2. TECHNICAL DATA

2. Technical Data

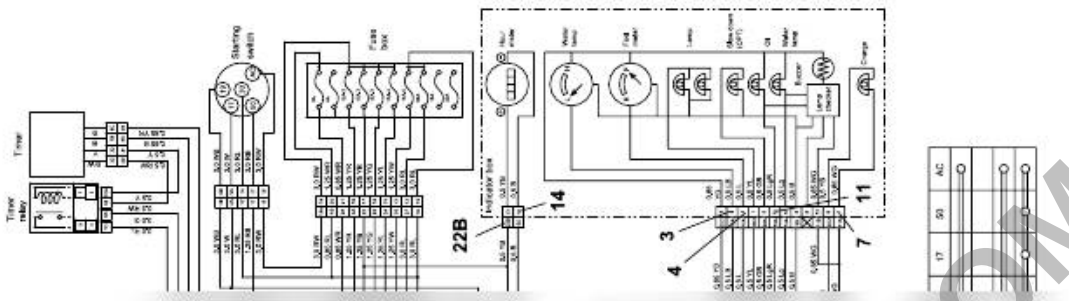
2-1 Specifications

Item	Unit	ViO30-2
Main specifications of machine		
Dimensions		

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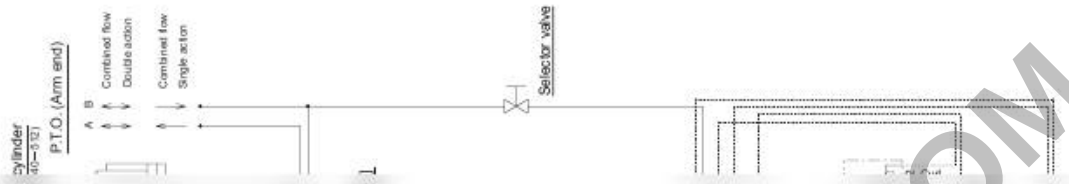
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3. Exploded View and Component Parts



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3-7-2 Engine

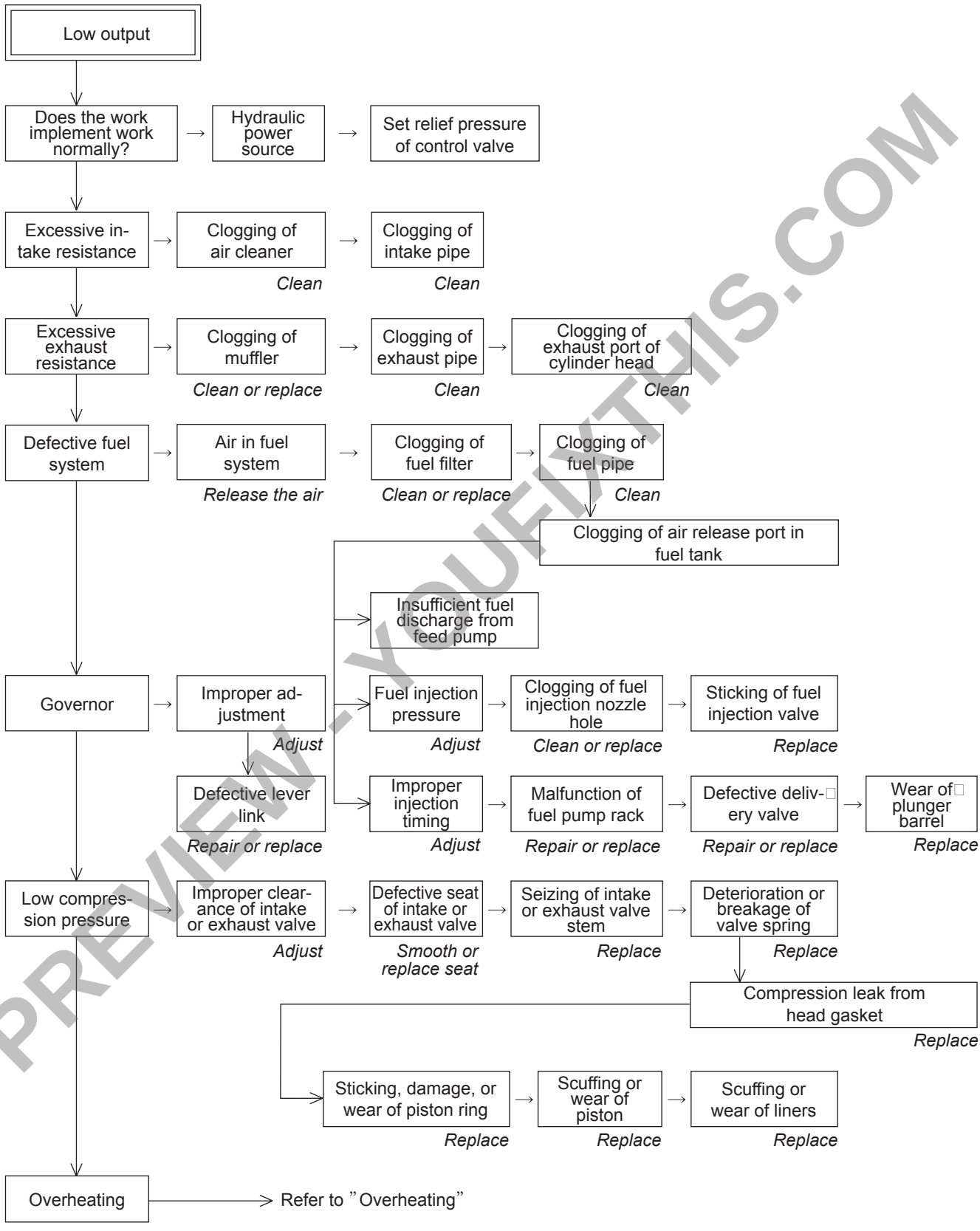
Tightening torque for major bolts and nuts

