

Instruction manual & spare parts list



NS-PRO 66



NS-PRO 28



NS-PRO 19



NS-PRO 19 STRAIGHT

**NS-PRO SERIES
AIR DRIVEN
NEEDLE SCALERS**

1. General Safety and Operation Instruction

1. Unpacking

When unpacking this product, carefully inspect for any damage that may have occurred during transit. Make sure any loose fittings, bolts, etc, are tightened before putting this product into service.

2. This product is a part of a high pressure system and the following safety precautions must be followed at all times along with any other existing safety rules.
3. Read all manuals included with this product carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
4. Only persons well acquainted with these rules of safe operation should be allowed to use the air tool.

Do not exceed maximum operation pressure of the air tool (6.2BAR/90 PSI).

The air tool could explode and result in death or serious personal injury.

5. Do not exceed any pressure rating of any component in the system.
6. Disconnect the air tool from air supply before changing tools or attachments, servicing and during non-operation.
7. Always wear safety glasses during operation.
8. Do not wear loose fitting clothing, scarves, or neck ties. Loose clothing may become caught in moving parts and result serious personal injury.
9. Do not wear jewelry when operation any tool. Jewelry may become caught in moving parts and result in serious personal injury.
10. Do not depress trigger when connecting the air supply hose.
11. Always use attachments designed for use with air powered tools.
Do not use damaged or worn attachments.
12. Never trigger the tool when not applied to a work object. Attachments must be securely attached. Loose attachments can cause serious injury.
13. Protect air lines from damage or puncture.
14. Never point an air tool at oneself or any other person. Serious injury could occur.
15. Check air hoses for weak or worn condition before each use. Make sure all connections are secured.

Release all pressure from the system before attempting to install, service, relocate or performs any maintenance.

16. Keep all nuts, bolts and screws tight and ensure equipment is in safe working condition.

17. Do not put hands near or under moving parts.

18. Air Hose

It is not recommended to install a quick coupler between the hammer and leader (whip) hose. Using fittings or air hoses which are too small can create a pressure drop and reduce the power of the tool. For most of the hammers, using 9.525 mm (3/8") I.D. fittings with 6.35 mm (1/4") NPT threads are recommended. For the others hammer, using 12.7 mm (1/2") I.D. with 9.525 mm (3/8") NPT threads are recommended. Most compressors are shipped with a short, 6.35 mm (1/4") I.D. hose. For proper performance and more convenience, use a 9.525 mm (3/8") I.D. hose. Hoses longer than 15.24 m (50 feet) should have a 12.7 mm (1/2") I.D.

Never carry a tool by the hose or pull the hose to move the tool or a compressor. Keep hoses away from heat, oil and sharp edges. Replace any hose that is damaged, weak or worn.

19. Storage

The scaling hammer must be lubricated before storing. Follow the air cylinder lubrication instructions with an exception to step 4. Only run the scaling hammer for 2 to 3 seconds instead of 20 to 30 seconds because more oil needs to remain in the scaling hammer when storing.

2. Particular Safety Instruction

1. Information of Noise Level

(1)The noise level at the operator's position is about:

Model No.:	A-weighted sound pressure level (L _{pf})	A-weighted sound power level (L _w)	Uncertainty K _{WA}
NS-PRO 19 STRAIGHT	100.0(dB)	110.2(dB)	3(dB)
NS-PRO 19	100.3(dB)	110.5(dB)	3(dB)
NS-PRO 28	98.7(dB)	108.9(dB)	3(dB)
NS-PRO 66	102.4(dB)	112.5(dB)	3(dB)

(2)Reference standard :ISO 15744.

(3)Always wear ear protectors during operation.

2. Information of Vibration Level

(1)The vibration level at the handle is about :

Model No.:	Vibration Level (m/s ²)	Uncertainty K (m/s ²)
NS-PRO 19 STRAIGHT	14.8	0.34
NS-PRO 19	8.9	0.19
NS-PRO 28	4.8	0.34
NS-PRO 66	18.9	0.30

(2)Reference standard: EN 28927-10.

3. Warnings

- (1)The power tools are not generally insulated for coming into contact with electric power sources.
- (2)The power tools shall not be used in explosive atmospheres unless specially designed for that purpose.
- (3) Special precautions shall be taken when working in explosive atmospheres.
- (4) Working with a percussive tool can generate dust which, depending on the material being worked on, could be harmful to the operator.
- (5)The inserted tool on heavy types of percussive non-rotary power tools, e.g. breakers, is exposed to heavy strains and can after a long period of use break due to fatigue.
- (6) The unexpected tool movement or breakage of inserted tool may cause injuries to the lower limbs, in particular the feet.
- (7) The unsuitable postures may not allow counteracting of normal or unexpected movement of the power tool. A working position shall be adopted which remains stable in the event of a break up of the inserted tool.
- (8) Holding the inserted tool by the free hand can be a source of vibration damage.
- (9) The power tools shall be isolated from the energy source before changing the inserted tool.
- (10) Pay attention to the risk of a whipping compressed air hose.
- (11) Rest after continuous operation.

