

AMAX

OPERATION AND MAINTENANCE

MANUAL

Torque Wrench Power Pump

MODEL: AMAX



1025 Conroy Place, Easton PA 18040 * U.S.A.
Phone: +1 610-250-5800 * Fax: +1 610-250-2700
Toll Free: 1-888-TORCUP-1

Email: sales@torcup.com * Website: www.torcup.com



NOTICE

IMPORTANT SAFETY INFORMATION ENCLOSED.
READ THIS MANUAL BEFORE OPERATING PUMP.
IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION IN THIS
MANUAL INTO THE HANDS OF THE OPERATOR.
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

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TorcUP Inc. is not responsible for customer modification of tools for applications on which TorcUP Inc. was not consulted.

TorcUP has taken every care in preparing this Operational Manual that is intended as a technical guideline only. TorcUP accepts no liability in relation to any use or reliance made of any information in this Operational Manual. All information, illustrations and specifications in this Operational Manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice. Equipment operators and installers shall be responsible for ensuring that a safe working environment and safe systems of work are in place before operating the equipment.

The use of other than genuine TorcUP replacement parts may result in safety hazards, decreased tool performance, and increased maintenance, and may invalidate all warranties. Repairs should be made only by authorized personnel. Consult your nearest TorcUP Authorized Service Center. Refer All Communications to the Nearest TorcUP Office or Distributor.

For Technical Support & Information Contact:

TorcUP Inc.

1025 Conroy Place, Easton, PA 18040 USA

Phone: +1 610-250-5800 Fax: +1 610-250-2700

email: sales@torcup.com

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY

Do NOT exceed Maximum Pressure. See Torque Chart with Tool. Damage May Occur.

Do not use damaged, frayed or deteriorated hydraulic hoses and fittings.



Always wear eye protection when operating or performing maintenance on this tool.



Always wear ear protection when operating this tool.



WARNING

Do not carry the tool by the hose.



Keep body stance balanced and firm. Do not overreach when operating this tool.



The Torque Reaction Arm must be positioned against a positive stop. Do not use the arm as a dead handle. Take all precautions to make certain the operator's hand cannot be pinched between the arm and a solid object.



USING THE TOOL

- Keep hands, loose clothing & long hair away from the reaction arm and working area during operation.
- This tool will exert a strong reaction force. Use proper mechanical support and correct reaction arm positioning to control these forces. Do not position the reaction arm so that it tilts the tool off the axis of the bolt and never use the swivel inlets as a reaction stop.
- Avoid sharp bends and kinks that will cause severe back-up pressure in hoses and lead to premature hose failure.
- Use accessories recommended by TorcUP.
- Use only impact sockets and accessories. Do not use hand (chrome) sockets or accessories.
- Use only sockets and accessories that correctly fit the bolt or nut and function without tilting the tool off the axis of the bolt.
- This tool is not insulated against electric shock.
- This equipment must not be operated or serviced unless the operator read the operating instructions and fully understands the purpose, consequences and procedure of each step.

Depending on the working environment your local health and safety regulations may require you use protective gear (i.e. Ear Protection, Safety Shoes, Hard Hat, Gloves, Coveralls, etc.). In case external forces are exerted on the equipment, non-compliance with these regulations may result in injury. **EAR PROTECTION MUST BE WORN WHEN OPERATING THIS TOOL.**

SAFE AND CORRECT USE

Operation of the Equipment in Accordance with Specified Use

1. Inspect, maintain, operate and install the tool in accordance with all applicable standards and regulations (local, state, country, federal, etc.).
2. Do not remove any labels. Replace any damaged labels immediately.
3. Be sure all hoses and fittings are the correct size and tightly secured.
4. Do not use damaged, frayed or deteriorated hydraulic hoses and fittings. Do not paint hoses.
5. Do not lubricate tools with flammable or volatile liquids such as kerosene, diesel or jet fuel. Use only TorcUP recommended lubricants.
6. Use only proper cleaning solvents to clean parts. Use only cleaning solvents which meet current safety and health standards. Use cleaning solvents in a well ventilated area.
7. Keep work area clean, uncluttered, ventilated and illuminated.

Safety Information When Using The Tool

1. When wearing gloves, always be sure that the gloves will not prevent the throttle mechanism from being released.
2. Always wear eye protection when operating or performing maintenance on this tool.
3. Always wear hearing protection when operating this tool.
4. Always use personal protective equipment appropriate to the tool used and material worked. This may include dust mask or other breathing apparatus, safety glasses, ear plugs, gloves, apron, safety shoes, hard hat and other equipment.
5. Keep others a safe distance from your work area, or ensure they use appropriate personal protective equipment.
6. Be aware of buried, hidden or other hazards in your work environment. Do not contact or damage cords, conduits, pipes, or hoses that may contain electrical wires, explosive gases or harmful liquids.
7. Keep hands, loose clothing, long hair and jewelry away from working end of tool.
8. Power tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands and arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming.
9. Keep body stand balanced and firm. Do not overreach when operating this tool. Anticipate and be alert for sudden changes in motion, reaction torques, or forces during start up and operation.
- 10. DO NOT USE THIS TOOL WHEN TIRED, UNDER THE INFLUENCE OF MEDICATION, DRUGS OR ALCOHOL.**
11. Never use a damaged or malfunctioning tool or accessory.
12. Do not modify the tools, safety devices or accessories.
13. Do not use this tool for purposes other than those recommended.
14. Never exceed rated pressure of tool.

SAFE AND CORRECT USE

IMPORTANT - READ CAREFULLY

This manual contains important information for the correct installation, operation and maintenance of this equipment. All persons involved in the installation, operation and maintenance of this equipment must be thoroughly familiar with the contents of this manual. To safeguard against the possibility of personal injury or property damage, follow the recommendations and instructions of this manual. Keep this manual for reference.

WARRANTY STATEMENT

TorcUP products are warranted to be free of defects in materials and workmanship under normal use for as long as the original purchaser owns them, subject to the guidelines and limitations listed. This warranty does not cover: normal wear & tear, cosmetic items, abuse, overloading, alterations, improper fluid, or use in a manner for which they are not intended. If the customer believes a product is defective, the product must be delivered, or shipped freight prepaid, to the nearest TorcUP Authorized Service Center for evaluation and repair. This pump offers 13 month warranty.

RECEIVING INSTRUCTIONS

Important! Make sure to inspect all of the components for shipping damage. If damage is found, notify carrier at once. Shipping damage will not be covered by warranty. The carrier is responsible for all loss associated with shipping damage.

SAFETY

Make sure to read the instructions, warnings and precautions carefully. Follow any recommended safety precautions to avoid personal injury or damage to the unit. TorcUP cannot be responsible for any damage or injury from unsafe use, lack of maintenance or incorrect operation. In the event any questions or concerns arise, contact TorcUP or a local representative for clarification.

The pump's maximum working pressure is 10,000 PSI(700kg/cm²). Make sure that all hydraulic equipment such as rams, hoses, etc. used with this pump are rated at 10,000 PSI (700kg/cm²) operating pressure.

If you have never been trained on high-pressure hydraulic safety, consult your representative for a free TorcUP Hydraulic Safety Course.

Failure to comply with the following cautions and warnings could cause equipment damage, property damage or personal injury.

DANGER is only used when your action or lack of action may cause serious injury or even death.

WARNING indicates a potential danger that requires correct procedures or practices to avoid personal injury.

CAUTION is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment, or other property.

SAFE AND CORRECT USE

WARNING: Wear proper personal protective gear when operating hydraulic equipment.

DANGER: To avoid personal injury, keep hands and feet away from work-piece during operation.

WARNING: Do not exceed equipment ratings. Overloading causes equipment failure and possible personal injury. The pump tools are designed for a maximum pressure of 10,000 PSI (700kg/cm²). Do not connect a jack or cylinder to a pump. Never set the relief valve to a higher pressure than the maximum rated pressure of the pump. Higher settings may result in equipment damage and/or personal injury.

WARNING: The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Install pressure gauges in the system to monitor operating pressure.

CAUTION: Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe back-pressure. Sharp bends and kinks will internally damage the hose, leading to premature hose failure. Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damaged hose may cause it to rupture.

IMPORTANT: Do not lift hydraulic equipment by the hose or swivel couplers. Use the carrying handle or other means of safe transport.

CAUTION: Keep hydraulic equipment away from flames and heat. Excessive heat will soften seals, resulting in fluid leaks. Heat also weakens hose materials. For optimum performance do not expose equipment to temperatures of 65° C (170° F) or higher. Protect hoses and cylinders from weld spatter.

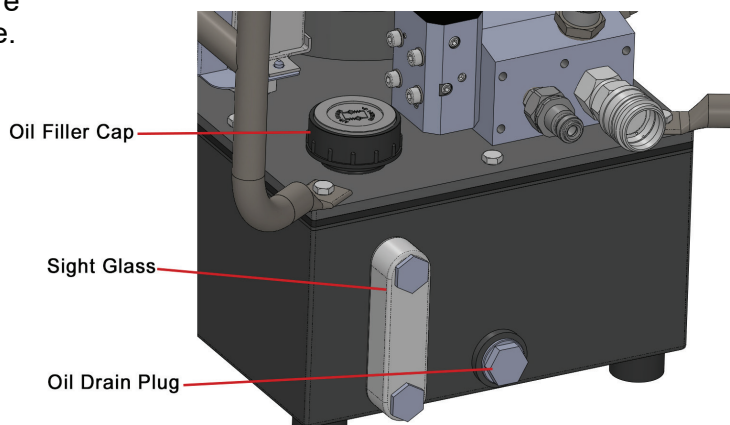
TECHNICAL SPECIFICATIONS

WORKING PRESSURE

The pump's maximum working pressure is 10,000 PSI (700kg/cm²). Make sure that all hydraulic equipment such as tools, hoses, etc. used with this pump are rated at 10,000 PSI (700kg/cm²) operating pressure.