No.	Item	Thread size × Pitch	Tightening torque Unit : ft•lbf (N•m)	Lubricating oil
1	Cylinder head bolt	M9 × 1.25	49.2 to 52.1 (66.7 to 70.6)	Yes
2	Connecting rod bolt (class 1)	M8 × 1.0	27.5 to 30.4 (37.3 to 41.2)	Yes
3	Flywheel mounting bolt	M10 × 1.25	61.5 to 65.1 (83.4 to 88.3)	Yes

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8. PERIODIC INSPECTION AND SERVICING

8. Periodic Inspection and Servicing

8-1 List of Periodic Inspection and Servicing

◇ : Check ○ : Supply ● : Replace □ : Adjust (clean) ■ : Oil & grease

Check & service items		Daily	Every 50	Every 100	Every 250	Every 500	Every 1000 hrs
	Check falling off, breakage of parts	◇					

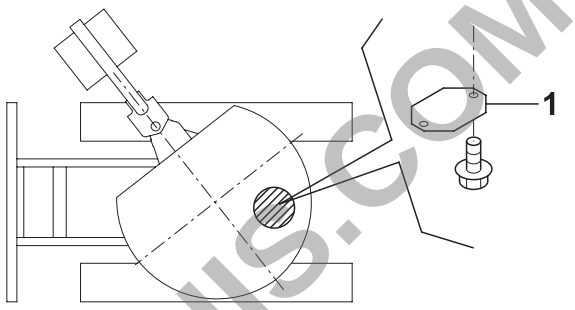
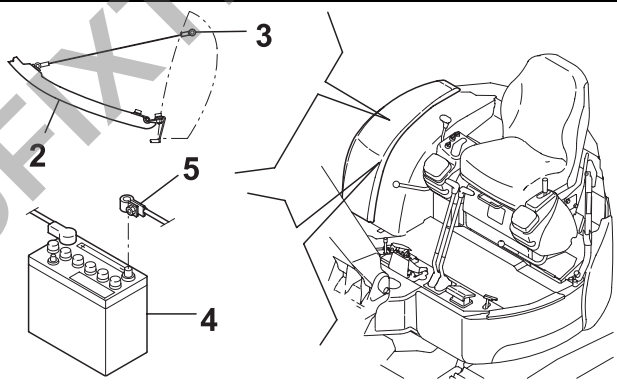
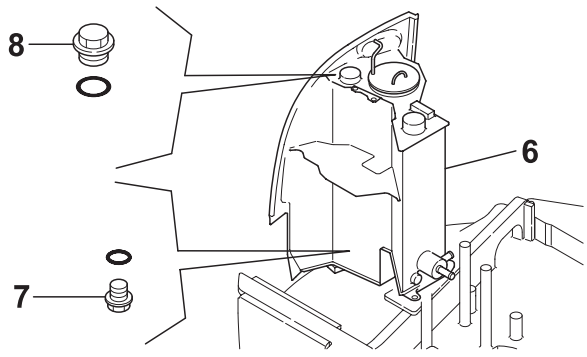
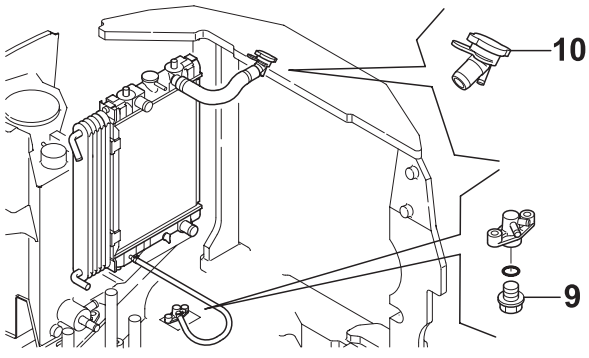
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7-1-5 Removal and Reinstallation of Engine