3.

4. Instructions

- (1) On suitable postures to counteract the effects of a sudden break of the inserted tool.
- (2) Release the start and stop device in the case of an interruption of the energy supply.
- (3) Only lubricants recommended by the manufacturer shall be used.

5. Explanations Of Warning Signs Used For This Tool

		
The operator's instruction must be read before work starts	Hearing protection must be worn	Eye protection must be used or safety glasses worn

6. Application

Power tool driving a rotating spindle on which a bonded abrasive product is mounted.

7. The weight of this tools:

Model No.:	NS-PRO 19 STRAIGHT	NS-PRO 19	NS-PRO 28	NS-PRO 66
Weight	2.8 kg	2.6 kg	3.5 kg	5.9 kg

Note : If the weight of this tool exceeds 15 Kgs, the following attention shall be paid to :

- (1) Be sure that you can afford the weight.
- (2) Be sure to wear foot protection, to prevent the risk of impact due to the drop of tool.

3. Maintenance Instruction

1. Lubrication

Proper lubrication is the owner's responsibility. Failure to lubricate the air tool. Properly will dramatically shorten the life of the tool and will void the warranty.

This scaler requires lubrication before the initial use and before and after each additional use.

2. Scaler requires lubrication throughout the life of the tool and must be lubricated in two separate areas: the air motor and the scaling mechanism. Follow the outlined procedures.

3. Air Motor Lubrication

The motor must be lubricated daily. An air motor cannot be oiled too often.

Disconnect the hammer from the air supply before lubricating.

1. Disconnect the scaler from the air supply.
2. Turn the hammer upside down.
3. Simultaneously (at the same time), pull the trigger and pour a teaspoon of oil in the air inlet.
Then, push the forward and reverse button in both directions.

After an air tool has been lubricated, oil will discharge through the exhaust port during the first few seconds of operation. Thus, the exhaust port must be covered with a towel before applying air pressure. Failure to cover the exhaust port can result in serious injury.

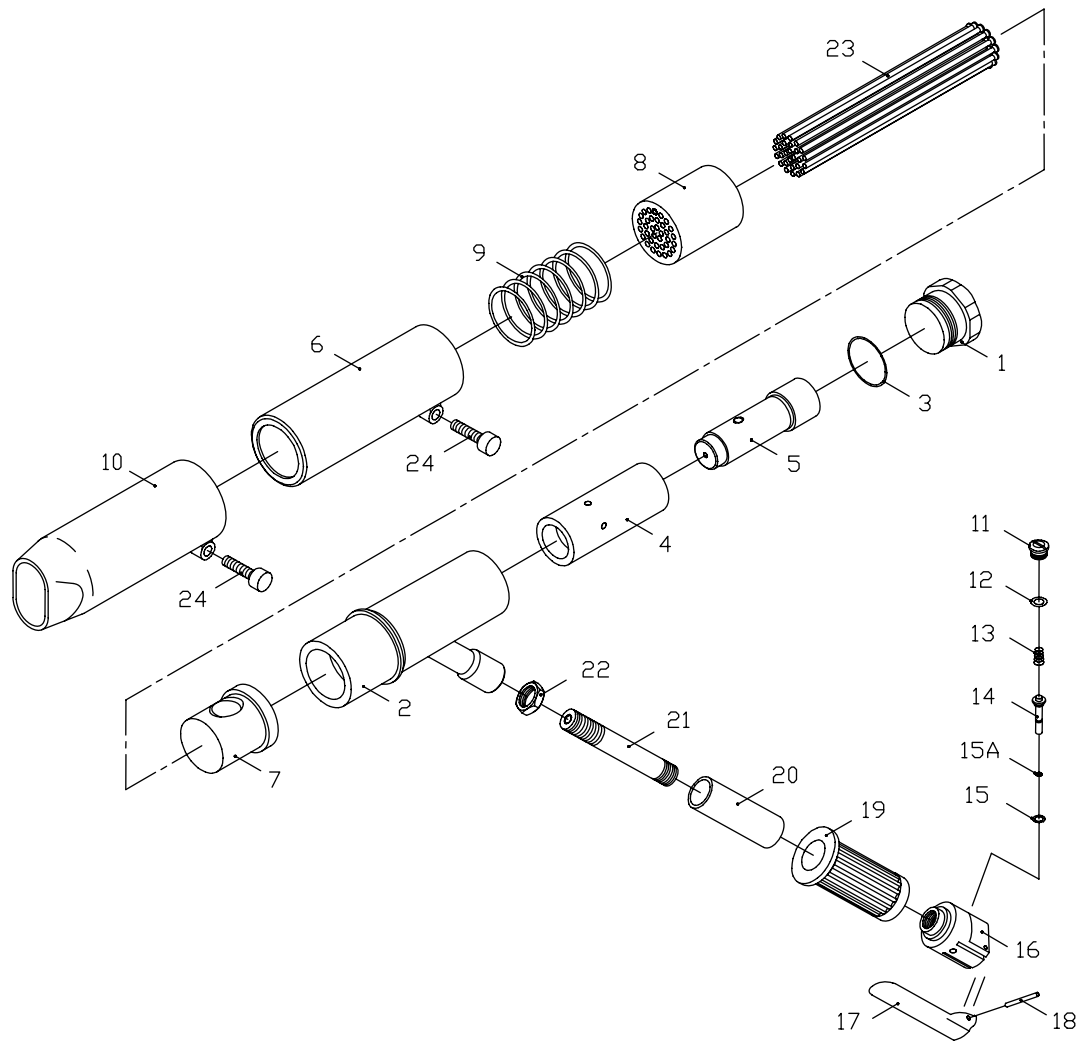
4. Connect the hammer to the air supply and cover the exhaust port with a towel.
Run the scaler, and oil will discharge from the exhaust port when air pressure is applied.
5. Scaling mechanism lubrication
The scaler should be lubricated monthly.