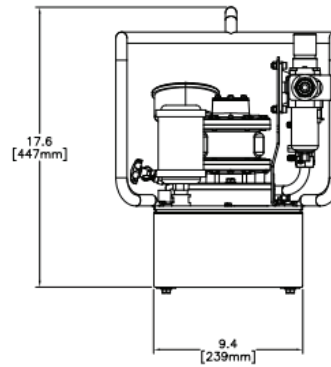
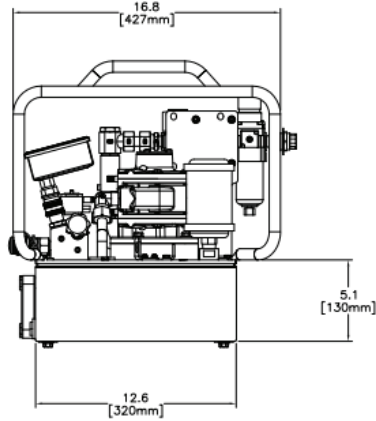
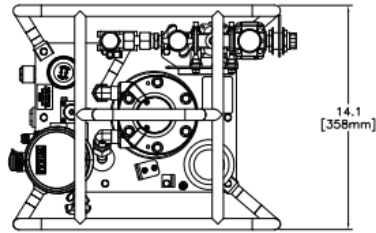
ADDING OIL

Remove oil filler cap and add TorcUP hydraulic oil into reservoir. Oil level should not exceed 1" from the reservoir plate cover. Oil should be ISO 32 or 46 weight.



*As a "rule of thumb" oil should be filled about an inch below the top of the reservoir when the unit is powered down and all connected tools or cylinders are retracted.

TECHNICAL SPECIFICATIONS



DIMENSIONS	INCH	MM
LENGTH	16.8	427
WIDTH	14.1	358
HEIGHT	17.6	447

RESERVOIR SIZE	INCH	MM
LENGTH	12.6	320
WIDTH	9.4	239
HEIGHT	5.1	130

OIL CAPACITY	GALLON	LITER
	2.2	8.4

WEIGHT APPROX. W/O OIL	LBS	KG
	60	27

AIR / MOTOR SPECS (3-STAGE)	SERVICE SUPPLY Compressed Air, Purity Class ISO 8573-1 [7:4:-] 55 to 150 psi 4 to 10 bar AIR CONSUMPTION Up to 3800 cu.in/sec Up to 60 liters/sec
--	---

MAX OIL FLOW		
STAGE 1 (1000psi / 70bar)	610 cu.in/min	10.0 l/min.
STAGE 2 (4200psi / 300bar)	145 cu.in/min	2.4 l/min.
STAGE 3 (10,000psi / 700bar)	70 cu.in/min	1.1 l/min.

TECHNICAL SPECIFICATIONS

WARNING

Loose or improperly threaded fittings can be potentially dangerous if pressurized; however, severe over tightening can cause premature thread failure. Fittings need to be tightened secure and leak free. Never hold or stand directly in line with any hydraulic connections while pressurizing. Never grab, touch or in any way come in contact with a hydraulic pressure leak. Escaping oil can penetrate the skin and a serious injury can result.

CAUTION: Do not subject the hose to potential hazards such as sharp surfaces, extreme heat or heavy impact. Do not allow the hose to kink or twist. Inspect each hose for wear before it is used.

CONNECTING HYDRAULIC TOOLS

Use only tools, hoses and accessories rated at 10,000 PSI (700kg/cm²). When making connections with quick disconnect couplings, make sure the couplings are fully engaged. Threaded connections such as fittings, gauges, etc. must be securely tightened and leak free. Use 1.5 wraps of Teflon tape (or suitable thread sealant) on all threads, leaving the first complete thread free of tape to ensure no foreign matter enters the hydraulic circuit.

STARTING THE PUMP

1. Pneumatic connection:

The hydraulic pump is powered by a pneumatic motor. Connect the compressed air with the filter-lubricator (see pg. 14) of the pump by using couplings. Control the oil level of the lubricator. If the oil level is too low top up with qualified oil. See spare part list for further information.

Attention: *The pneumatic motor must be lubricated all the time (1 drop per minute)! You can adjust it by the screw at the lubricator while the motor is turning.*

2. Hydraulic connection:

Check the oil level before starting to work at the sight glass of the oil tank. If necessary top up with hydraulic oil. Be careful on connecting the hydraulic couplings to avoid oil pollution.

3. Air evacuation:

Sometimes an evacuation of the system is necessary. For this purpose connect a hose to the pump and out both ends together. After this, advance and retract the pump several times.

4. Operation:

As soon as the pneumatic connection is provided for and the hoses are connected, the pump can be operated.

5. Function:

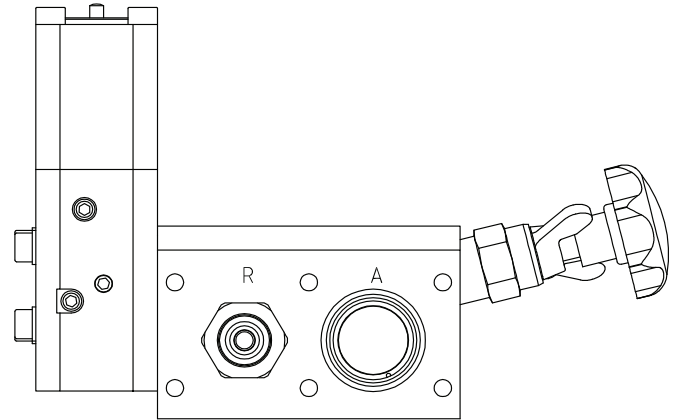
By switching the toggle switch pos.1 of the remote control (see pg. 9) the pneumatic motor starts and the mounted tool retracts. By pressing the button pos.2 the tool advances, let the button go and it retracts again. You can adjust the necessary pressure at the relief valve (see pg. 10). To relieve hydraulic pressure, switch toggle pos.1 and press button pos.2.

TECHNICAL SPECIFICATIONS

CONTROL VALVES

2-Position – 4 Way Solenoid Valve for Hydraulic Torque Wrenches.

To Advance - depress the advance switch.
To Retract - release advance switch to Retract Tool.



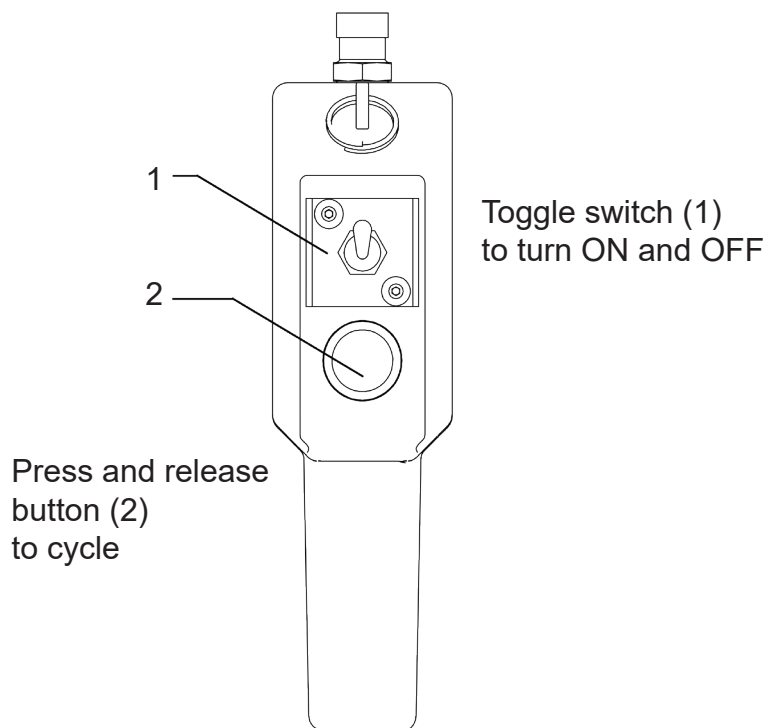
INSTALL HYDRAULIC CONNECTIONS

Use only tools, hoses and accessories rated at 10,000 PSI (700kg/cm²). Use 1.5 wraps of Teflon tape (or suitable thread sealant) on all threads, leaving the first complete thread free of tape to ensure no foreign matter enters the hydraulic circuit.

When making connections with quick disconnect couplings, make sure the couplings are fully engaged. Threaded connections such as fittings, gauges, etc. must be securely tightened and leak free.

POWER CONTROL SWITCHES

Remote pendant.
Configured with motor control pendant:



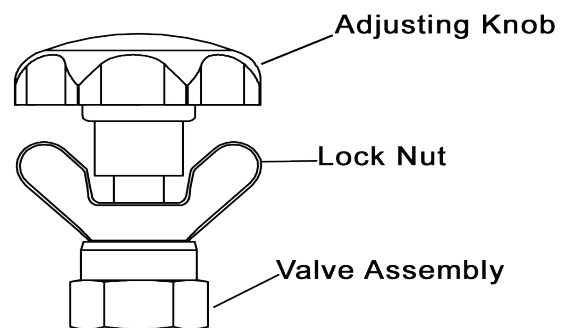
OPERATION PROCEDURES

PRESSURE TORQUE SETTING

WARNING

Make these adjustments BEFORE putting torque wrench on nut or bolt head. The pump pressure setting may be above the pressure needed to provide the required torque for your application. Exceeding required torque will cause equipment damage and may lead to serious personal injury.

1. See torque wrench instructions for amount of pressure required to produce desired torque.
2. Loosen lock nut and back out relief valve to prevent unintended pressure build up.
3. Turn pump on. Press and hold the “ADV” switch, and read pressure gauge.
4. While holding the switch, turn relief valve in (clockwise) to increase pressure or out (counter-clockwise) to decrease maximum pressure. Repeat until correct pressure is obtained.
5. Tighten lock nut on the relief valve to maintain setting.
6. Run pump several times to test this setting before setting tool on the nut.



AFTER COMPLETING THE JOB

Before disconnecting hoses, fittings, etc., first be sure the tool is unloaded and retracted, then unplug the power cord.

PERIODIC MAINTENANCE

Completely change the hydraulic oil and clean the intake screen and magnet (located in the reservoir) twice a year. If equipped, change the external oil filter twice a year (Use TorcUP oil only, Model # AO1, 2 gallons). Change the oil more frequently when used in extremely dusty areas or when the oil has been overheated. Using oil other than TorcUP recommended may void the pump's warranty.

The following conditions require more frequent oil changes.

- Rigorous duty, where oil temperature may reach 150° F.
- High humidity environment and extreme changes in temperature that can result in condensation inside the reservoir.
- Dirty or dusty environments that may contaminate the oil.
- Frequent connection and disconnection of hydraulic hoses and components.

OPERATION PROCEDURES

MAINTAIN OIL LEVEL

Check hydraulic oil level every 30 hours of operation (sight gauge should be completely covered in oil when all tools are retracted. Add TorcUP oil (Model # AO1 – 1 gallon) when necessary. Oil level should be no more than 1" from top of reservoir plate cover – with cylinders retracted and motor off.

