

WARNING: Do Not Operate Before Reading Manual

TOREX

Hydraulic Cooler

OPERATOR'S MANUAL

35 G.P.M.
3000 P.S.I.



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OPERATION, MAINTENANCE AND INSTALLATION

SAFETY PRECAUTIONS

- Do not work under the vehicle when the engine is running. Do not work on any part of the hydraulic system while the pump is running. Do not go near any leaks when pump is running.
- High pressure oil easily punctures skin causing serious injury, gangrene or death. If injured, seek emergency medical help. Immediate surgery may be required to remove oil. Never use fingers or skin to check for leaks. Always lower load or relieve hydraulic pressure before loosening any fittings.
- A serious or fatal injury can occur if you:
 - Lack proper training
 - Fail to follow proper operating procedures
 - Fail to use proper tools and safety equipment
 - Assemble components improperly
 - Use incompatible/incorrect components
 - Use worn or damaged components

INITIAL HYDRAULIC SYSTEM STARTUP

1. Have appropriate hydraulic oil ready to use. Non-foaming hydraulic oil is required. MD-Kinney recommends Shell Tellus "T" series ISO 32 or equivalent.
2. Fill the Torex with the above listed hydraulic oil.
3. After Torex is filled, check for hydraulic system leaks.

4. Slowly engage the P.T.O. and pump. Stop when level drops in the Torex tank to just below the oil sight glass.
5. Disengage the P.T.O.
6. Re-fill Torex and repeat step 4 until oil level in tank does not drop while the P.T.O. is engaged.

MAINTENANCE

1. Change hydraulic oil every 6 months*
2. Change hydraulic oil filter every 6 months*
3. Check oil level on a weekly basis, with hydraulic system off.
4. Visually check all fittings, hoses, and mounting equipment on a weekly basis, with hydraulic system off.
5. Follow manufacturer recommendations for all PTO and pump installation and maintenance.

*Oil analysis program recommended to determine ideal oil and filter change frequency.

NORMAL OPERATION

Visual Checks Prior to System Start:

1. Check that oil level is within oil sight glass level.
2. Remove any obstructions from radiator and fan.

Starting Hydraulic System:

1. Ensure brake is applied.
2. Ensure control valves are in neutral position.
3. Engage PTO per manufacturer's instructions.
4. Oil level may drop if air is trapped in system. Stop system and top off tank if necessary.
5. Operate the valving slowly.
6. To stop the system, follow the above steps in reverse.

SUCTION LINE INSTALLATION GUIDELINES

Special attention should be given to applications utilizing unusually heavy or large diameter piping. When excessive loading or insufficient support of the suction piping exists, reservoir fatigue fractures, loss of oil, and decreased hose life are likely to occur.

For all applications, confirm that the weight and length of pipe work and fittings is not excessive enough to create vibration or flexing issues. If weight is found to be excessive, shorten the piping to reduce vibration and/or add support brackets to compensate for the added weight. Additional support brackets should be attached to a common point with the Torex so that flexing of the truck frame and vibration does not induce additional stress on the Torex.

MOUNTING THE TOREX HYDRAULIC COOLER

Behind the cab is the preferred mounting method. Frame rail mount may also be acceptable, but should be the secondary choice.

1. Only use the mounting bracket, capscrews, washers and nuts supplied to mount the Torex.
2. Be sure to allow 4" of space between radiator and any solid obstruction that will effect air flow into radiator.
3. Radiator must be shielded from rocks and road debris.