5.

General Troubleshooting Guide

Symptom	Possible Cause(s)	Corrective Action
Tool runs slowly or will not operate	1.Grit or gum in tool. 2.No oil in tool. 3.Low air pressure. 4.Air hose leaks. 5.Pressure drops.	1.Flush the tool with air tool oil, gum solvent, or an equal mixture of SAE # 10 motor oil and kerosene. Lubricate the tool after cleaning. 2.Lubricate the tool according to the lubrication instructions in this manual. 3.Adjust the compressor regulator to tool maximum while the tool is running free. 4.Tighten and seal hose fittings if leaks are found. 5-1.Be sure the hose is the proper size. Long hoses or tools using large volumes of air may require a hose with an I.D. of 12.7 mm (1/2") or larger depending on the total length of the hose. 5-2.Do not use a multiple number of hoses connected together with quick connect fittings. This causes additional pressure drops and reduces the tool power. Directly connect the hoses together.
Moisture blowing out of tool	1.Water in tank. 2.Water in the air lines/hoses.	1.Drain tank. (See air compressor manual). Oil tool and run until no water is evident. Oil tool again and run 1-2 seconds. 2-1.Install a water separator/filter. Note : Separators only work properly when the air passing through the separator is cool. Locate the separator/filter as far as possible from the compressor. 2-2.Install an air dryer.

UNITOR NS-PRO 66



SPECIFICATIONS :

* BLOW PER MINUTE ----- 2500 BPM
 * AIR PRESSURE ----- 90 PSI
 * AIR INLET ----- 1/4" PT(NPT)

* PISTON SIZE ----- 28×26×56
 * HOSE SIZE ----- 3/8" ID

REF NO.	PARTS NO.	DESCRIPTION	Q'TY	REF NO.	PARTS NO.	DESCRIPTION	Q'TY
1	752220	BODY CAP	1	14	752235	VALVE STEM ❶	1
2	752221	BODY	1	15	752236	"O" RING (d4.8×W1.9) ❶	1
3	752222	CAP "O"RING	1	15A	752237	"O" RING (d2.0×W1.5) ❶	1
4	752223	CYLINDER	1	16	752238	VALVE BODY	1
5	752224	PISTON	1	17	752239	TRIGGER	1
6	752225	NEEDLE COVER ❷❸❹	1	18	752240	SPRING PIN (Ø3×24.5)	1
7	752226	DRIVER ❷❸❹	1	19	752241	RUBBER HANDLE GRIP	1
8A	752227	NEEDLE HOLDER 4MM ❹	1	20	752242	HANDLE TUBE	1
##8B	752228	NEEDLE HOLDER 3MM ❸	1	21	752243	CENTER TUBE	1
##8C	752229	NEEDLE HOLDER 2MM ❷	1	22	752244	NUT	1
9	752230	SPRING ❷❸❹	1	23A	728774	NEEDLES 4MM	35
10	752231	NEEDLE COVER ❷❸❹	1	##23B	728766	NEEDLES 3MM	49
11	752232	VALVE SCREW ❶	1	##23C	728758	NEEDLES 2MM	66
12	752233	"O" RING (d7.8×W2.5) ❶	1	24	752245	CAP HAND SCREW ❷❸❹	2
13	752234	TRIGGER SPRING ❶	1				