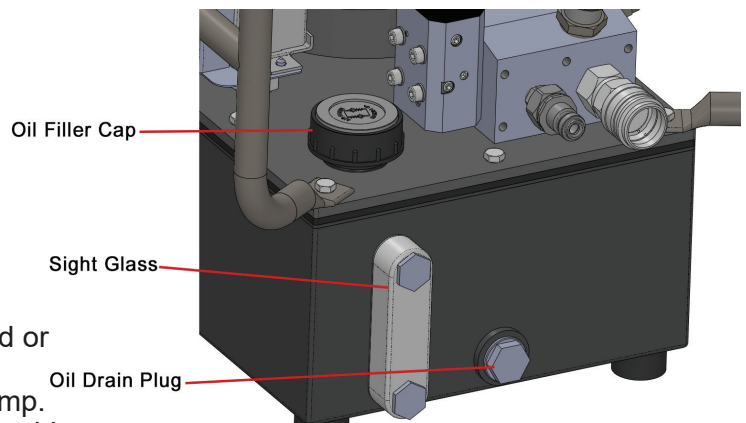
CLEAN OIL INTAKE SCREEN ONCE A YEAR

Loosen and remove reservoir plate bolts. Lift pump unit off the reservoir, being careful not to damage the gasket.

Remove suction filter by rotating counter clockwise. Clean with nonflammable solvent, blow dry clean. Reinstall in reverse order and torque bolts to 75 inch pounds. Keep the motor and pump as clean as possible.

FLUSH THE PUMP

If you suspect your pump has been contaminated or discover sludge or other deposits on internal components, you should thoroughly flush the pump. Remove the old oil from the reservoir, then thoroughly clean the reservoir and refill with a clean, nonflammable flushing oil. Reassemble the pump and motor to the reservoir.



Run the pump in no load condition for 1 or 2 minutes maximum. Unplug the pump and remove the motor and pump assembly again. Now drain the flushing oil and re-clean the inside of the reservoir. (Make sure flushing fluid is also drained from pump assembly). Reassemble the pump and refill the reservoir with TorcUP hydraulic oil and reassemble the pump.

TROUBLESHOOTING

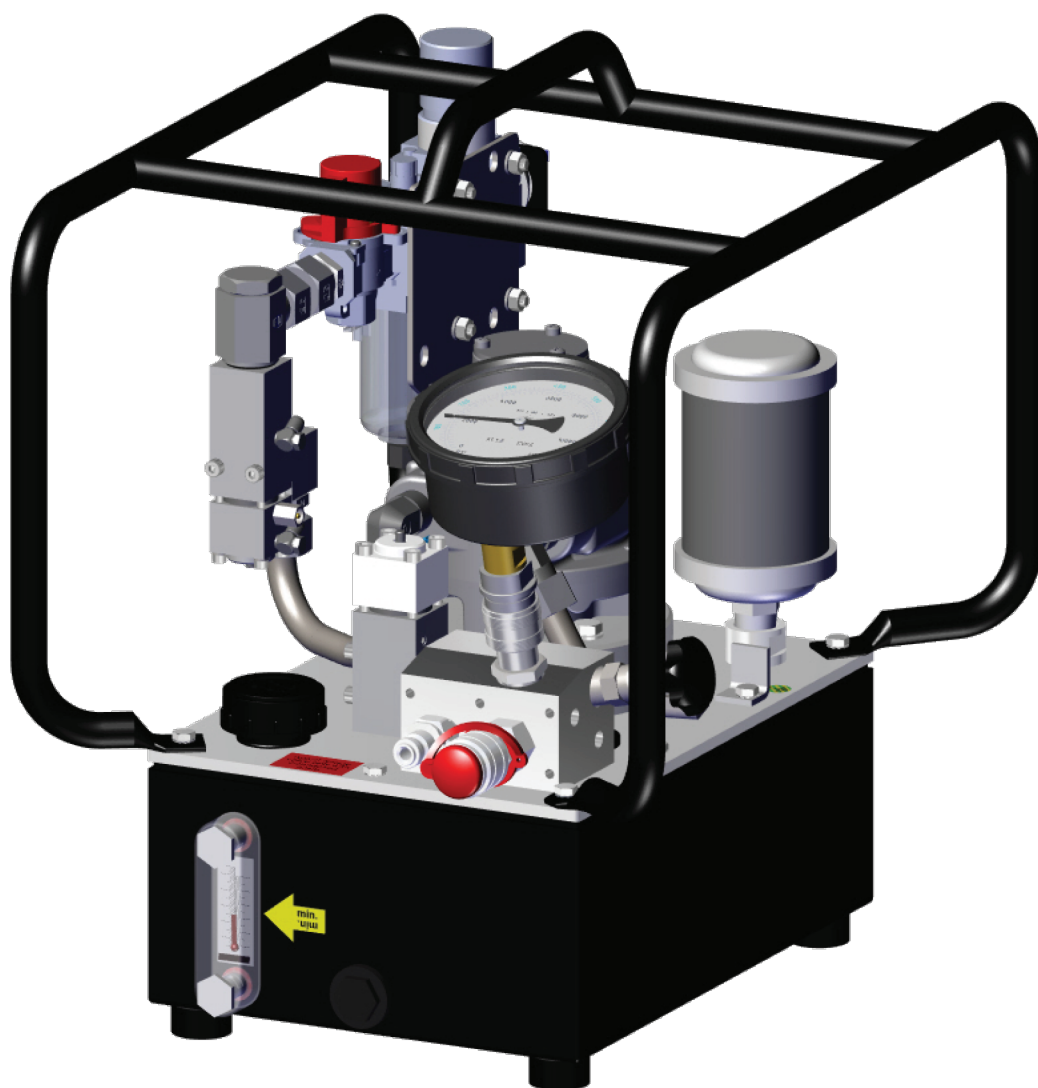
PROBLEM

CAUSE-SOLUTION

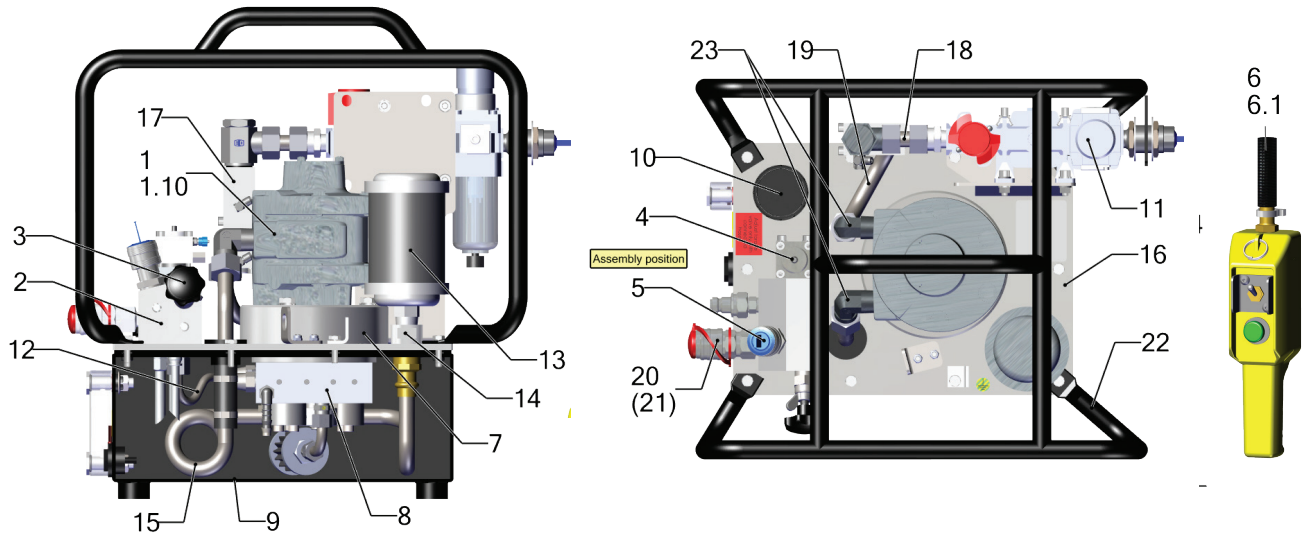
Sporadic Tool Action:	• Air in the hydraulic system. Bleed the hydraulic circuit. • Check reservoir oil level.
Motor Will Not Start:	• Be sure air valve is open. • Pressure at minimum PSI/CFM. • Have motor checked for proper operation.
Noisy Operation:	• Air in system. • Be sure the oil reservoir is filled to normal level. • Check all points where air might leak into system. • Clogged or blocked intake screen.
Pump Oil is Over Heating:	• Inspect for high pressure leakage at the pump (leaking at plug or relief valve). • Oil level is low. Fill reservoir to normal level, or retrofit the pump with larger reservoir or heat exchanger.
Pump Runs But Will Not Pump Oil:	• Pump is not primed. Run pump a few minutes tipping from side to side. • Inspect to make sure that external adjustable relief valve is set properly. • Defective control valve, take to nearest TorcUP Authorized Service Center for repair. • Incorrect motor rotation, take to nearest TorcUP Authorized Service Center for repair. • Check to make sure the intake screen is not clogged. Clean if needed. • Check oil reservoir is low. Fill as needed. • Oil viscosity is too high. Replace with TorcUP oil.