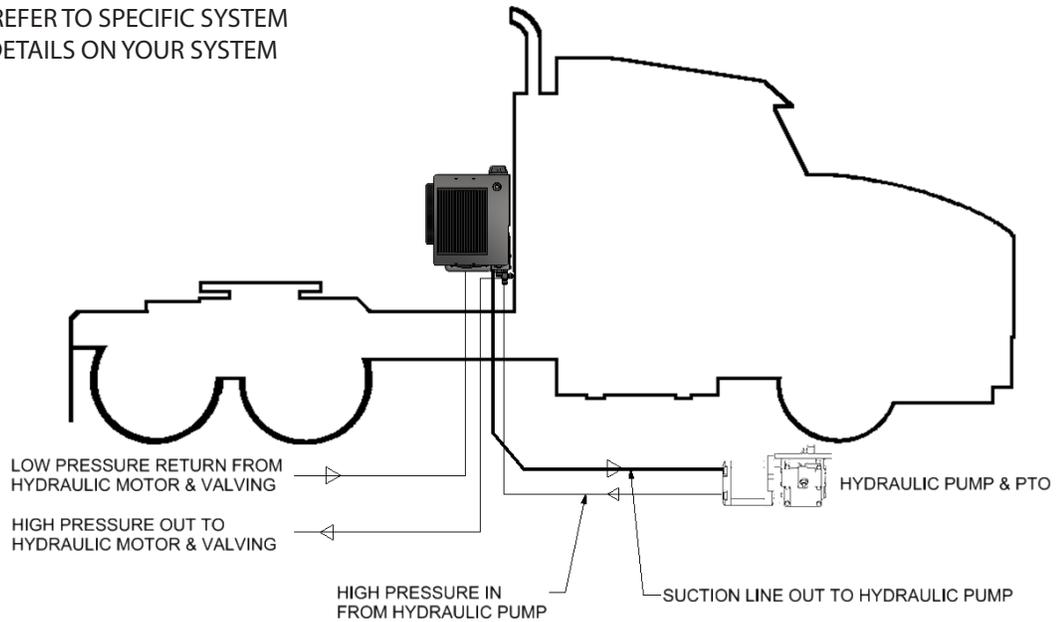
HYDRAULIC HOSES AND FITTINGS

1. Extra care should be taken to ensure that no tape or pipe dope is able to contaminate the hydraulic system.
2. All hoses are customer supplied. Fit all hoses as per separate system drawings provided by MD-Kinney.
3. All high pressure hoses must have a working pressure rating equal to or higher than the hydraulic system relief valve setting.
4. The suction hose must be suitable for 28"Hg vacuum service.
5. Hoses must have proper support near the Torex to reduce loading from hose and fluid weight. Unsupported hoses pull on the welded connection fittings of the reservoir and may result in reservoir stress fractures and shortened hose life.
6. All hoses should use the largest bend radius possible to reduce pressure drop and loading. Always follow the hose manufacturer's recommendations for hose duty and bend radius. If an excessively tight bend is required, consider using a section of rigid pipe such as a street 90 with increased pipe diameter.

MOUNTING OPTIONS

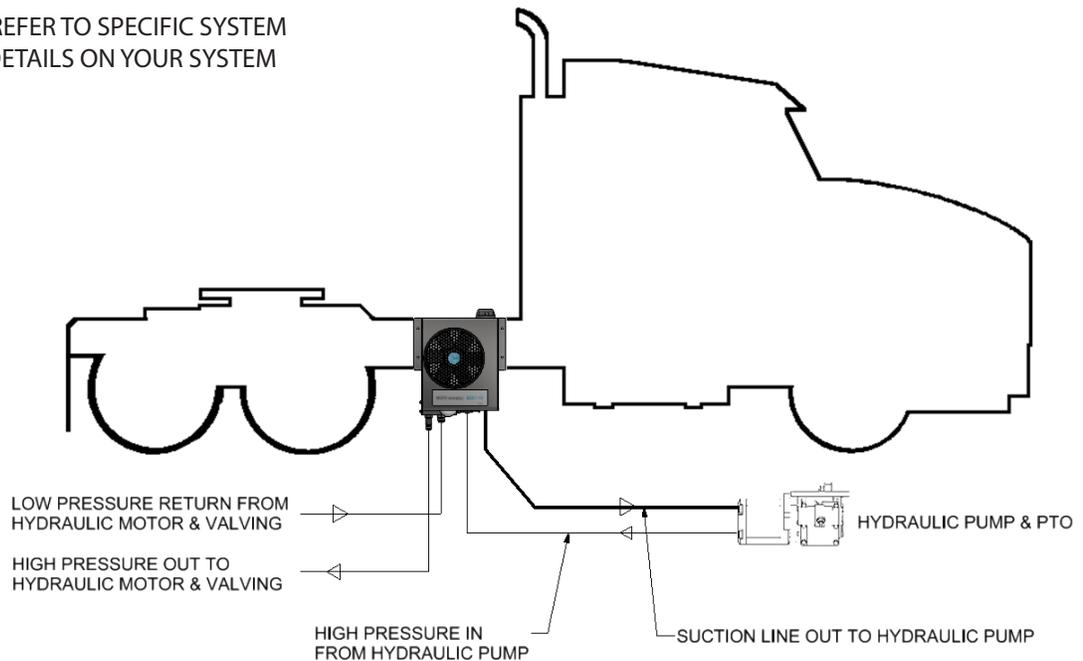
BEHIND-THE-CAB MOUNT (IDEAL)