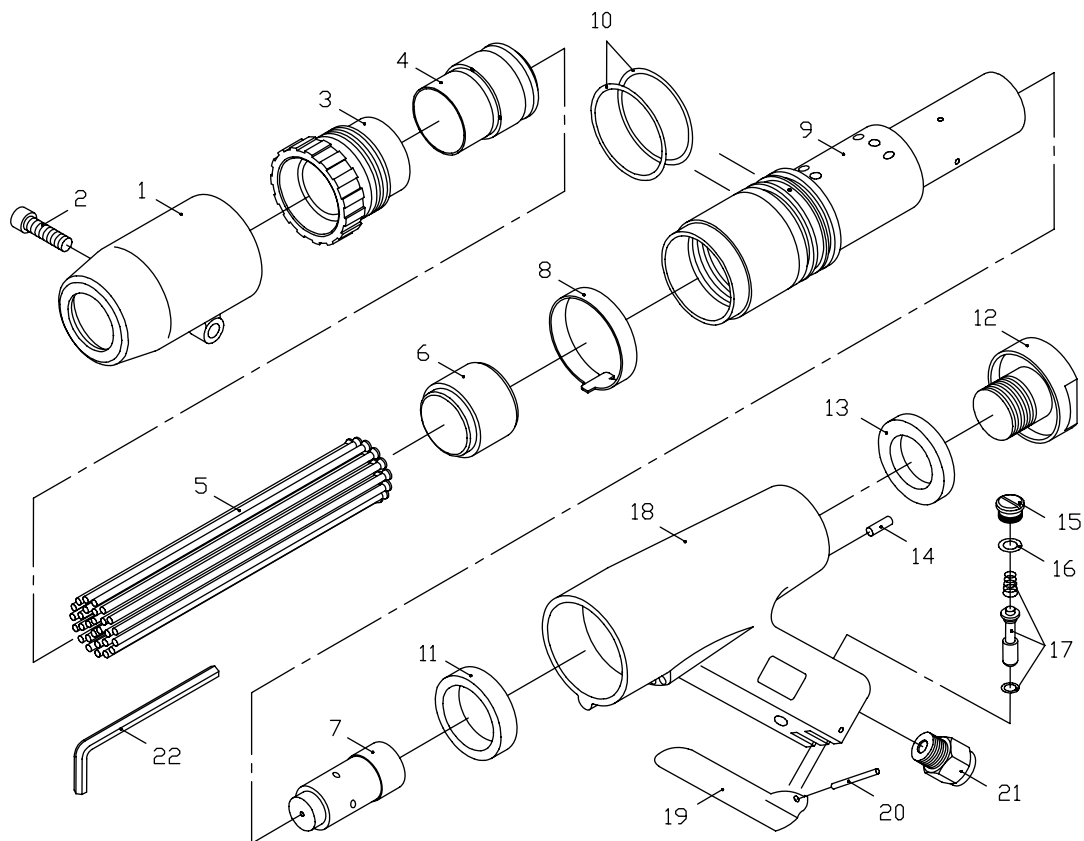
Optional Parts

400 722108

To get maximum performance and life of your tool, replace the whole set of parts included in the Spare part kits:

- ❶ Throttle overhaul kit 722694
- ❷ 2mm needle overhaul kit 722728
- ❸ 3mm needle overhaul kit 722710
- ❹ 4mm needle overhaul kit 722702

UNITOR NS-PRO 28



SPECIFICATIONS :

* BLOW PER MINUTE ----- 3500 BPM
 * AIR CONS. ----- 12 CFM
 * AIR PRESSURE ----- 90 PSI
 * AIR INLET ----- 3/8" PT(NPT)