PARTS INDEX

AMAX



PNEUMATIC PUMP



ITEM	QUANTITY	NAME	TYPE	PART NO.
1	1	Pneumatic motor		M-104780
1.10	1	Maintenance kit f. air motor (pos. 1)		S-6028114
*2	1	Valve Block compl. but without manometer, distributing- valve and torque valve		M-110234
*3	1	Torque valve		M-110951
*4	1	Distributing valve		M-111936
*5	1	Pressure gauge		
6	1	Remote control compl.		M-112100
*6.1	1	Connecting note remote control		
*7	1	Subassembly motor flange		
*8	1	Subassembly pump		
*9	1	Oil Reservoir compl.		
10	1	Air Escape valve	TMDV/12-DS/1	M-103732
*11	1	Filter lubricator		
12	1	Pipework (valve block)		M-111978
13	1	Muffler compl.		M-102205

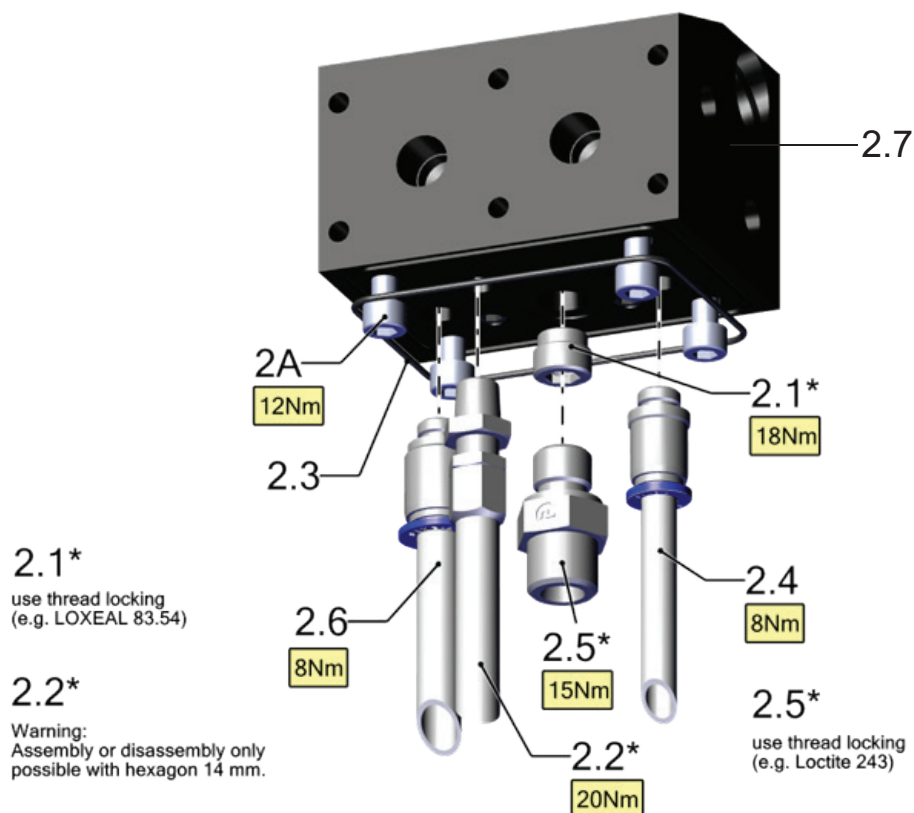
CHECK MUFFLER EVERY 500 HRS

ITEM	QUANTITY	NAME	TYPE	PART NO.
14	1	Extension (incl. o-ring)	G1/2"x18	M-109489
*15	1	Intercooler		M-112205
16	1	Cover		M-112218
*17	1	Pneumatic control compl.		M-111699
18	1	Pipework	15-L 45	M-111723
19	1	Pipework	15-L U	M-116071
*20	1	Female coupler		HC-F-400
*21	1	Male nipple		HC-M-100
*22	1	Carrying handle		
23	2	Screw-in socket angle	WE15L1/2NPTCFX	M-106584

NOTE THE ORIENTATION OF THE ANGLES POS. 23. ANGLE SPECIFICATIONS SEE PG. 26.

VALVE BLOCK COMPLETE

ITEM 2

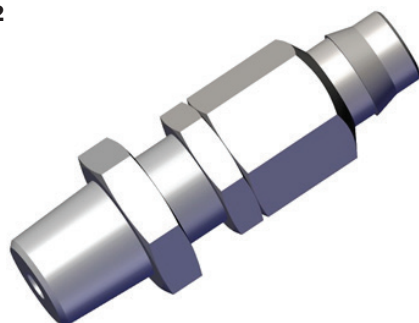


ITEM	QUANTITY	NAME	TYPE	PART NO.
2	1	Valve block compl.	NG4	M-110234
2.1	1	Check valve	RVB 6	M-100657
*2.2	1	Pressure valve	DBT 1,5-100/110	M-103502
2.3	1	O-ring	80x1,5-70NBR	M-106734
2.4	1	Tank pipe	G 1/8"-8/6	M-109714
2.5	1	Screw in socket	GE08SREDOMDCF	M-106528
2.6	1	Tank pipe	G 1/8"-10/8	M-109078
2.7	1	Bare valve	Block	M-113292

ORDER SEPARATELY

ITEM	QUANTITY	NAME	TYPE	PART NO.
2A	4	Deck mounting screw	M6x16-ISO4762-8.8-galv.	M-106798

* ITEM 2.2



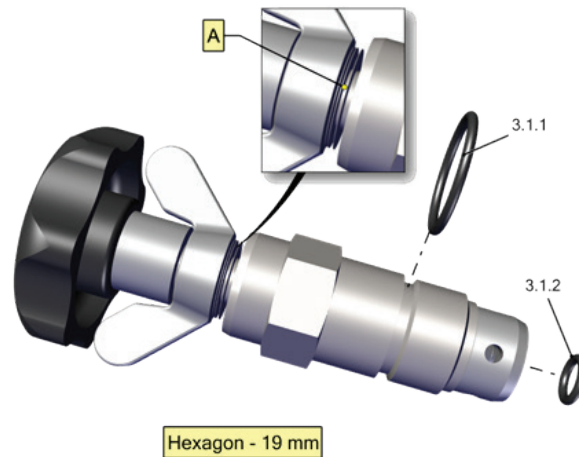
WARNING:

This Valve is adjusted by the factory. The manipulation of the adjustment may cause damage of the system and / or personal injury. Assembly or disassembly only possible with Hexagon 14 mm.

Torque - 20Nm
Hexagon - 14 mm

TORQUE VALVE

ITEM 3



Advice: In case of pressure loss a pressure of 700 bar (10.000 psi) can be reached by removing some shim rings ("A").

ITEM	QUANTITY	NAME	TYPE	PART NO.
3	1	Torque valve	DBE 4-700	M-110951

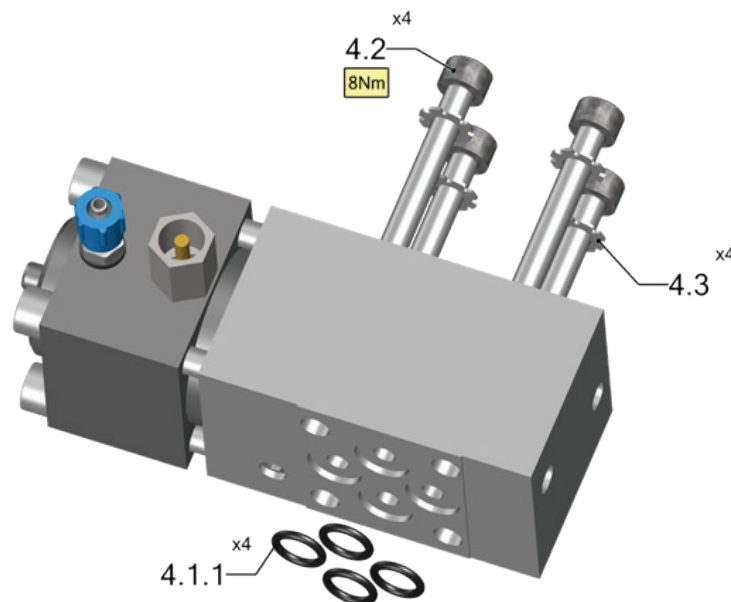
SEAL KIT FOR TORQUE VALVE

ITEM 3.1

ITEM	QUANTITY	NAME	TYPE	PART NO.
3.1	1	Seal kit for torque valve		M-110950
3.1.1	1	O-ring	16x1,5-90 NBR	M-106672
3.1.2	1	O-ring	6x1,5-90 NBR	M-106614

DISTRIBUTING VALVE

ITEM 4



ITEM	QUANTITY	NAME	TYPE	PART NO.
4	1	Distributing valve	SHY-E4-PF-C-O	M111936

SEAL KIT FOR DISTRIBUTING VALVE

ITEM 4.1

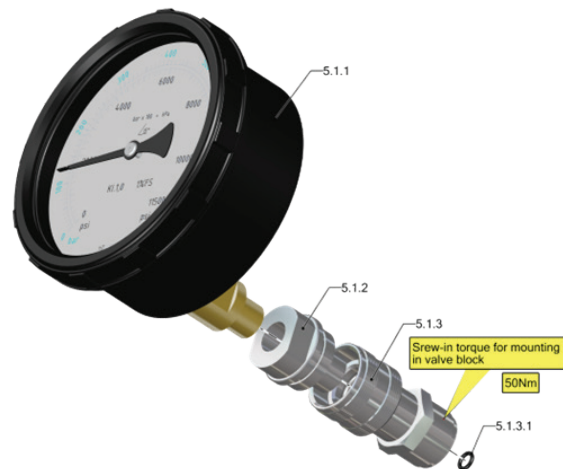
ITEM	QUANTITY	NAME	TYPE	PART NO.
4.1	1	Seal kit for distributing valve		M-103528
4.1.1	4	O-ring	7x1,5-90 NBR	M-106622

ORDER SEPARATELY

ITEM	QUANTITY	NAME	TYPE	PART NO.
4.2	4	Cylinder head screw	M5x45-10.9-galv.	M-108695
4.3	4	Toothed lock washer	A-5,3-DIN6797-galv.	M-106276

PRESSURE GAUGE

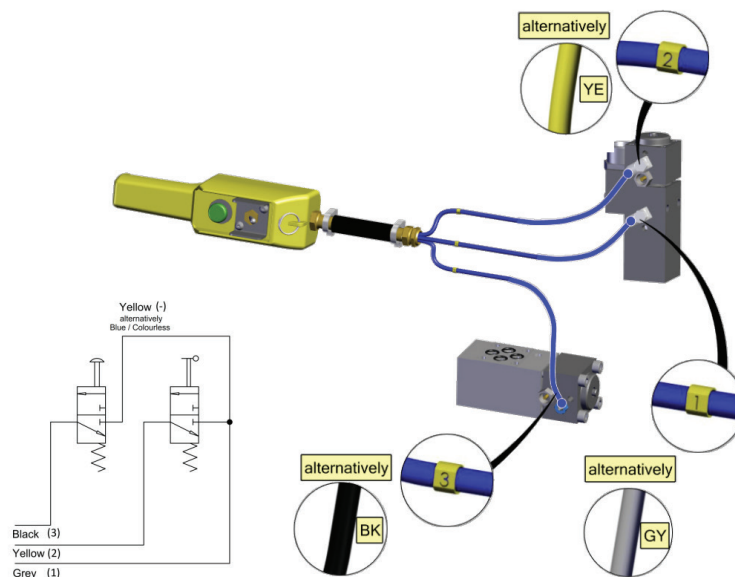
ITEM 5



ITEM	QUANTITY	NAME	TYPE	PART NO.
5.1.1	1	Pressure gauge	1/4" NPTF	PBG-2A-NoFlange
5.1.2	1	Male coupling	3010-2	HC-M-200
5.1.3	1	Pressure gauge-adaprer	Skidmore	M-109032
5.1.3.1	1	O-ring	5x1,5-90NBR	M-106609

