

SERVICE MANUAL

Eritherium M1 **High Pressure Injection Pump**



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(Specifications in this owner's manual are subject to change without notice)

MIGHTY PAINT SPRAYING EQUIPMENT LIMITED WARRANTY

MIGHTY Spraying Technology Co., Ltd. extends to the original purchaser of its paint spray equipment a limited one year warranty from the date of purchase against defects in material or workmanship provided that the equipment is installed and operated in accordance with the recommendations and instructions written in the owners manual.

MIGHTY Spraying Technology Co., Ltd. will repair or replace, at its option, defective parts without charge if such parts are returned (still intact in the original equipment) An proof of purchase must be attached.

THIS WARRANTY DOES NOT COVER:

Normal wear and/or defects caused by or related to abrasion, corrosion, abuse, negligence, accident, faulty installation or tampering in a manner which impairs normal operation.

Transportation costs and other incidental, direct, special, or consequential damages or loss.

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Introduction

We appreciate your decision to purchase a MIGHTY Spraying Technology high quality professional system and believe you will find it to be the best sprayer you ever owned. Your system is capable of injecting a wide variety of coatings. The material you are injecting will have a direct effect on the amount of pressure required for the optimum pattern and coverage to be obtained. We recommend that before actually beginning your job, you carefully read this manual and practice with the system until you feel comfortable using it.

The M systems are powerful and versatile system. Ask your supplier about the recommended accessories for your particular job.

Light, Simple, sharp, Eritherium M1 adapted the elegant gene from Italy.

Improved 650 Nm Solid power comes from a strong brushless motor, high force and long service life.

Direct drive structure, Without reducing gears! Delivers much more flow (liter at 1900rpm) , saving time and cost. Ultra high pressure, Maximum working pressure over 700 bar, (Suggest working pressure 220 bar)

超高壓力，最高可以達到 700 bar 以上，讓填充料可以深達各個縫隙。

台製大廠充電式電動衝擊起子驅動，DC 20V 無刷充電式馬達，扭力超強，四段按鍵式變速，按鍵操作更容易。先進的 IC 控制設計，防止過熱，防止過載及過度充電。搭配二顆 DC4.0Ah 充電電池，工作整天沒問題！

少了電線纏繞，使用更便利。

防水等級：IP54

Drill model code	TD7955 20V Brushless Motor System
Charger voltage	110-240V
Max. Torque	650N/m / 6.628kgf/cm
No Load Speed	L: 0-900rpm M: 0-1600rpm H: 0-1900rpm Ⓜ: 0-1900/500rpm ⓂSpeed control: When drill reaches peak torque 1900 rpm, No load speed will drop to 500 rpm .
Flow	L: 0.42 ltr/min M: 0.65 ltr/min H: 0.86 ltr/min Ⓜ: 0.86 ltr/min
Weight of drill	PUMP1.5 kgs Motor 2.32kgs(Have no battery)
Battery Model No.	B18B (4.0Ah)
Charger Model No.	C189