EXAMPLE ONLY - REFER TO SPECIFIC SYSTEM SCHEMATIC FOR DETAILS ON YOUR SYSTEM

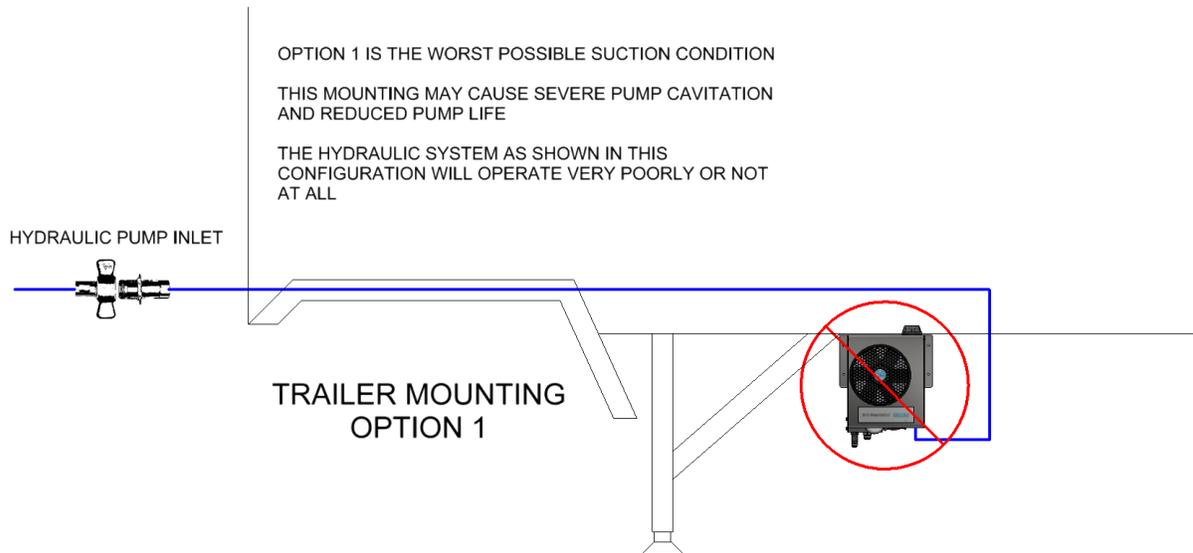


FRAME RAIL MOUNT (ACCEPTABLE)