REMOTE CONTROL

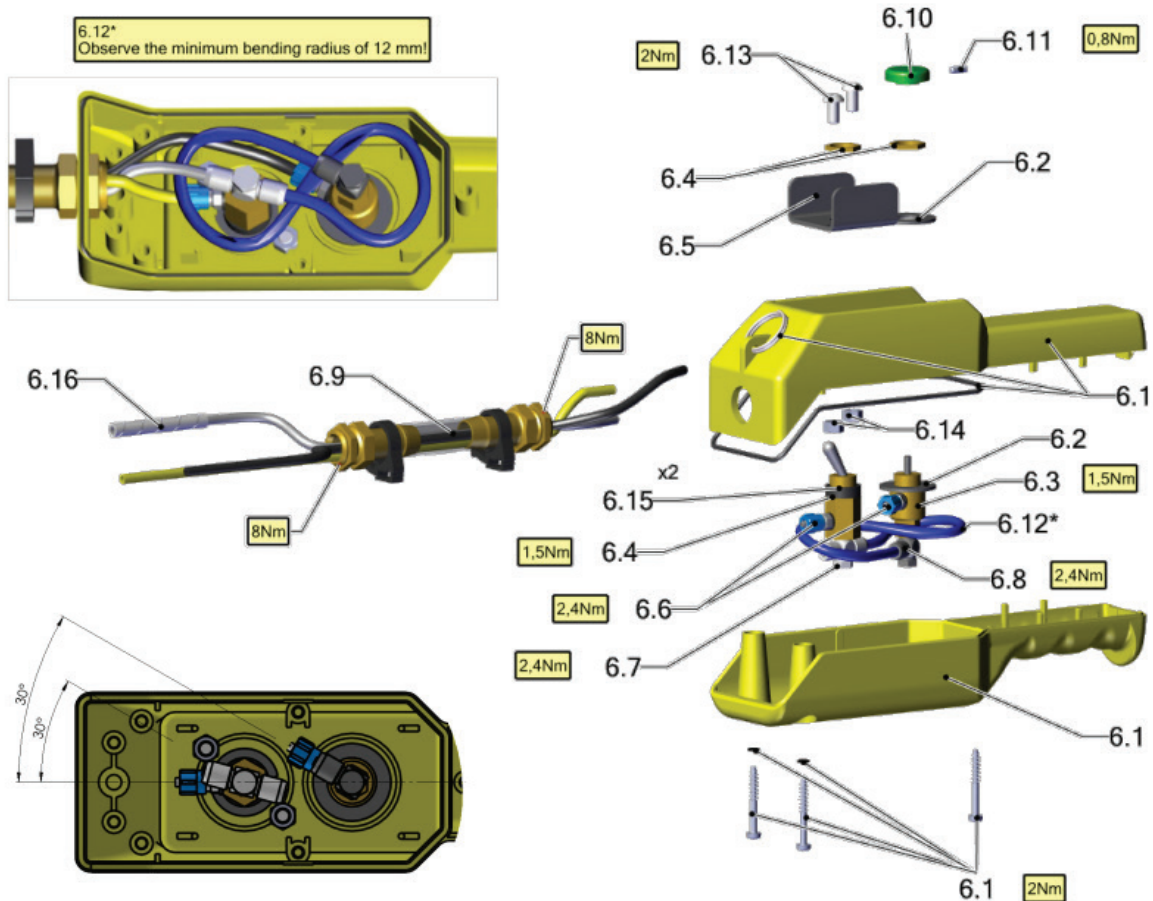
CONNECTION DIAGRAM



REMOTE CONTROL

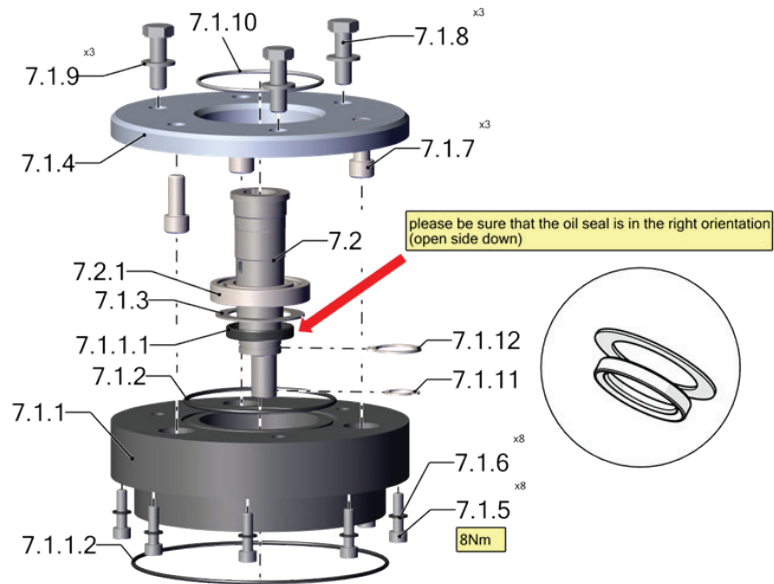
ITEM	QUANTITY	NAME	TYPE	PART NO.
6	1	Remote control compl.	TorcUP-15ft	M-112100
6.1	1	Control pendant	FBP 5	M-103550
6.2	2	Washer	12x25,5x1,5	M-103188
6.3	1	3/2 way stem valve	M-MAV-3	M-105845
6.4	1	3/2 way toggle valve	M-TV-3S	M-105844
6.5	1	Protection toggle FBP		M-101227
6.6	2	Hose fitting	CK-M5-PK3	M-105418
6.7	8	Hose T-connector	TCK-M5-PK3	M-105248
6.8	8	Swiveling hose fitting		M-105644
6.9	3	Hose package	FBP TorcUP	M-111759
6.10	3	Push-button green		M-109095
6.11	3	Threaded pin	M3x8-DIN913-45H-galv.	M-106291
6.12	1	PUR hose	FRPU-04.3x2,8 blue-250	M-114209
6.13	2	Pan head screw	M5x10-ISO7380-galv.	M-106260
6.14	2	Hex-nut	M5-ISO4032-8-galv.	M-106935
6.15	2	Washer	12,2x16x2,5-PA	M-105488
6.16	1	Protective hose	SP 4.25-110	M-114208

ITEM 6



SUBASSEMBLY MOTOR FLANGE

ITEM 7



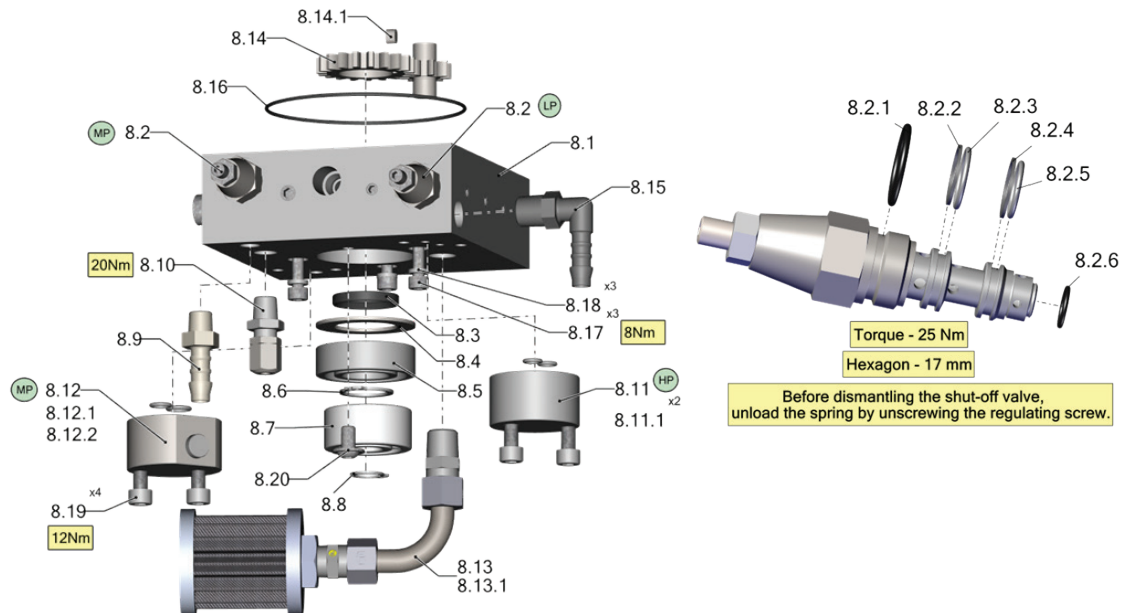
ITEM	QUANTITY	NAME	TYPE	PART NO.
7.1	1	Motor flange, compl.		M-102438
7.1.1	1	Motor flange		M-102608
7.1.1.1	1	Oil seal	24x32x5 BA	M-106455
7.1.1.2	1	O-ring	117x2-70NBR	M-106760
7.1.2	1	O-ring	68x2-90NBR	M-106726
7.1.3	1	Washer	30x42x1 DIN 988	M-106907
7.1.4	1	Adapter washer		M-101575
7.1.5	8	Cylinder head screw	M5x18-8.8 galv. Coated	M-108686
7.1.6	8	Sealing ring	5x9x1 WE DIN 7603	M-106843
7.1.7	3	Cylinder head screw	UNC5/16"x3/4"-12.9 Coated	M-108699
7.1.8	3	Hexagon screw	M8x25-8.8-galv. Coated	M-108693
7.1.9	3	Washer	8,4-DIN125-galv.	M-106874
7.1.10	1	O-ring	48x2-70NBR	M-106718
7.1.11	1	Retaining ring	12x1 DIN471	M-106878
7.1.12	1	Retaining ring	20x1,2 DIN471	M-106880

ORDER SEPERATELY

ITEM	QUANTITY	NAME	TYPE	PART NO.
7.2	1	Shaft, compl.		M-102572
7.2.1	1	Ball bearing	16005.2Z	M-105891