Technical Data

勁猛系列是一款強力，多功能型的高壓注射設備。搭配20V強力充電式衝擊動能，最高壓力可達700bar (10000 psi)。

◎四段按鍵式速度控制，操作簡便。充電式衝擊動能，體積小、出力強勁、扭力可達連續 650Nm 瞬間1000 Nm。

◎配有二顆 4.0Ah 鋰電池，可以長時間連續使用，無線操作更方便。

◎高壓幫浦與充電式衝擊起子採用活動式連結。衝擊起子可以獨立使用。

◎搭配鑽頭或者套筒可以鑽孔或鎖緊注射針，作為電鑽使用。

◎整機(含電動衝擊起子)全部台灣製造，所有與灌注原料接觸的元件都採用耐酸鹼性材質。

對於原料使用的限制更少，耐用度更高！

◎直軸驅動，送料迅速，減少原料與空氣接觸的時間，讓填充料可以更迅速到達裂縫，減少工時。

◎無刷式電動衝擊起子，省電壽命。

◎結構輕巧，整機重量僅 6.6 公斤。攜帶方便，無須另外接電，適合各種工作地點都可以使用。

最大扭力	瞬間最大扭力	心軸尺寸	衝擊次數/分鐘	重量
650 Nm	1000Nm	1/2" (12.7mm)	L: 1200 次/分, M: 1600 次/分 H: 2400 次/分	2.32 kgs(5.10 lbs)
四段變速：無附載轉速 L: 0-900 rpm, M: 0-1200 rpm, H: 0-1900 rpm, R: 0-1900/0-500 rpm				

註一：操作時保持順時針方向



4 speed controls button
L:0-900rpm
M:0-1200rpm
H:0-1900rpm
R:0-1900/0-500rpm



Forward/Reverse level : (註一)



Charger DC4.0AH
MODEL NO:B18B

MODEL : TD7955



4.0Ah Battery
110V-240V
MODEL NO:C189

Startup procedures

操作方式：

勁猛高壓灌注幫浦動力來自四段變速無刷馬達。每一段的變速都可能無段控制轉速。無刷馬達帶動凸輪，透過凸輪推動柱塞幫浦吸入灌注原料且加壓到噴嘴。

注意：在使用時，加壓過程中，請確保馬達始終保持順時鐘方向旋轉。

注意：在使用時，請緊握電鑽的手把，並固定幫浦，輕按電鑽開關。以低速開始運轉。以避免後座力過大。

注意：建議使用壓力 220bar (3200 psi)，如若需更高壓力使用，請向供應商諮詢。

PROCEDURE:

1. Remove all system components from the box for assembly.
2. Remove all protective caps from inlet and outlet connections of pump if present.
3. Attach hopper to the inlet adapter. Tighten securely.
4. Attach high pressure hose to the compression valve. Tighten.
5. Connect on the other side of high pressure hose the packer or similar. Tighten.
6. Connect drill to the driven shaft cylinder.
7. Double check all connections, the unit is now ready for flushing.

Note: The pump contains a preservative oil when you receive it, that may drip from the various connections when the protective caps are removed.

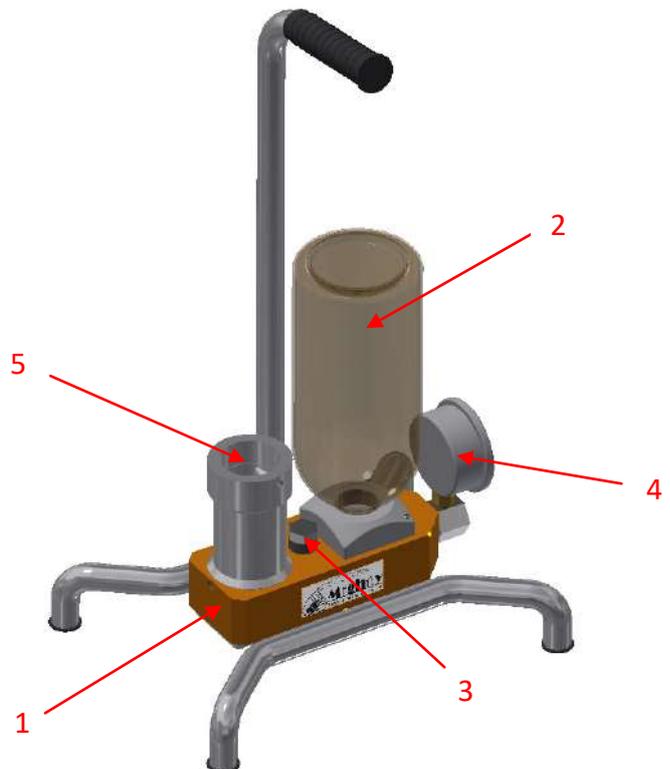
Pos. Description:

1. Pump Body
2. Gravity Hopper
3. Oil filler
4. Pressure gauge
5. Drill connection



WARNING: HIGH PRESSURE SYSTEM

The pump works in high pressure. Never adjust the pressure over the maximum suggested (220 Bar). Higher pressure can cause damage in the components and injury to the operator if not properly operated.