* PISTON SIZE ----- 28×26×56
 * WIGHT ----- 3.5 KG
 * HOSE SIZE ----- 3/8" ID

REF NO.	PARTS NO.	DESCRIPTION	Q'TY	REF NO.	PARTS NO.	DESCRIPTION	Q'TY
1	752113	FRONT TUBE ②③④	1	10	752175	O-RING (d50.39×W3.53) ⑤	2
2	752170	HEAD BOLT (M8×25L) ②③④	1	11	752176	FRONT WASHER	1
3	752171	STOP RING ⑤	1	12	752177	REAR BOLT ASS'Y ⑤	1
4A	752121	NEEDLE SUPPORTER (3 MM) ③	1	13	752178	REAR WASHER	1
##4B	752139	NEEDLE SUPPORTER (4 MM) ④	1	14	752179	CYLINDER LOCK PIN	1
##4C	752172	NEEDLE SUPPORTER (2 MM) ②	1	15	752180	VALVE CAP ①	1
5A	728766	NEEDLE (Ø3 X 180MM)	28	16	752181	O-RING (d7.6×W2.62) ①	1
##5B	728774	NEEDLE (Ø4 X 180MM)	14	17	752182	THROTTLE VALVE ASS'Y ①⑤	1 SET
##5C	728758	NEEDLE (Ø2 X 180MM)	66	18	HOUSING	(not supplied as spare)	1
6	752147	THROTTLE ANVIL ②③④	1	19	752183	THROTTLE LEVER	1
7	728642	PISTON	1	20	752184	SPRING PIN (Ø3X28L)	1
8	752173	SAFETY BAND ②③④⑤	1	21	752185	REDUCER	1
9	752174	CYLINDER	1	22	WRENCH	6mm (not supplied as spare)	1

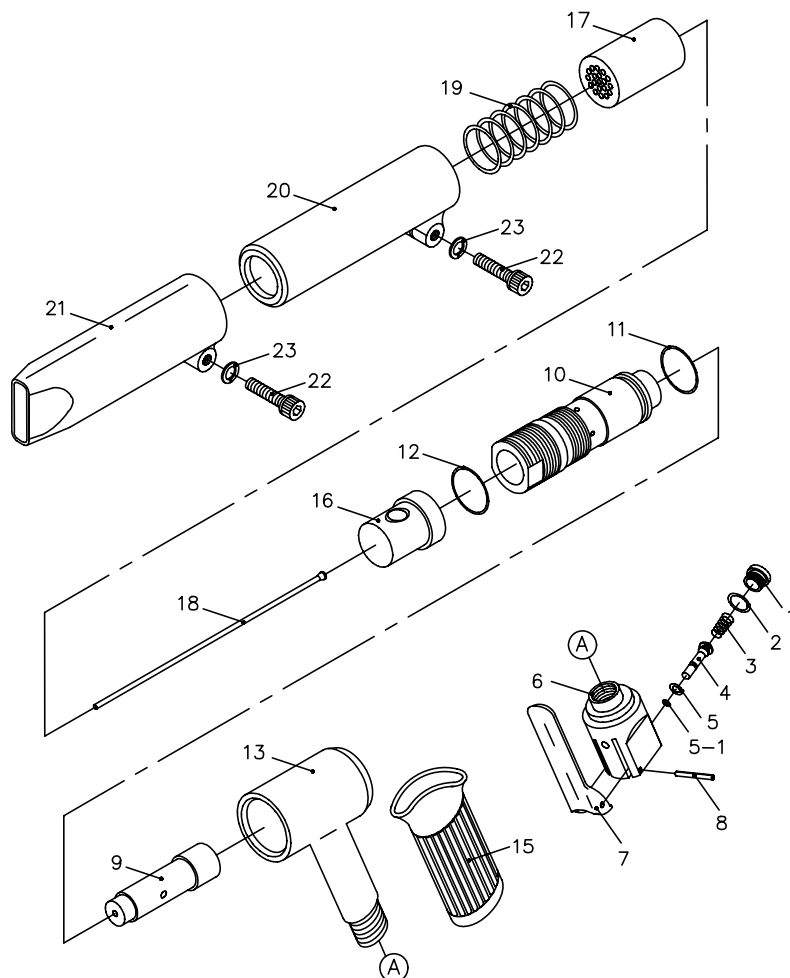
Optional Parts

400 722025

To get maximum performance and life of your tool, replace the whole set of parts included in the Spare part kits:

- ① Throttle overhaul kit 722983
- ② 2mm needle overhaul kit 728634
- ③ 3mm needle overhaul kit 722991
- ④ 4mm needle overhaul kit 728626
- ⑤ General overhaul kit 740308

UNITOR NS-PRO 19



SPECIFICATIONS .