SUBASSEMBLY PUMP

ITEM 8



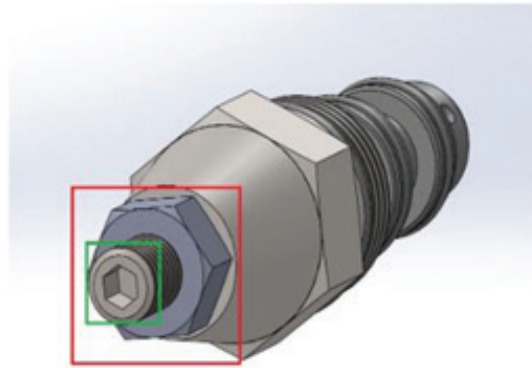
ITEM	QUANTITY	NAME	TYPE	PART NO.
8.1	1	Pump flange		M-109010
*8.2	2	Cut off valve	ASE	M-103363
8.3	1	Oil seal	22x28x4-BAOF	M-106452
8.4	1	Washer	27x42x1,5-1	M-101441
8.5	1	Ball bearing	6004	M-105864
8.6	1	Retaining ring	20x1,2 DIN471	M-106880
8.7	1	Ball bearing	4301 (SKF)	M-105903
8.8	1	Retaining ring	12x1 DIN471	M-106878
8.9	1	Threaded nozzle	GT 188 K	M-104100
8.10	1	Max. pressure valve	DBT 1,5-750	M-100958
8.11	1	High-pressure-pump, compl.	PEV1-08rd (HP)	M-100999
8.11.1	2	O-ring	5,5x1,5-90NBR	M-106610
8.12	1	Medium-pressure-pump, compl.	PEV9-10rd (MP)	M-101001
8.12.1	1	O-ring	6,5x1,5-90NBR	M-106618
8.12.2	1	O-ring	8x1,5-90NBR	M-106625
8.13	1	Suction filter, compl.		M-109589
8.13.1	1	Suction filter		M-105051
8.14	1	Gear pump	6,5	M-102564
8.14.1	1	Parallel key	A4x4x6-DIN6885	M-106234
8.15	1	Angular screw joint	WE 148 K	M-105639
8.16	1	O-ring	82x1,5-70 NBR	M-106735
8.17	3	Cylinder head screw	M5x45-8.8-galv.	M-108695
8.18	3	Locking ring	A5 DIN 7980	M-106837
8.19	4	Cylinder head screw	M6x30-10.9-galv.	M-108698
8.20	1	Round head screw	M6x10-ISO7380 FL-galv.	M-106264

ITEM 8.2

ITEM	QUANTITY	NAME	TYPE	PART NO.
8.2.1	1	O-ring	14x1,5-90NBR	M-106661
8.2.2	1	Support ring	11,2/13x0,7-POM	M-106479
8.2.3	1	O-ring	10,3x1,2-90NBR	M-106641
8.2.4	1	Support ring	10,2/12x0,6-POM	M-106481
8.2.5	1	O-ring	10x1,2-90NBR	M-106642
8.2.6	1	O-ring	7x1-90NBR	M-106623

SUBASSEMBLY PUMP

ITEM 8.2 continued...



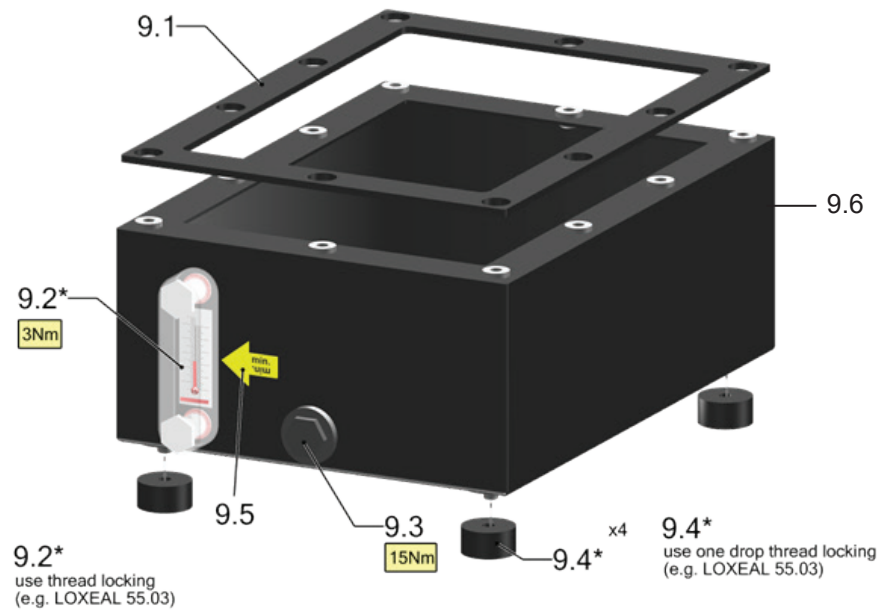
Setting of the cutoff valve:

- To set the cutoff point of the valve, loosen the nut (the red square) in the picture above. Afterward loosen the threaded pin (green square) until you can move it without force.
- Tighten the threaded pin until it reaches a point where it feels that a significant increase in force is required to turn. At this point, start to compress the springs which set the cutoff point.
- Tighten the set screw exactly as described in the following subsection (one turn corresponds to 360°).
 1. Connect a measuring device for oil flow to the pump.
 2. While looking at the measuring device, increase the pressure until there is a significant drop off in the displayed value.
 3. At this value, the cutoff point has been passed.
- Tighten the nut to lock the threaded pin, make sure not to move the threaded pin while tightening.

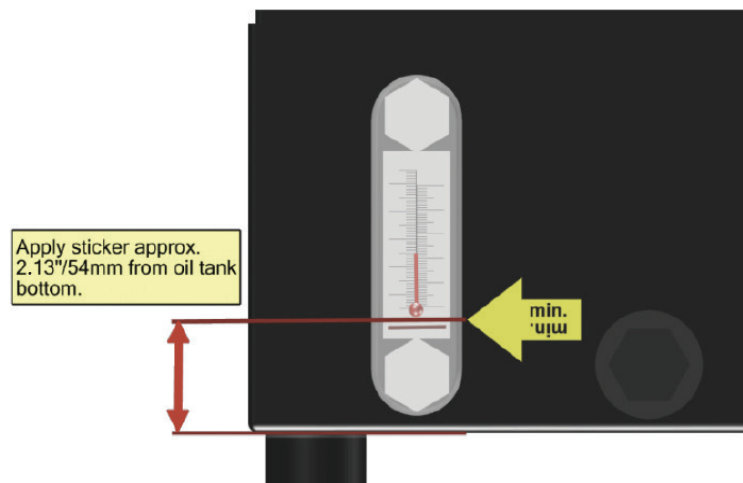
ASE-4		
Cutoff Point	Position	Turns
70bar (1015psi)	LP	≈ 1
300bar (4350psi)	MP	≈ 4,25

OIL RESERVOIR COMPLETE

ITEM 9



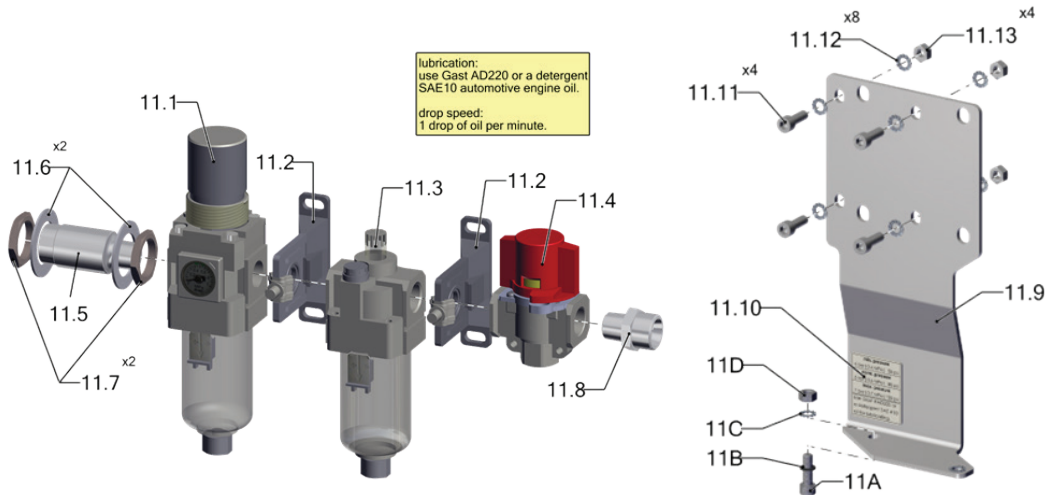
ITEM	QUANTITY	NAME	TYPE	PART NO.
9	1	Oil reservoir compl.		M-110970
9.1	1	Seal		M-110253
9.2	1	Oil level indicator	SLVT-76 (M10)	M-104829
9.3	1	Plug	GN 738 - G1/2", mag, bk	M-104866
9.4	4	Rubber feet	ø30/H=15/M8i	M-103671
9.5	1	Sticker	"arrow minimum" black-yellow	M-111823
9.6	1	Oil Reservoir Only		M-110252



Position "sticker arrow minimum" (Pos. 9.5) for AMAX.

