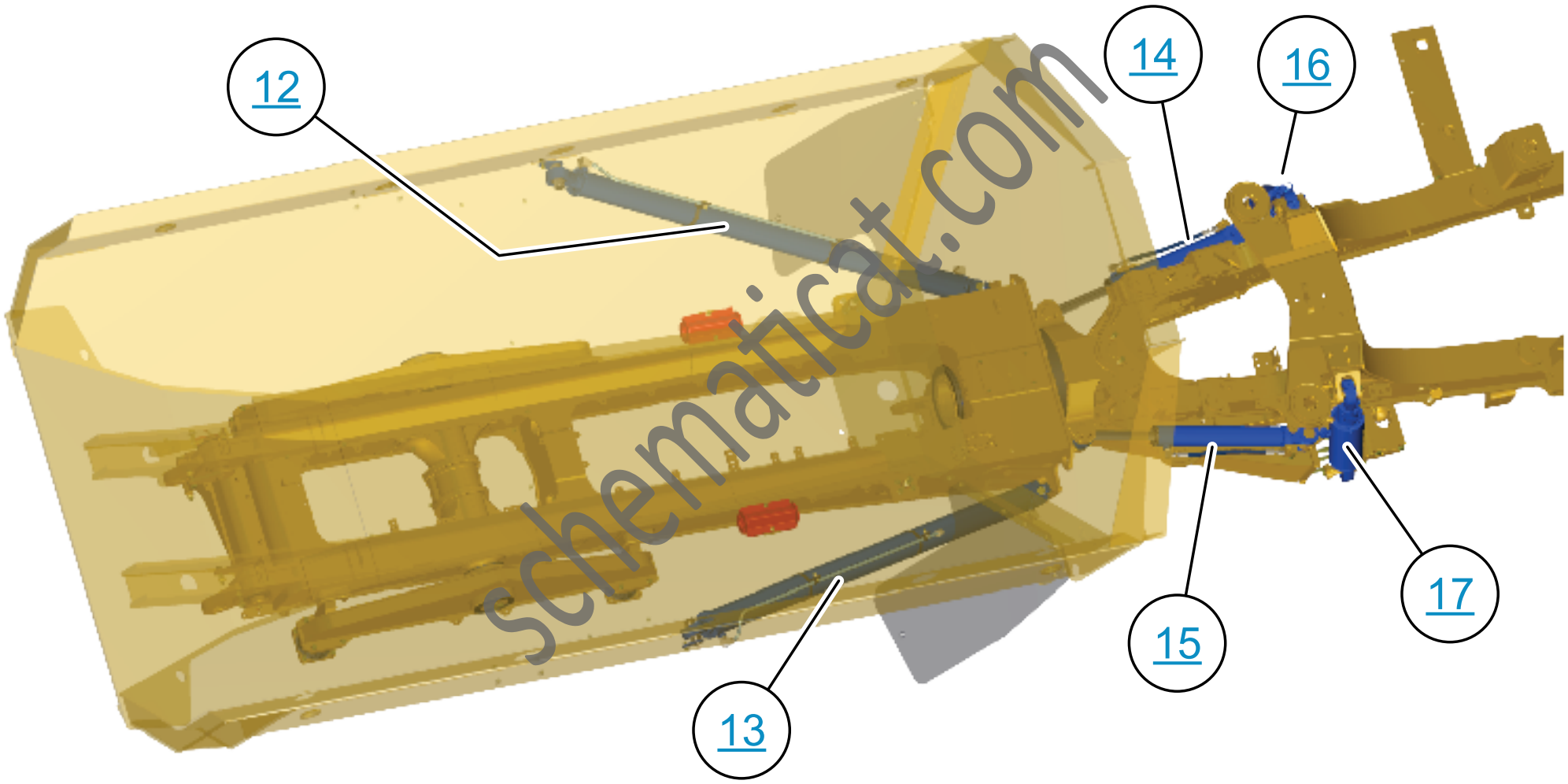
VIEW ALL CALLOUTS



VIEW OF AREA “A”
(ROTATED FOR CLARITY)