1) Removal

Procedure	
(1) Remove the plate G **1**. (2) Swing the upperstructure so that the drain plug **7** of the hydraulic oil tank **6** and the drain plug **9** for the cooling water are halfway between the right and left crawlers. Then, lower the bucket to the ground and stop the engine.	
(3) Open the engine hood B **2** to pull out the pin **3** from the cable, and then remove the battery cable **5** (negative) from the battery **4**.	
(4) Remove the drain plug **7** from the hydraulic oil tank **6** to drain hydraulic oil. Type : YAMMAR SUPER HYDRO OIL (VG 46 class) or its equivalent Q'ty : 9.24 Gals. (35 L) Remove the oil supply port cap, and draining the oil will be smoother.	
(5) Remove the drain plug **9** from the two-way cock for cooling water to drain cooling water. Q'ty : 3.28 Qts. (3.1 L) At this time, removing the radiator cap **10** allows the cooling water to drain more smoothly.	

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CONTENTS

CHAPTER 1
GENERAL CAUTIONS FOR MAINTENANCE WORK

1-1 Correct Work 1-1
1-2 Safety Precautions 1-1
1-3 Preparations 1-1
1-4 Cautions for Disassembly and Reassembly 1-1
1-5 Cautions for Removal and Installation of Hydraulic Equipment 1-2
1-6 Cautions for Removal and Installation of Hydraulic Piping 1-2
1-7 Cautions for Handling Seals 1-3
1-8 Correct Installation of Hydraulic Hose 1-3
1-9 Specifications of Hydraulic Hose 1-6
1-10 Air Release of Hydraulic Equipment 1-11

CHAPTER 2
TECHNICAL DATA

2-1 Specifications 2-1-1
2-2 Outline Drawing and Working Area 2-2-1
2-2-1 Canopy type 2-2-1
2-2-2 Cabin type 2-2-2
2-3 Weight List of Main Parts 2-3-1
2-4 Lifting Capacity List 2-4-1

CHAPTER 3
SERVICE STANDARDS

3-1 Machine Performance 3-1-1
3-2 Engine 3-2-1
3-3 Undercarriage 3-3-1
3-3-1 Rubber Crawler Specifications 3-3-1
3-3-2 Steel Crawler Specifications 3-3-2
3-3-3 Common Specifications of Steel & Rubber Crawlers 3-3-3
3-4 Controls 3-4-1
3-5 Hydraulic Equipment 3-5-1
3-5-1 Hydraulic Cylinders 3-5-1
3-6 Implement 3-6-1
3-6-1 Front Attachments 3-6-1
3-6-2 Blade Moving Device 3-6-3
3-6-3 Bucket Teeth 3-6-3
3-7 List of Tightening Torque 3-7-1
3-7-1 Machine 3-7-1
3-7-2 Engine 3-7-4
3-7-3 Tightening Torque for General Bolts and Nuts 3-7-4

CHAPTER 4
ENGINE

4-1 Measurement, Inspection and Adjustment 4-1-1
4-1-1 Measuring the Compression Pressure 4-1-1
4-1-2 Adjusting the Valve Clearance 4-1-2