General Cautions&Cleaning instruction

高壓注意:

1. 勁猛高壓灌注幫浦，工作壓力極高。在沒有安全保護的狀態下請勿操作使用。
2. 正常工作壓力請勿操過 220 bar。除非相關配件經過認定可以承受更高壓力方可從事超高壓作業。
3. 高壓灌注的操作人員必須徹底了解幫浦的操作特性。並禁止非作業人員靠近作業區。

Startup procedures :

Whenever the pump is to be used, it must be pre-pared for the type of material to be used. This requires the unit to be flushed out with an appropriate solvent. Incorrect flushing can cause gumming of the valves and priming problems.

Unit priming and fluishing:

1. Check that all hose, hopper and all connections are tight.
2. Plug drill into correct power source.
3. Switch on the drill to operate the pump
4. Operate the pump for 1 min for flushing out the preservative oil.
5. Switch off the drill once flushing is completed.

Now the system is ready to work with material.

Priming unit material:

Follow same procedure as steps 1 - 5 of “Priming and Flushing”, but instead using the coating. Then continue with the remaining steps as outlined below.

- ◆ Check the pressure of the material by the pressure gauge.
- ◆ Stop the drill when the maximum pressure is reached (220 bar) 3200psi.

Cleaning instructions :

As with all equipment, your system must be cleaned or it will not operate properly. Clogged valve is the most common.

cause of problems. If followed, these guidelines will insure trouble free performance from your sprayer. CAUTION: Clean with proper cleaner.

CLEAN-UP:

To get the best use and longest life from your system, it is very important to clean it out properly. The procedure is simple and is very similar to the flushing procedure performed earlier. Cleaning and flushing would also be required when changing type of coating. Follow “Priming and Flushing procedures” using the proper cleaner.

Long term stocking:

If the system will not be used for long time, we suggest to flush it out with an hydraulic oil. This will prevent that ball and spring stuck

General Cautions:

1. Always follow safety precautions and warnings printed on paint container.
2. Only use accessories supplied by the manufacturer. User assumes all risk and liability when using spray guns, hoses or other parts not complying with minimum specification and safety devices
3. Inspect hoses before each use. Never use a damaged hose. High pressure in hoses with wear, leaks or splits may cause the hose to rupture and cause serious personal injury. Never try to stop or deflect leaks with any part of your body.
4. Use extreme caution when cleaning injector packer. DO NOT try to wipe off build up around the packer before following shut down procedure. Follow the Shutdown Procedure, then follow the spray tip manufacturer's instructions for removing and cleaning packers.
5. Do not pull on hoses to move equipment, DO NOT kink or bend the hose sharply.
6. Keep children or anyone not familiar with high pressure systems away from equipment and work area.
7. Conductive metal containers must be used when flushing flammable fluids through the system. Always flush at low pressure with packers removed. A metal part of the spray gun must be held firmly against the grounded metal pail when flushing or relieving pressure from the gun.
8. It is forbidden the use of the system for dispensing flammable or highly toxic like gasoline, herbicides, pesticides.



Injection Hazard

High Pressure Painting can cause serious injury if the spray penetrates the skin. Do not point the lance at anyone or any part of the body. Never put your hand, fingers or body over the material output. Gloves and clothing do not necessarily offer any protection either. Close the dump valve in locked position when not spraying. In case of penetration seek medical aid immediately!

◆ **Note to physician:** Injection into skin is a serious traumatic injury. It is important to treat the injury surgically as soon as possible. Do not delay treatment to research toxicity. Toxicity is a concern with some exotic coatings injected into the blood stream. Consultation with a plastic surgeon or reconstructive hand surgeon may be advisable. Be prepared to tell the doctor what fluid was injected.