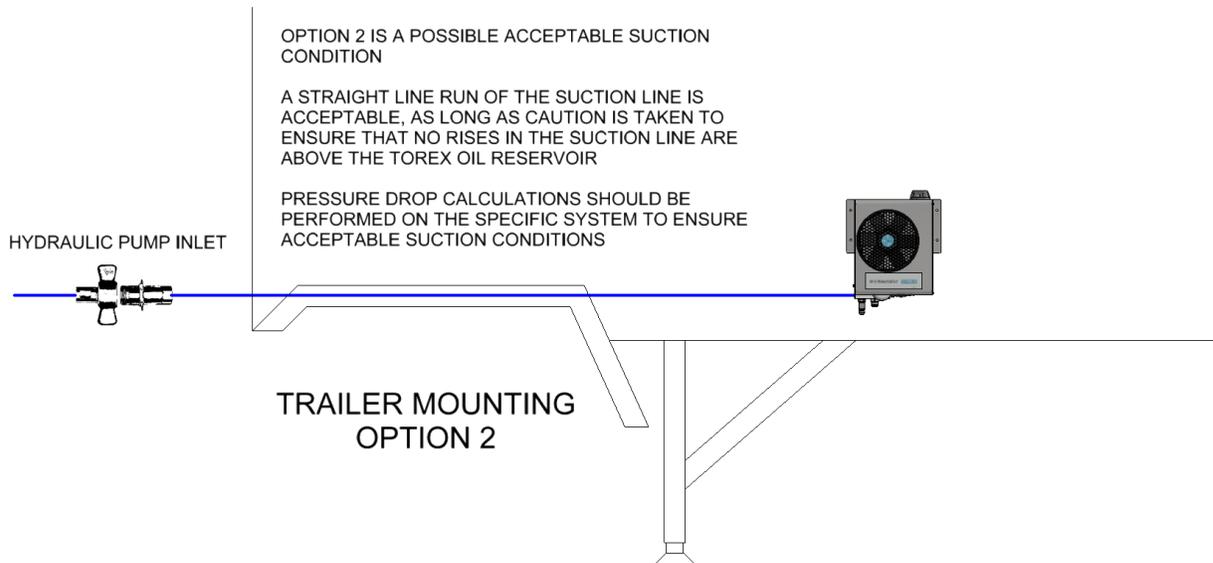
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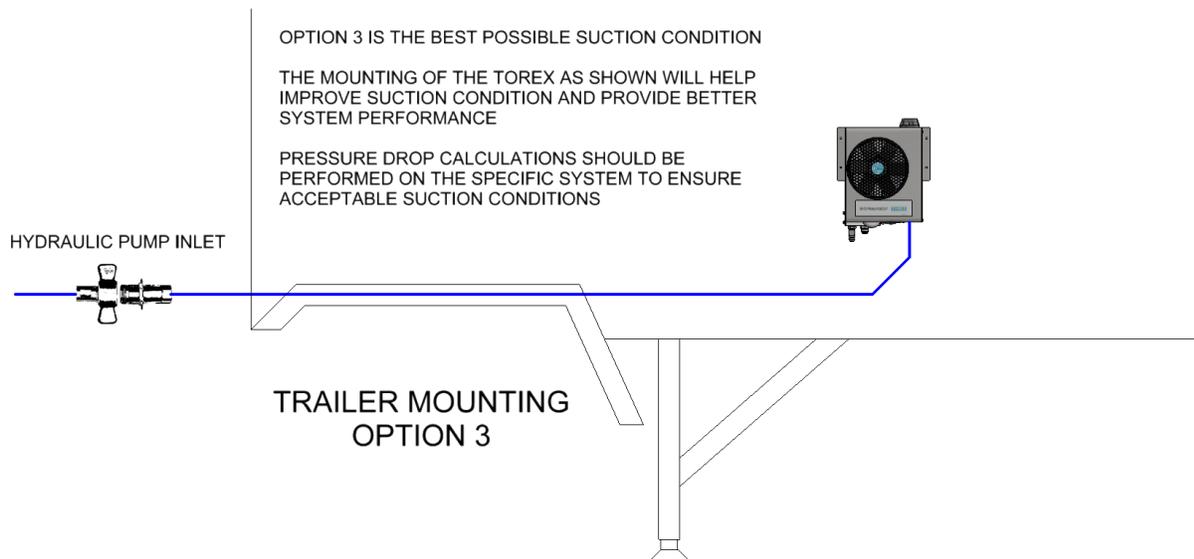
TRAILER MOUNTING - OPTION 1