FILTER LUBRICATOR COMPLETE UNIT

ITEM 11



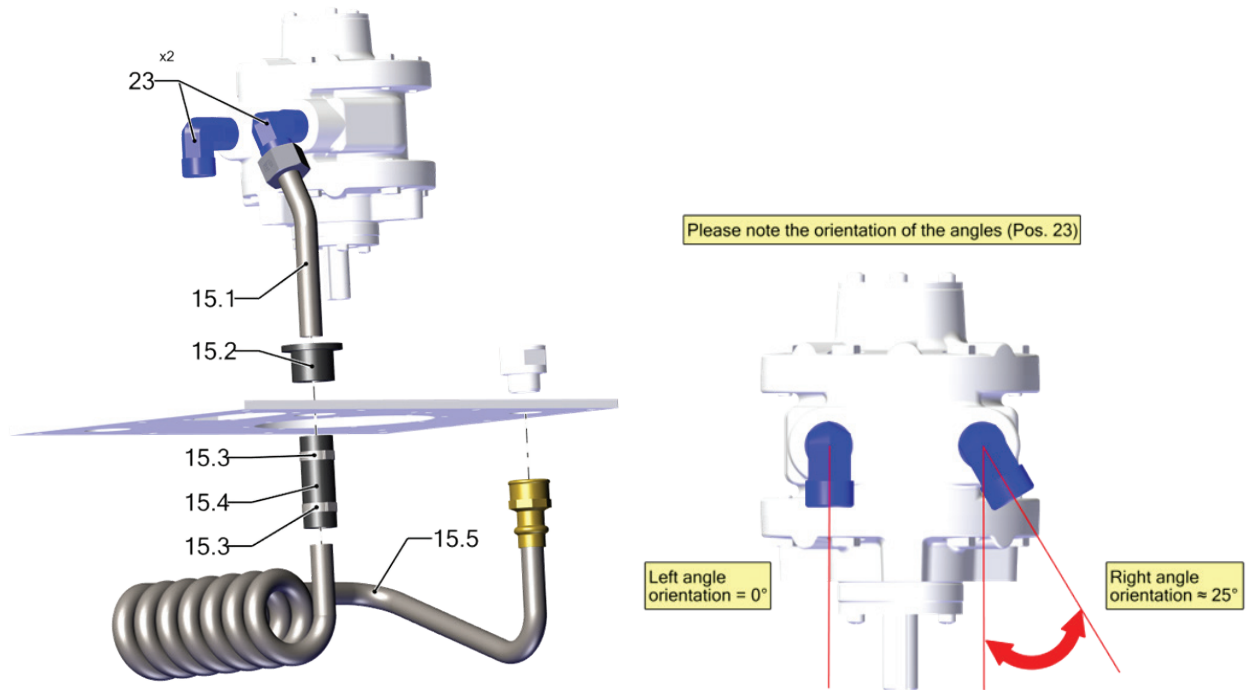
ITEM	QUANTITY	NAME	TYPE	PART NO.
11	1	Filer lubricator (compl. unit incl. bracket)	SMC TorcUp	M-111611
11.1	1	Filter regulator, compl.	AW30-N03E-2(Z)-B	AP-FRL-G-02
11.2	2	Interface w/bracket	Y300T-A	AP-FRL-G-10
11.3	1	Lubricator	AL30-N03-2(Z)-A	AP-FRL-G-07
11.4	1	Shut-off valve	VHS30-N03-A	M-111767
11.5	1	Extension	3/8NPTo 3/8NPTFi G3/4ox33	M-111661
11.6	2	Washer	27x42x1,5	M-101965
11.7	2	Locknut	G 3/4"-brass/ nickel-plated	M-104110
11.8	1	Screw-in socket	GE15L3/8"NPTCFX	M-111716
11.9	1	Angle		M-111598
11.10	1	Sticker	FRL unit oiler	M-111499
11.11	4	Cylinder head screw	M6x18-ISO4762-8.8-galv.	M-106089
11.12	8	Toothed lock washer	A-6,4-DIN6797-galv.	M-106277
11.13	4	Hex nut	M6-ISO4032-8-galv.	M-106938

ORDER SEPARATELY

ITEM	QUANTITY	NAME	TYPE	PART NO.
11A	1	Cylinder head screw	M6x20-ISO4762-8.8-galv.	M-106799
11B	1	Sealing ring	6x10x1 WE DIN 7603	M-106844
11C	1	Toothed lock washer	A-6,4-DIN6797-galv.	M-106277
11D	1	Hex nut	M6-ISO4032-8-galv.	M-106938

INTERCOOLER

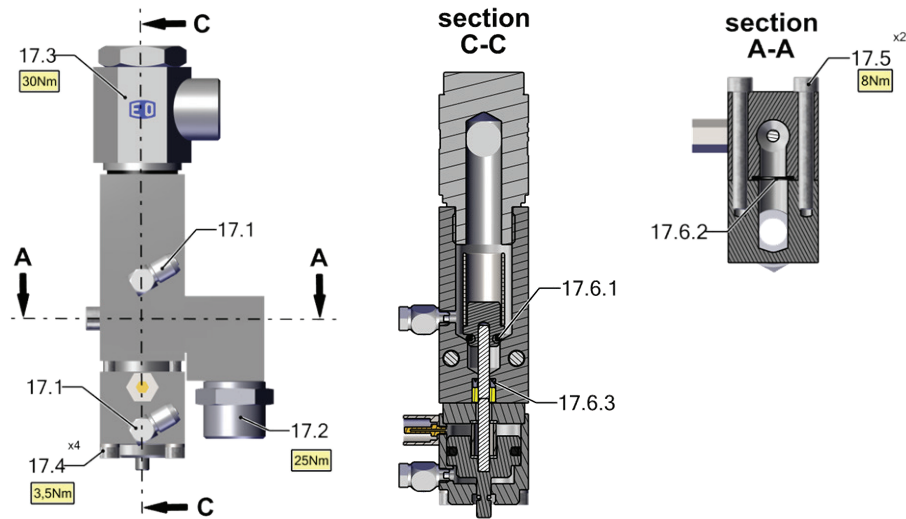
ITEM 15



ITEM	QUANTITY	NAME	TYPE	PART NO.
15	1	Piping intercooler, compl.		M-112205
15.1	1	Pipe intercooler part 1 compl.		M-109464
15.2	1	Pipe opening	DU15	M-104970
15.3	2	Hose clamp	16-27	M-105140
15.4	1	Hose	22-15-60-CR,NBR-BK	M-101979
15.5	1	Pipe intercooler part 2 compl.		M-111492

PNEUMATIC CONTROL COMPLETE

ITEM 17



ITEM	QUANTITY	NAME	TYPE	PART NO.
17	1	Pneumatic control compl.		M-111699
17.1	2	Swiveling screw fitting		M-105644
17.2	1	Screw in socket	GE15LR3/8CFX	M-106581
17.3	1	Screw-in angle	WHK15LRCSOMDCF	M-111601
17.4	4	Cylinder head screw	M4x35-ISO4762-8.8-galv.	M-106781
17.5	2	Cylinder head screw	M5x40-8.8-galv.-thread	M-108691

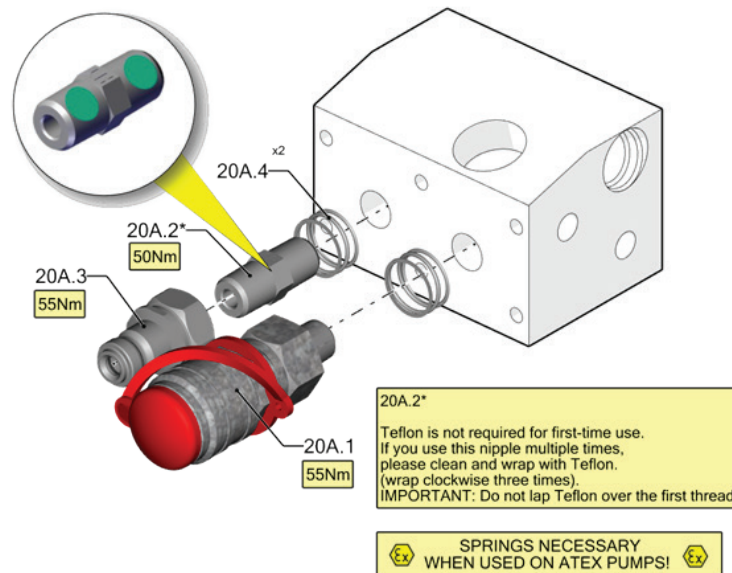
PNEUMATIC CONTROL COMPLETE

ITEM 17.6

ITEM	QUANTITY	NAME	TYPE	PART NO.
17.6	1	Seal kit for pneumatic control		M-102267
17.6.1	1	O-ring	6x3-70 NBR	M-106617
17.6.2	1	O-ring	11x1,5-90 NBR	M-106649
17.6.3	1	Rod seal		M-105302

COUPLINGS

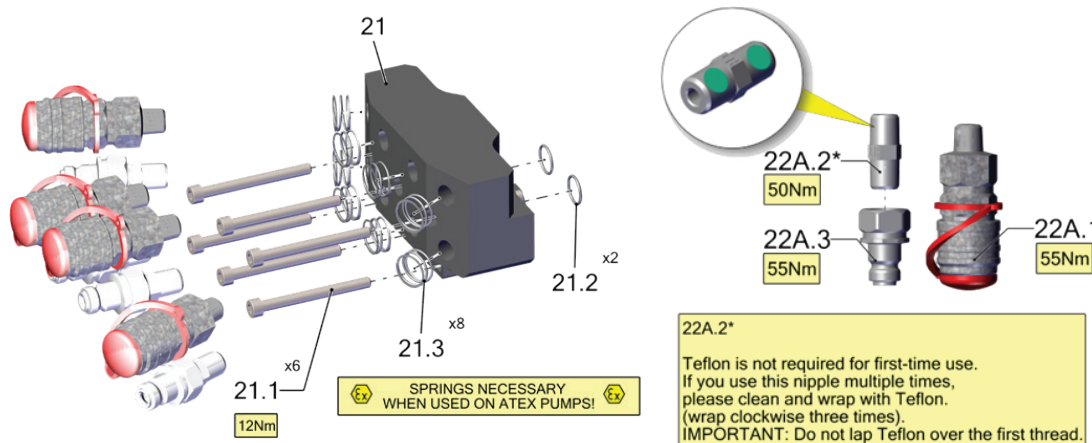
ITEM 20



ITEM	QUANTITY	NAME	TYPE	PART NO.
20A.1	1	Female coupling	115/1/4"NPT AG	HC-F-400
20A.2	1	Double nipple	1/4" NPTF	F04F04
20A.3	1	Male coupling	115/1/4"NPT IG/HF	HC-M-100
20A.4	2	Spring		M-106414

SUBASSEMBLY 4-PORT MANIFOLD

ITEM 21



ATTENTION:

When connecting the 4-port adapter, the available oil volume and the maximum flow rate of the pump are of essential importance. For small pumps, we recommend connecting only small tools. Pump to tool mismatch (pump/oil volume too small, tool too large) will result in tool and/or pump damage.