Description of symbols

The signs and symbols used in this manual have the following meaning:

NOTE : marks a section of text which is especially relevant to safety. Special attention should be paid to this section and its contents strictly observed.

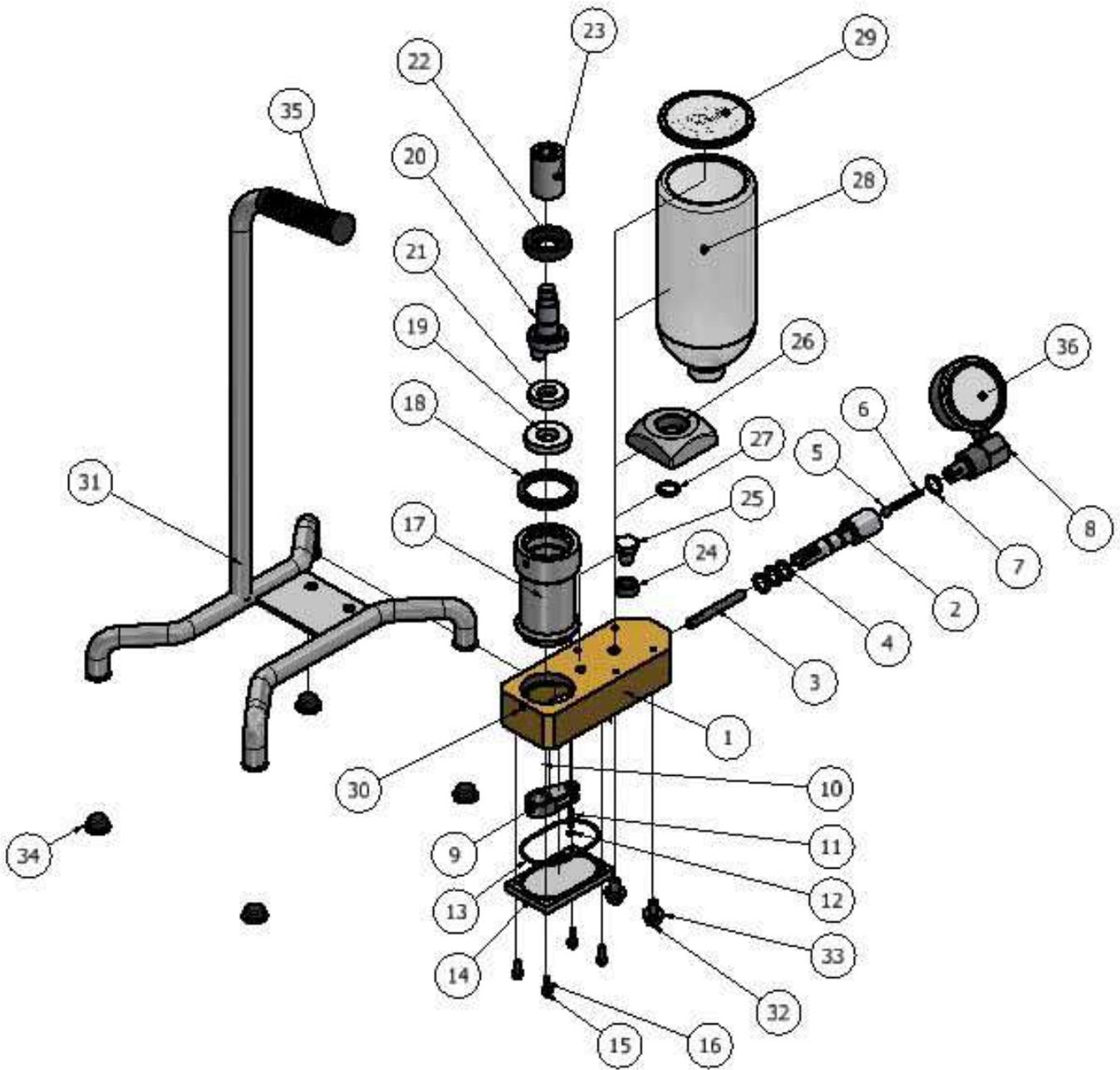
	<p>WARNING: marks a situation which could be dangerous. If not observed, death or very serious injury could result. Warning concerning electrostatic charging when spraying in metal containers. Take care to ground the spray gun through contact with the container in order to prevent a major static discharge.</p>
	<p>INJECTION HAZARD: marks a situation, where pressure is in the system. Do not point the gun at anyone or any part of the body.</p>
	<p>DANGER OF EXPLOSION: marks a situation, where there is danger of explosion. Observation of this information is absolutely essential.</p>
	<p>USE BREATHING PROTECTION: For health reasons, it is very important to pay attention to this warning.</p>
	<p>WEAR PROTECTIVE GLOVES To prevent burns, wear protective gloves with lower arm protection. Observation of this information is essential.</p>