TRAILER MOUNTING - OPTION 2



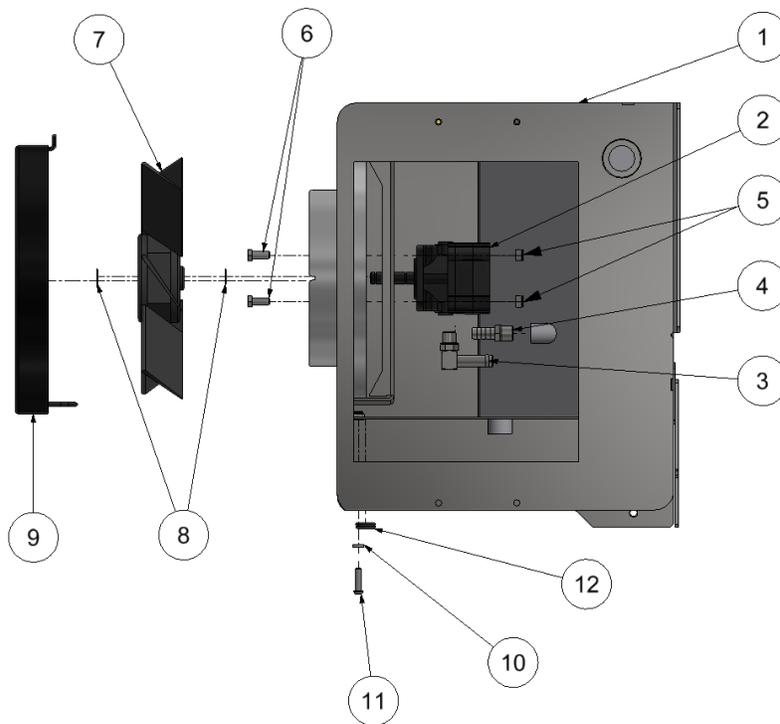
TRAILER MOUNTING - OPTION 3



02

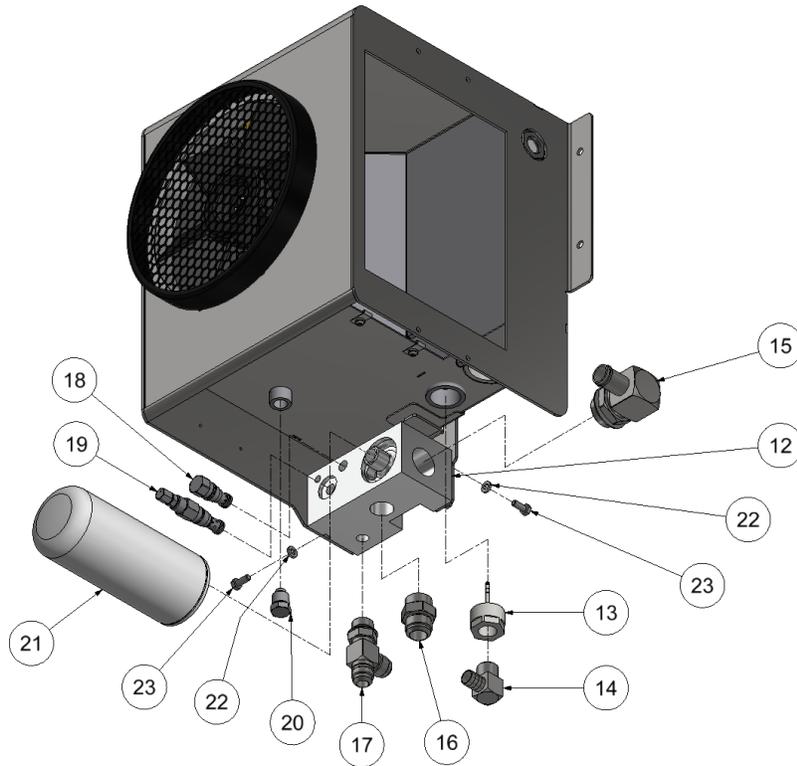
PARTS LIST AND DRAWINGS

FAN & GUARD ASSEMBLY



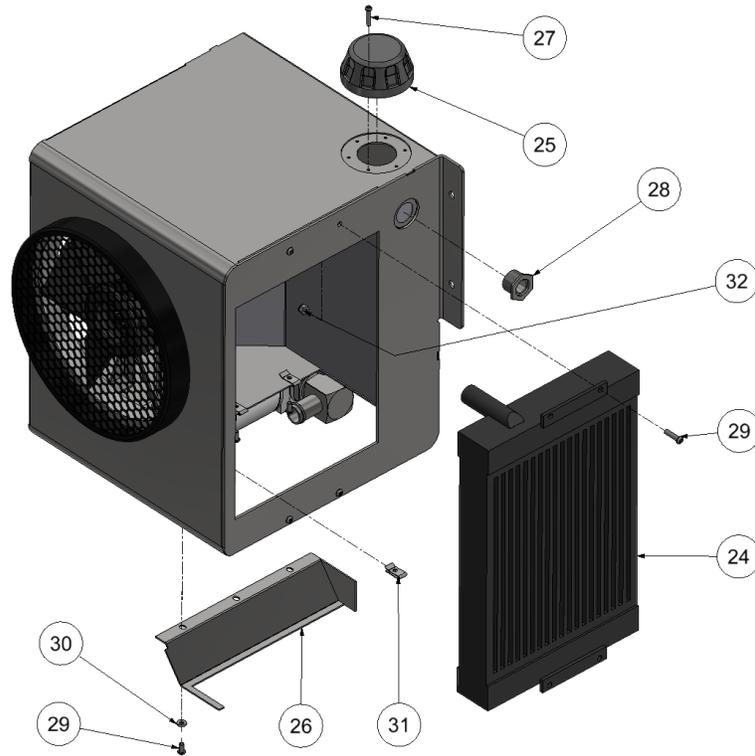
Item #	Part No.	Qty	Description	Item #	Part No.	Qty	Description
1	500080218	1	FRAME	7	506022206	1	FAN
2	300001228	1	HYDRAULIC FAN MOTOR	8	244010200	2	FAN RETAINING RING
3	302095219	1	HYDRAULIC ELBOW (FAN)	9	521022202	1	FAN GUARD
4	302183202	1	HYDRAULIC BARB (TANK)	10	240404000	2	FAN GUARD WASHER
5	236105400	4	NUT	11	214004216	2	FAN GUARD SCREW
6	75A10Z	4	SCREW (FAN MOTOR)	12	521070206	1	GROMMET

CONTROL BLOCK ASSEMBLY



Item #	Part No.	Qty	Description	Item #	Part No.	Qty	Description
12	311003202	1	CONTROL BLOCK	18	304060209	1	HYDRAULIC FLOW CONTROL (CB)
13	304059203	1	RADIATOR BY-PASS CHECK VALVE	19	303000008	1	HYDRAULIC RELIEF VALVE (CONTROL BLOCK)
14	302180204	1	HYDRAULIC ELBOW (CHECK VALVE)	20	258208208	1	MAGNETIC DRAIN PLUG
15	302183203	1	HYDRAULIC ELBOW (CONTROL BLOCK)	21	306000210	1	HYDRAULIC FILTER
16	302065207	1	HYDRAULIC ADAPTER (CONTROL BLOCK)	22	405767	1	LOCK WASHER (CONTROL BLOCK)