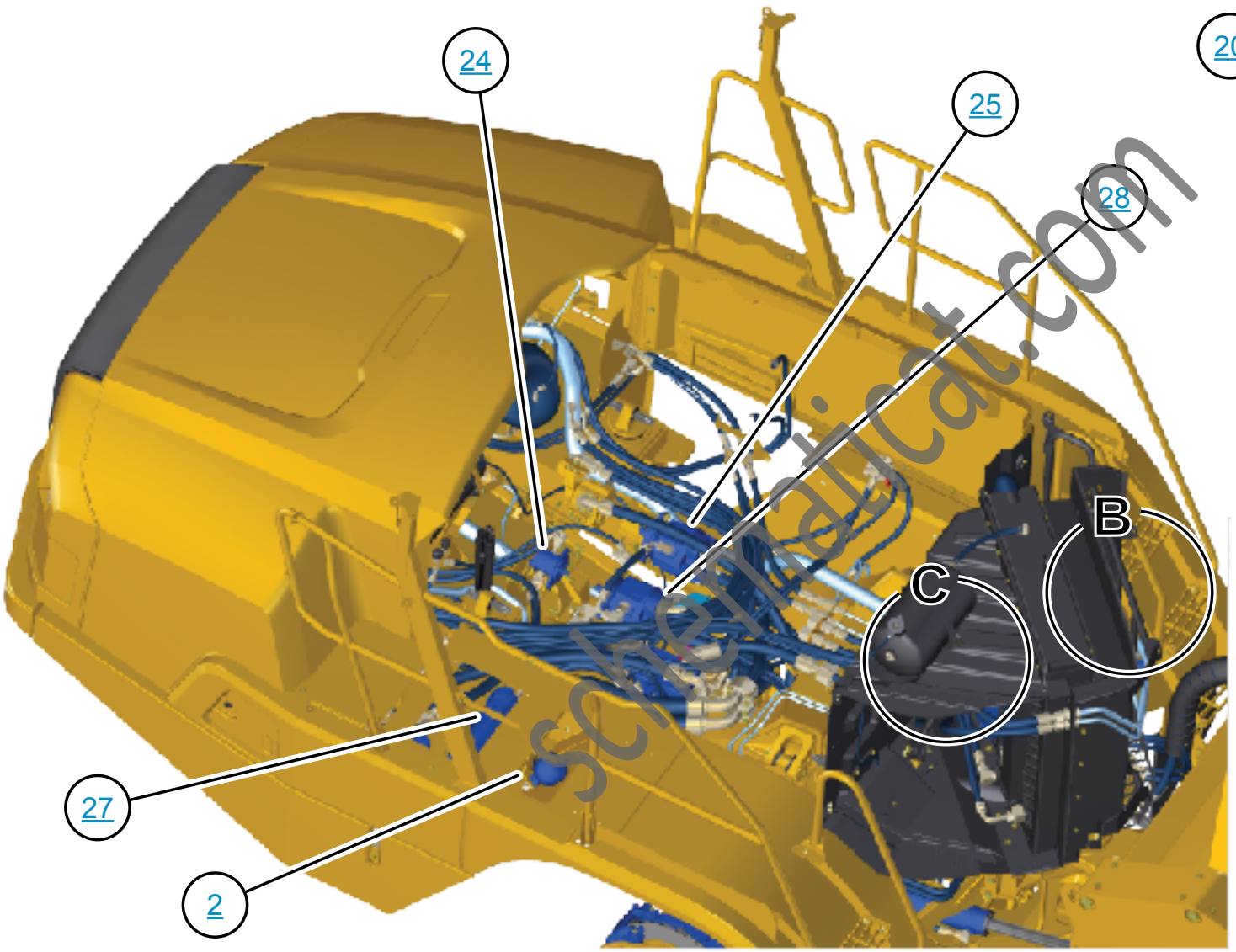
CYLINDERS

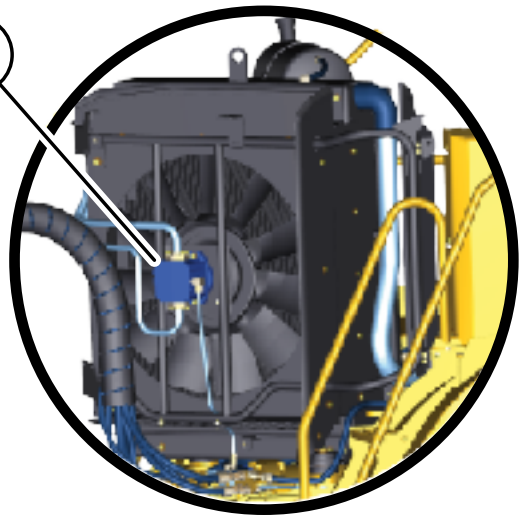
VIEW ALL CALLOUTS



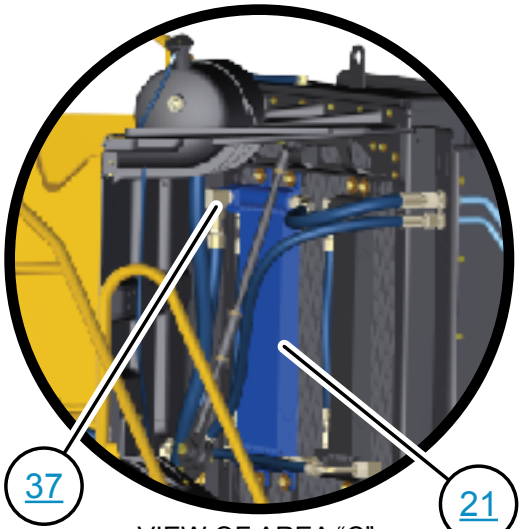
BELOW CAB COMPONENTS

VIEW ALL CALLOUTS





VIEW OF AREA “B”
(ROTATED FOR CLARITY)



VIEW OF AREA “C”
(ROTATED FOR CLARITY)

ATAAC FAN

VIEW ALL CALLOUTS