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4-1-3 Checking the V-belt Tension 4-1-3
4-1-4 Checking the Fuel Injection Valve 4-1-3
4-1-5 Checking and adjusting the Fuel Injection Timing 4-1-5
4-1-6 Adjusting the Maximum (or Minimum) Idling Speed 4-1-7
4-1-7 Checking the Cooling Water System and Radiator for Water Leakage 4-1-7
4-1-8 Checking the Sensors 4-1-8
4-2 Measurement Procedure, Service Data and Corrective Action 4-2-1
4-2-1 Cylinder Head 4-2-1
4-2-2 Cylinder Block 4-2-6
4-2-3 Valve Rocker Arm 4-2-8
4-2-4 Piston and Piston Rings 4-2-10
4-2-5 Connecting Rod 4-2-13
4-2-6 Cam shaft 4-2-16
4-2-7 Crank shaft 4-2-17
4-2-8 Gears 4-2-20
4-2-9 Trochoid Pump 4-2-21
4-3 Precautions for Reassembly 4-3-1
4-4 Fuel Injection System 4-4-1
4-4-1 Fuel Injection Pump 4-4-1
4-4-2 Fuel Injection Valve 4-4-2
4-4-3 Governor Mechanism 4-4-3
4-4-4 Specifications of Fuel Injection Pump 4-4-5
4-5 Electrical Equipment 4-5-1
4-5-1 Starter Motor 4-5-1
4-5-2 Alternator 4-5-3
4-5-3 Air Heater 4-5-4

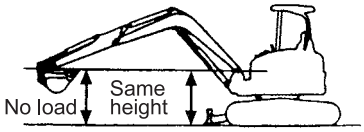
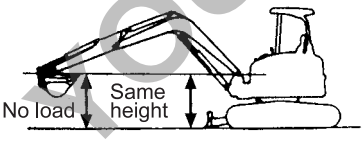
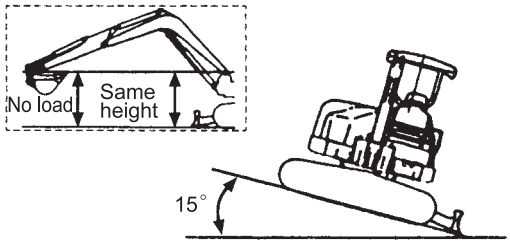
CHAPTER 5
HYDRAULIC SYSTEM

5-1 Outline 5-1-1
5-1-1 Control Valve Operation 5-1-4
5-1-2 Additional Operation of Control Valve 5-1-6
5-2 Hydraulic Circuit Schematic 5-2-1
5-3 Circuit Operation 5-3-1
5-3-1 Boom 5-3-1
5-3-2 Arm 5-3-3
5-3-3 Bucket 5-3-5
5-3-4 Swing 5-3-7
5-3-5 Boom Swing 5-3-9
5-3-6 Blade 5-3-11
5-3-7 Travel 5-3-13
5-3-8 Non-Deviation Travel (with Boom, Arm, Bucket or Boom Swing Operation) 5-3-15
5-3-9 Simultaneous Operation of Boom Up and Arm Retract 5-3-17
5-3-10 Simultaneous Operation of Boom Up and Bucket 5-3-19
5-3-11 Simultaneous Operation of Arm and Bucket 5-3-21
5-3-12 Simultaneous Operation of Boom Up and Swing 5-3-23

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Note : *( ) : Cabin type*

Applicable model			ViO35-2	
Item	Measuring condition	Unit	Standard	Allowance
Machine performance				
Swing drift at stopping	Machine position  • Engine : rated speed • Hydraulic oil temp. : 122 to 140 °F (50 to 60 °C) • Site : Firm, flat ground • Make the boom and bucket pins the same height. • Make match marks on the outer race and the inner race of the swing bearing (or the track frame). • Measure shifted distance between both marks after making one turn with no load.	in. (mm) or degrees	6.65 (169) or less, 30 or less	10.0 (254) 45
Swing time	Machine position  • Engine : rated speed • Hydraulic oil temp. : 122 to 140 °F (50 to 60 °C) • Site : Firm, flat ground • Make one idling turn with no load, then measure the time necessary to make 5 turns.	sec. / 5 turns	29	34
Swing drift	Machine position  • Engine : stopped • Hydraulic oil temp. : 122 to 140 °F (50 to 60 °C) • Make the boom and bucket pins the same height. • Park the machine on a slope with an inclination of 15 degrees and turn the upperstructure 90 degrees to the crawler. • Make match marks on the outer race and the inner race of the swing bearing (or the track frame). • Measure shifted distance or angle between both marks after 5 min.	in. (mm)	(at engine stop)	0
			(at engine operating)	≦2.17 (55) (≦10 degrees)