17	302005200	1	HYDRAULIC TEE (CONTROL BLOCK)	23	405766		SCREW (CONTROL BLOCK)

RADIATOR & BREATHER ASSEMBLY



Item #	Part No.	Qty	Description	Item #	Part No.	Qty	Description
24	308011213	1	RADIATOR	29	214304212	7	SCREW (BLANKING PLATE/RADITOR)
25	309001203	1	BREATHER CAP	30	240004400	3	WASHER (BLANKING PLATE)
26	540063209	1	RADIATOR BLANKING PLATE	31	299120204	3	SPEED NUT (BLANKING PLATE)
27	212303216	6	BREATHER SCREWS	32	50AW24	4	NUT (RADIATOR)
28	307058205	1	SIGHT GLASS				

Not Shown:

Hoses:			
33	310010208	1	HOSE - MOTOR RETURN (1/2")
34	407021216	1	HOSE - FAN TO BLOCK (1/4")
35	310030211	1	HOSE - BLOCK TO RADIATOR (1")
36	310030212	1	HOSE - RADIATOR TO TANK (1")
37	310030217	1	HOSE - RADIATOR TO CHECK VALVE (3/4")
38	299070207	5	WORM CLAMP (1-1.5")
39	299070211	2	WORM CLAMP (.75"-1.25")

Fittings:			
40	302170205	1	HYDRAULIC BARB (8 X 6 NPTM)
41	302180204	1	HYDRAULIC ELBOW (12 X 12 NPTM)
Labels:			
42	537001207	1	LABEL - HIGH PRESSURE
43	537001209	1	LABEL - NO STEP
44	537061217	1	LABEL - MD-TOREX
45	537010228	1	LABEL - TOREX MODEL & S/N
46	537061216	1	LABEL - TOREX LOGO ROUND