Hfci V'Yg\ cc]b[

Ci f' d'fcXi W'g'UfY'W'fYZ ``miYghYX'UbX'H Yf'ei U]m]g'YI W'`YblžH i g'H Y[i b!`]Z'UbX']lg[ccX'dYfZ:fa UbW'`df]bW]dU`miXYdYbXg'cb'W'fYZ ``WYUb]b['UbX'a U]bhYbUbW'`

ÚÜUÓŠÒT Ù	ÔÆMÙÒÙ	ÜÒT ÒÖØÙ
Pump does not suction	a. The suction hole is clogged b. Compression valve clogged	a. Remove the hopper and clean the suction hole properly. b. Remove the compression body, ball and spring. Clean them properly or replace if necessary.
Pump not in pressure	a. Compression valve clogged b. High Pressure hose damaged	a. Remove the compression body, ball and spring. Clean them properly or replace if necessary. b. Replace it
Material does not flush out	a. High Pressure hose clogged	a. Replace it
Pressure gauge does not indicate pressure	a. Pressure gauge clogged or damaged	a. Replace it

Spareparts list



Spareparts list

Pos.	Description	Q.ty	Pos.	Description	Q.ty	Pos.	Description	Q.ty
1	M1-01-0020 PUMP BODY	1	12	M1-SEEGER	1	25	M1- FIXING SCREW M10	1
2	M1-05-0020 SLEEVE	1	13	M1- O-RING	1	26	M1-04-0030 HOPPER SUPPORT	1
3	M1-06-0020 MATERIAL PISTON	1	14	M1- 03-0020 COVER	1	27	M1- O-RING	1
4	M1-O-RING	3	15	M1- FIXING SCREW M4 x 16	4	28	M1-14-0010 GRAVITY HOPPER 1 LTR.	1
5	M1-BALL	1	16	M1- WASHER M4x16	4	29	M1-03-0030後蓋	1
6	M1-07-0010 SPRING	1	17	M1-04-0020 CYLINDER	1	30	M1- GRAIN M6	1
7	M1-O-RING	1	18	M1- O-RING	1	31	M1-01-0020腳架	1
8	M1-10-0010 COMPRESSION VALVE BODY	1	19	M1- LOWER BEARING	1	32	M1- FIXING SCREWM 10x16	2
9	M1-17-0010 ROD	1	20	M1-16-0020S HAFT	1	33	M1-WASHER M10	2
10	M1-BEARING, ROD	1	21	M1- LOWER BEARING	1	34	M1-腳套	4
11	M1-PIN	1	22	M1- BEARING WASHER	1	35	M1-橡膠把手	1
			23	M1-16-0035 DRIVE SHAFT	1	36	M1- PRESSURE GAUGE	1
			24	M1-13-0010 POM-WASHER	1			