* BLOW PER MINUTE ----- 3000
 * STANDARD NEEDLES --- 3 MM×19 PC
 * AIR CONS. ----- 12 CFM
 * AIR PRESSURE ----- 90 PSI
 * AIR INLET ----- 1/4" PT(NPT)

* PISTON SIZE ----- 23.5×20×70
 * OPTIONAL NEEDLES --- 2 MM×29 PC
 * WIGHT ----- 2.7 KG
 * HOSE SIZE ----- 3/8" ID

REF NO.	PARTS NO.	DESCRIPTION	Q'TY	REF NO.	PARTS NO.	DESCRIPTION	Q'TY
1	752186	VALVE CAP ❶	1	13	752196	HOUSING	1
2	752187	"O" RING (d9.8×W1.9) ❶	1	15	752197	RUBBER HANDLE GRIP	1
3	752188	VALVE SPRING ❶	1	16	752105	ANVIL ❷ ❸	1
4	752189	VALVE STEM ❶	1	17A	750968	NEEDLE HOLDER (3 MM) ❸	1
5	752190	"O" RING (d4.8×W1.9) ❶	1	##17B	750950	NEEDLE HOLDER (2 MM) ❷	1
5-1	752191	"O" RING (d2.5×W1.5) ❶	1	18A	728766	NEEDLE SET (3 MM)	19
6	752192	VALVE BODY	1	##18B	728758	NEEDLE SET (2 MM)	29
7	752193	THROTTLE LEVER	1	19	750984	SPRING-COMPRESSION ❷ ❸	1
8	752194	SPRING PIN (Ø3×24L)	1	20	750976	INTERMEDIATE TUBE ❷ ❸	1
9	722579	PISTON	1	21	728857	FRONT TUBE ❷ ❸	1
10	752195	CYLINDER	1	22	752198	CAP HEAD SCREW ❷ ❸	2
11	722595	"O" RING (d25.7×W3.5)	1	23	752199	WASHER (5/16") ❷ ❸	2
12	722595	"O" RING (d25.7×W3.5)	1				

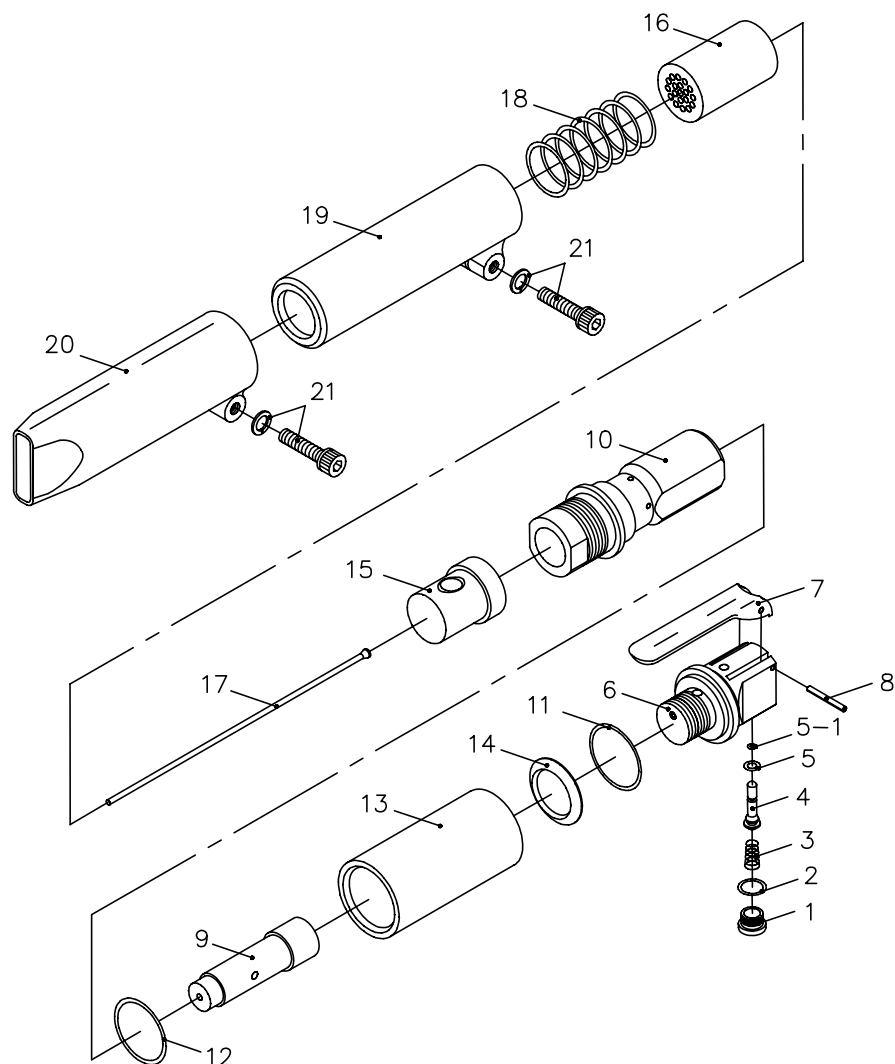
Optional Parts

400 722033

To get maximum performance and life of your tool, replace the whole set of parts included in the Spare part kits:

- ❶ Throttle overhaul kit 722520
- ❷ 2mm needle overhaul kit 722561
- ❸ 3mm needle overhaul kit 722553

UNITOR NS-PRO 19 STRAIGHT



SPECIFICATIONS :

* BLOW PER MINUTE ----- 3000 BPM
 * AIR CONS. ----- 12 CFM
 * AIR PRESSURE ----- 90 PSI
 * AIR INLET ----- 1/4" PT(NPT)

* PISTON SIZE ----- 23.5×20×70
 * WEIGHT ----- 2.8 KG
 * HOSE SIZE ----- 3/8" ID

REF NO.	PARTS NO.	DESCRIPTION	Q'TY	REF NO.	PARTS NO.	DESCRIPTION	Q'TY
1	752200	VALVE CAP ❶	1	12	752210	"O" RING (d32.0×W2.5)	1
2	752201	"O" RING (d9.8×W2.4) ❶	1	13	752211	PISTON SLEEVE	1
3	752202	VALVE SPRING ❶	1	14	752212	CLAMP WASHER	1
4	752203	VALVE STEM ❶	1	15	752213	ANVIL ❷ ❸	1
5	752204	"O" RING (d4.8×W1.9) ❶	1	16A	752214	NEEDLE HOLDER (3 MM) ❸	1
5-1	752205	"O" RING (d2.0×W1.5) ❶	1	##16B	752215	NEEDLE HOLDER (2 MM) ❷	1
6	752206	VALVE BODY	1	17A	728766	NEEDLE SET (3 MM)	19
7	752207	THROTTLE LEVER	1	##17B	728758	NEEDLE SET (2 MM)	29
8	752208	SPRING PIN (Ø3×24.3L)	1	18	752216	SPRING-COMPRESSION ❷ ❸	1
9	722678	PISTON	1	19	752217	INTERMEDIATE TUBE ❷ ❸	1
10	752209	CYLINDER	1	20	752218	FRONT TUBE ❷ ❸	1
11	722686	"O" RING (d36.0×W2.0)	1	21	752219	CAP HEAD SCREW (5/16"×1-1/4")	2

Optional Parts

400 722041

To get maximum performance and life of your tool, replace the whole set of parts included in the Spare part kits:

- ❶ Throttle overhaul kit 722645
- ❷ 2mm needle overhaul kit 722662
- ❸ 3mm needle overhaul kit 722660