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5) Where to Use Liquid Packing

(1) Between the cylinder block and the gear case flange

(2) Between the gear case flange and the gear case cover

(3) Oil pan mounting surface

Notes :

1. Use Three Bond No. 005 (Yanmar part code : 97777-001212) as the liquid packing.

2. Apply the liquid packing so that there should no break halfway. Otherwise, oil leakage or other trouble may be

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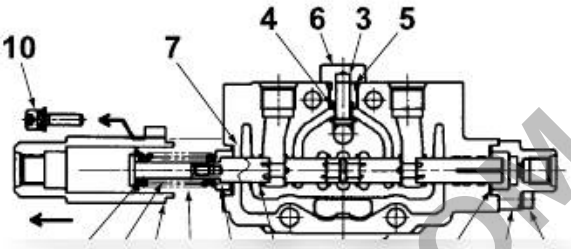
3) Disassembly

3)-1. Removal of spools

(1) Pilot operated type (swing, parallel-flow divider, and arm sections)

Remove each spool as in example of the removal procedure of the swing spool given below.

[1] Remove the two hexagon socket head bolt and SWP

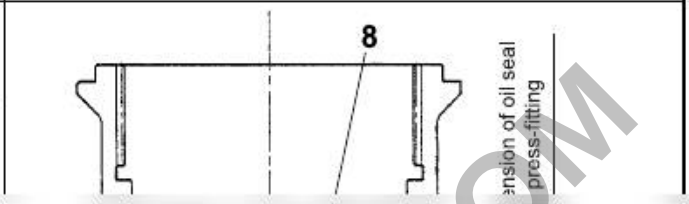


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[2] Reduction gear

Procedure	
(21) Press-fit the oil seal **8** into the housing **5**. ***Note :*** *Apply grease to the installation part and the outer surface of the oil seal **8** before press-fitting.* - Dimension of oil seal after press-fitting	

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3) Anti-Cavitation Valve

Trouble	Cause	Measure
1. Motor does not turn or motor speed is low.	1) Seat of check valve is defective. (1) Foreign substances caught inside.	Remove all the foreign substances, repair any damaged area, clean the parts and reassemble them. If the damages is serious and oil leak is bad, replace the part.
	(2) Broken spring.	Replace the spring. Remove all the foreign substances, repair any damaged area, clean the parts and reassemble them.
2. Large cavitation sound on traveling.	1) Sticking of check valve (1) Foreign substances caught between check valve and valve body.	Remove all the foreign substances, repair any damaged area, clean the parts and reassemble them. If the damage is serious and oil leak is bad, replace the part.

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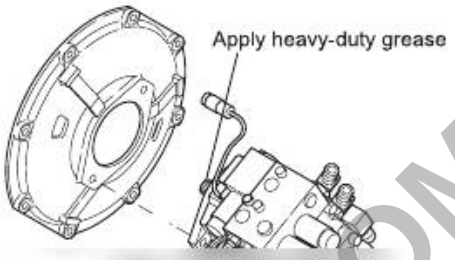
2) Reinstallation

Reassemble the hydraulic pump in the reverse order of the removal procedure.

Note :

Apply heavy-duty grease to the spline shaft of the hydraulic pump.

Hydraulic pump installation bolt M12

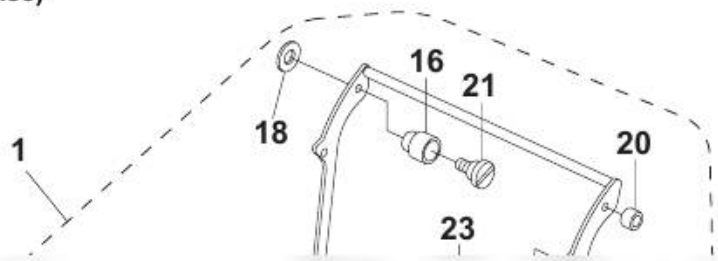


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5) TIM cabin (front glass)



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