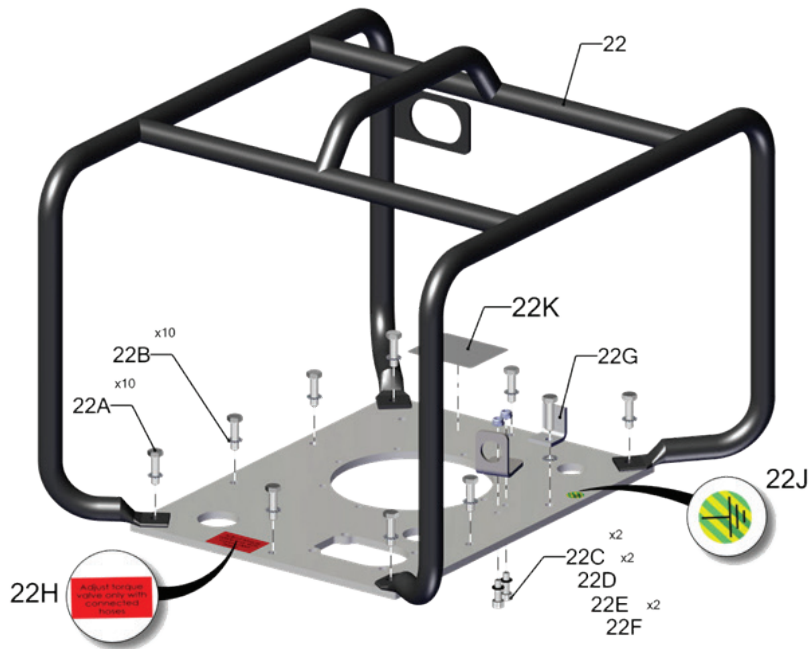
ITEM	QUANTITY	NAME	TYPE	PART NO.
21	1	Adapter 4-port-manifold, set		EMAX/AMAX Manifold
21.1	6	Cylinder head screw	M6x60-10.9 galv. ISO 4762	M-111614
21.2	2	O-ring	14x1,5-90NBR	M-106661
21.3	8	Spring		M-106414

ORDER SEPARATELY

ITEM	QUANTITY	NAME	TYPE	PART NO.
22A		Couplings		
22A.1	4	Female coupling		HC-F-400
22A.2	4	Double nipple		F04F04
22A.3	4	Male coupling		HC-F-100

SUBASSEMBLY 4-PORT MANIFOLD

ITEM 22

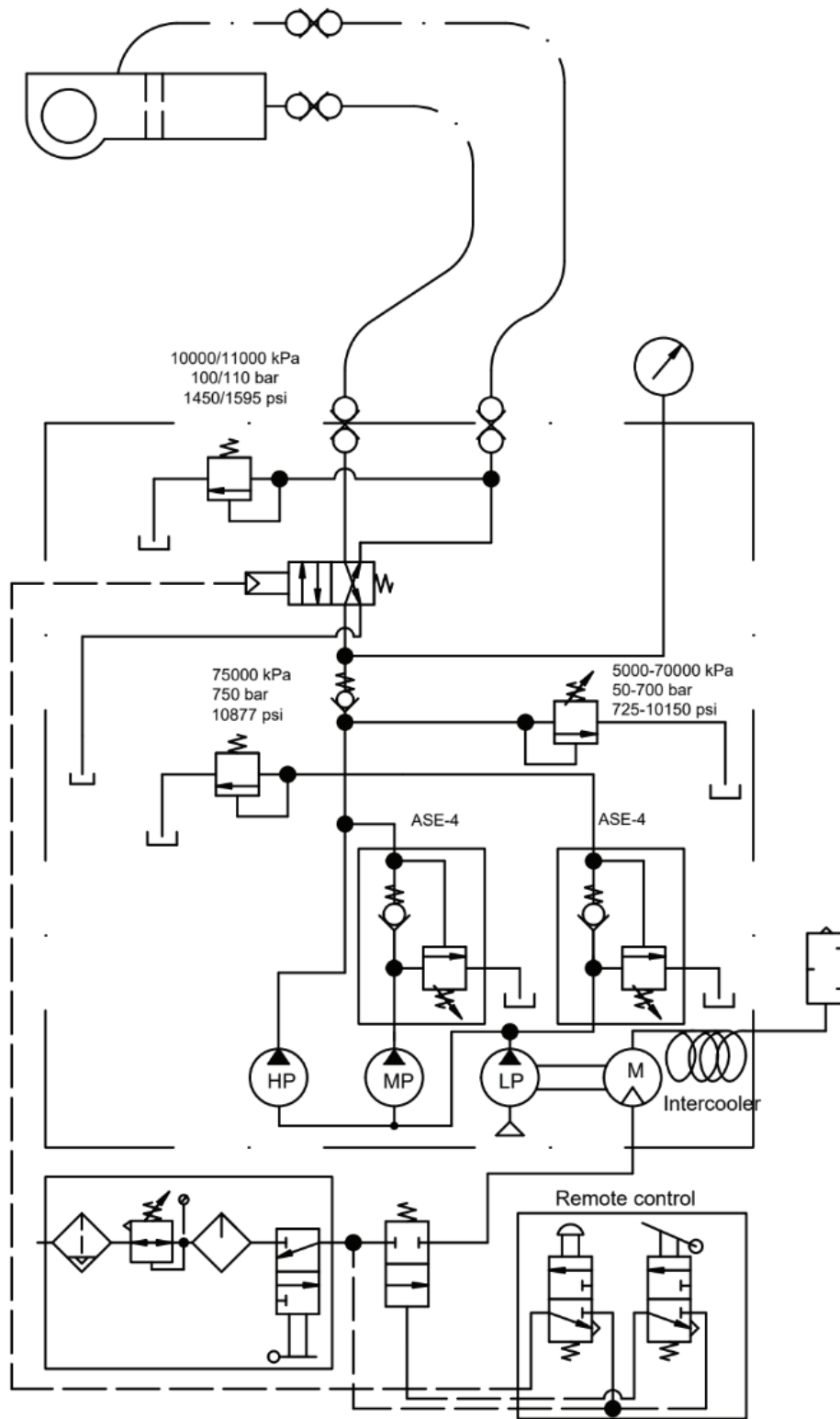


ITEM	QUANTITY	NAME	TYPE	PART NO.
22	1	Carrying handle		M-111597

ORDER SEPARATELY

ITEM	QUANTITY	NAME	TYPE	PART NO.
22A	10	Hexagon screw	M6x22-8.8 galv. ISO 4017	M-106129
22B	10	Washer, pump deck, buna bonded	MCM94708A313	M-106277
22C	2	Cylinder head screw	M5x16-ISO4762-8.8-galv.	M-106787
22D	2	Sealing ring	5x9x1 WE DIN 7603	M-106843
22E	1	Angle		M-103040
22F	2	Hex nut	M5-ISO10511-8-galv.	M-106936
22G	1	Grounding angle		M-101503
22H	1	Sticker	"Adjust torque"	M-103682
22J	1	Sticker	"Earth conductor/PE"	M-103673
22K	1	Sticker	type plate	on request

HYDRAULIC/PNEUMATIC SCHEMATIC DIAGRAM



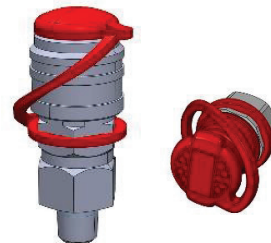
*: cut off point see page 21

Part Number: EMAX/AMAX-QUADKIT-Q

Description: 4-Tool Quad Port Kit, installed with TorcUP **QUICK CONNECT** Couplers

Kit includes the following items:

- EMAX/AMAX-MANIFOLD (Qty 1)
 - 4-Tool Manifold (Qty 1)
 - Mounting Screws (Qty 6)
 - O-Rings (Qty 2)
- F004F004 fittings (Qty 3)
- HC-M-100 Quick Connect Nipple (Qty 3)
- HC-F-400 Quick Connect Couplers (Qty3)



Part Number: EMAX/AMAX-QUADKIT-T

Description: 4-Tool Quad Port Kit, installed with **THREADED or SCREW** type Couplers

Kit includes the following items:

- EMAX/AMAX-MANIFOLD (Qty 1)
 - 4-Tool Manifold (Qty 1)
 - Mounting Screws (Qty 6)
 - O-Rings (Qty 2)
- F004F004 fittings (Qty 3)
- HC-S-200 Screw Type coupler set (Qty 3)



Installation of QUADKIT to an existing pump.

1. Remove existing couplers and fittings (fig 1) from Valve Block. (Keep for Reuse)
2. Clean oil and remove debris from Valve Block face surface.
3. Install nipple and couplers on to manifold (fig 2)
 - ADVANCE (Top Row) use the Female couplers
 - RETRACT (Bottom Row) us the fittings and male nipples.
 - Use Teflon tape on threads.
 - Torque to 37 lbf-ft / 50Mn
4. Use a small amount of white lithium grease to hold the O-Rings to the manifold. (fig 3)
5. Mount manifold assembly to Valve Block, using 6 socket head cap bolts. (fig 4)
 - Hand snug all bolts
 - Torque bolts to 9 lbf-ft / 12Nm
6. Pressurize pump to ensure no oil leaks.

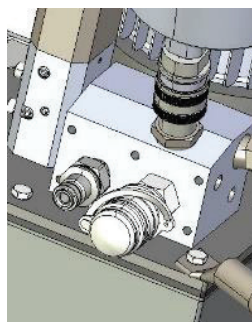


fig 1

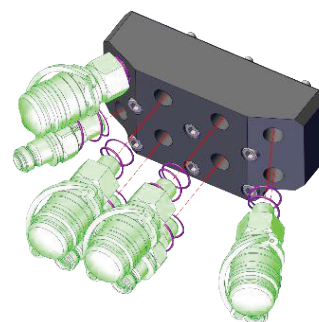


fig 2

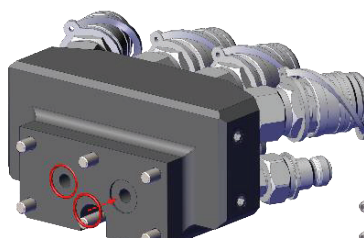


fig 3

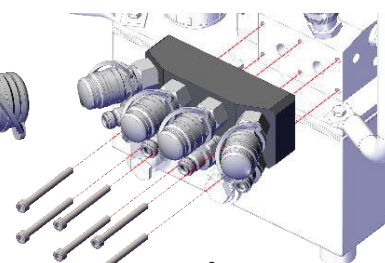


fig 4

SAVE THESE INSTRUCTIONS DO NOT DESTROY

NOTES:

This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There are no vertical margin lines, text, or other markings on the page.

1025 Conroy Place, Easton PA 18040 * U.S.A.
Phone: +1 610-250-5800 * Fax: +1 610-250-2700
Toll Free: 1-888-TORCUP-1
Email: sales@torcup.com * Website: www.torcup.com