WARRANTY

WARRANTY: The Seller warrants the goods sold hereunder against defects in workmanship or materials under normal and proper installation for a period of twelve (12) months from the date of delivery. BUYER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY IS FOR THE REPAIR OR REPLACEMENT AT SELLER'S OPTION, WITHOUT CHARGE TO BUYER EXCEPT FOR SHIPPING EXPENSES, AT THE OFFICE OF THE SELLER IN LOUISVILLE, KENTUCKY, OF ANY PART WHICH HAS PROVEN TO BE DEFECTIVE AT THE TIME IT WAS DELIVERED. ANY GOODS UNDER WARRANTY MUST BE RETURNED TO THE SELLER'S OFFICE FOR INSPECTION BY THE SELLER AND, IF ANY SUCH GOODS ARE FOUND TO BE DEFECTIVE, FOR REPAIR OR REPLACEMENT. ALL FREIGHT AND EXPENSES OF SHIPMENT TO AND FROM THE SELLER'S OFFICE SHALL BE BORNE BY THE BUYER. THE SELLER IS NOT RESPONSIBLE FOR ANY EXPENSES OF ANY NATURE INCURRED FOR ANY REPAIRS TO ALTERATIONS MADE BY OTHERS TO THE GOODS OR ANY OTHER EQUIPMENT WITHOUT THE PREVIOUS WRITTEN CONSENT OF THE SELLER. SHOULD THE GOODS BE PARTIALLY OR FULLY INSTALLED, ALTERED, STRIPPED, REPAIRED, SERVICED, OR MAINTAINED BY ANY PERSON OTHER THAN AUTHORIZED AGENTS AND EMPLOYEES OF THE SELLER, WITHOUT THE PREVIOUS CONSENT OF THE SELLER, OR MISUSED IN ANY WAY, THIS WARRANTY SHALL BE VOID. THIS WARRANTY CONSTITUTES THE ONLY WARRANTY BY THE SELLER OF THE GOODS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL SELLER BE LIABLE FOR BUYER'S ATTORNEY'S FEES.

NO CONSEQUENTIAL DAMAGES: UNDER NO CIRCUMSTANCES SHALL THE SELLER BE LIABLE FOR (A) ANY DAMAGE, INJURY, BREAKAGE OR LOSS OF ANY KIND WHATSOEVER, (B) ANY LOSS OF INCOME, OR (C) ANY CONSEQUENTIAL LOSS.

NO TORT LIABILITY: SELLER DISCLAIMS ANY LIABILITY FOR CLAIMS BASED ON SELLER'S NEGLIGENCE OR STRICT LIABILITY IN TORT.

PARTS: This Warranty and all disclaimers and limitations of liability shall apply to all parts sold to Buyer.

TRAINING AND SUPERVISION: The buyer hereby assumes the affirmative duty to properly educate, instruct and supervise its employees and all others, except employees of the Seller, in the safe, proper use and operation of the goods. The Buyer agrees to indemnify the Seller for any damages paid by the latter as a result of the Buyer's failure to perform this affirmative duty.

The goods are not designed or intended for use with every substance. If the material which the Buyer contemplates transferring with the goods has corrosive or polymerizing or other properties which may result in unsatisfactory or dangerous operations, the Seller has no liability or responsibility for performance of the goods.

RETURN OF GOODS: No goods supplied may be returned to the Seller for credit without the Seller's prior written authorization before transportation thereof commences and in such cases transportation must be prepaid and the Buyer's name, address, original order number and the Seller's invoice number must be clearly marked on the shipping tag.

If any goods are returned to the Seller for repair or under warranty and no instructions are received within two months after Seller receives the goods for repair or sends notice to Buyer of the disallowance of a warranty claim, the Seller reserves the right to scrap the goods returned, and no subsequent claim for any costs or losses will be accepted.

APPLICABLE LAW AND VENUE: The rights and obligations of the parties hereunder shall be governed in all respects, including all questions of construction and performance of this order, by the laws of Kentucky. All disputes concerning this order shall be resolved in an appropriate state or federal court located in Louisville, Kentucky.

MODIFICATION OR RESCISSION: This warranty can only be modified or rescinded by a written agreement signed by an officer of both the Buyer and the Seller.

M-D Pneumatics®

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