Instruction manual & spare parts list

Fraser/surrey Gaspe Gros Caouna Halifax Hamilton Harbour Grace H Westminster Bc Pictou/halifax Pointe Aux Pic.quebec Port Alfred Port C Port Of Quebec Port Weller Powell River Prince Rupert Roberts Bank Sa halifax Squamish St. Catherines St.john's, Nfld St.romuald Stephens alleyfield Vancouver Victoria Weymouth Windsor Yarmouth Ancud / **Lima** Antofagasta Arica Caldera Concepcion Bay Cuzco Coronel Corral Huasco Las Ventanas Lirquen Lota Penco Puerto Montt Puerto Williams Punta Arenas Quintero San Antonio San Vicente Talcahuano Tocopilla Valparaiso Antilla Bahia Honda Banos Baracoa Cabanas Caibarien Cardenas Casilda Ceiba Hueca Cienfuegos Guantanamo Guayabal Havana Isabel De Sagua Manati Mariel Media Luna Moa Nicaro Niquero Nuevitas Pilon Puerto Padre Santiago De Cuba Sigloo **Genoa** Finn Tanamo Tunas De Zaza Vita Balao Esmeraldas Guayaquil La Libertad Manta Puerto Bolivar Freeport/bahamas Guam Mahdia Acapulco Campeche Ciudad Del Carmen Coatzacoaloos Cozumel Dos Bocas Ensenada Guaymas La Paz Lazaro Cardenas Mazatlan Progreso Puerto Vallarta Salina Cruz Tampico Topolobampo Tuxpan Vera Cruz Bonaire Bullen Bay Curacao Aguadulce Almirante Armuelles Bahia Las Minas Balboa Cristobal Manzanillo Int.term. Vacamonte Callao Chimbote Ilo Matarani Paita Pisco Guayama Guayanilla Mayaguez Ponce San Juan Yabucoa St. Vincent Chaguaramas La Brea Point Fortin Point Lisas Pointe-a-pierre Port Of Spain Tembladora Aberdeen,wa Alameda Albany,n.y. Alexandria, Va Algiers Point Amelia Anacortes, Wa Anchorage,ak Annapolis,md Antioch Aransas Pass Tx Astoria, Or Baltimore Baton Rouge Bayonne Baytown Beaumont Bellingham, Ma Bellingham, Wa Benicia, Ca Boston, Ma Bridgeport Bridgeport, Conn Brooklyn, Ny Brownsville Tx Brunswick Brunswick, Ga ucksport,me Buras Camden Camden, Nj Cameron La Chalmette Charleston, Sc Cheasapeake Chester Chicago Claymont Convent Coos Bay, Or Corpus Chr.tx Crockett Darrow Davant Deer Park Delaware City Destrehan Donaldsonville Dutch Harbor, Ak Eastport, Me Eureka Everett, Wa Fairless Hills Famausta Ferndale wa Freeport Tx Galveston Tx Garville Geismar Georgetown, Sc Gloucester, Nj Good Hope Gramercy Grand Isl aii Hoquiam, Wa Houma Jacksonville Kalama Kalama, Wa Kenai Key V a Loop Terminal Los Angeles Manchester, Wa Manhattan, Ny N ad City, Nc Morgan City Morrisville, Pa Myrtle Grove Naples Nederland Tx New Haven, Conn New Iberia New London New Orleans New York Newington, Nh Newport News, Va Newport, Or Newport, Ri Nikiski Norco Norfolk Oakland Olympia, Wa Orange, **Rotterdam** Tx Palm Beach Panama City, Fl Pasadena Pascagoula, Ms Paulsboro, Nj Pennsauken, Nj Pensacola, Fl Petaluma Philadelphia Piney Point, Md Pittsburg Plaquemine Point Comfort Tx Port Allen Port Angeles, Wa Port Arthur Tx Port Canaveral Port Everglades Port Hueneme Port Isabel Tx Port Manatee, Fl Port Neches Tx Port Royal, Sc Port St. Joe, Fl Port Townsend, Wa Portland, Me Portland, Or Portsmouth Portsmouth, Nh Providence, Ri Queens, Ny Redwood City Reserve Revere, Ma Richmond Richmond, Va Sacramento Salem Salem, Ma San Diego San Francisco Sandwich, Ma Savannah Searsport, Me Seattle Seward Sparrows Point St.petersburg, Fl St.rose Staten Island, Ny Stockton Tacoma, Wa Tampa Texas City The Bronx, Ny The Loop Valdez Vancouver, Wa Venice West Palm Beach Westville, Nj Wilmington, Ca Wilmington, De **Houston** Wilmington,nc Yonkers, Ny Yorktown, Va Fray Bentos Jose Ignacio Montevideo Nueva Palmira Amuay Bay Bajo Grande Cumarebo El Palito El Tablazo Guanta Guaranao Jose Bay La Guaira La Salina Maracaibo Pertigalete Puerto Cabello Puerto La Cruz Puerto Miranda Puerto Ordaz Punta Cardon Punta De Palmas Punto Fijo San Lorenzo, Vz St.croix Aeroskobing Assens Bagenkop Bogense Copenhagen Ebeltoft Enstedvaerket Havn Esbjerg Fakse Ladeplads Havn Fredericia Frederiksund Frederiksvaerk Fredrikshavn Faaborg Gedser Great Belt Grenaa Graasten Gulfhavn Haderslev Halsskov Hanstholm Helsingor Hirtshals Hobro Holbaek Horsens Kalundborg Kertminde Koge Kolding Korsor Lemvig Mariager Marstal **Oslo** Middlefart Naestved Naskov Nyborg Nykobing Falster Nykobing Mors Nykobing Skjaelland Odense Orehoved Falster Randers Ronne Rudkobing Sakskobing Skaelskor Skaerbaek Skagen Skive Sonderborg Stege Stigsnaesvaerkets Havn Svendborg Studstrupvaerkets Havn Thisted Thorshavn Vejle Vordingborg Aabenraa Aalborg Aarhus Kunda Loksa Muuga Paldiski Paljassaare Parnu Tallinn Dalsbruk Hamina/fr.havn Hanko/hangoe Helsinki Ingaa/inkoo Jakobstad Kalajoki Kantvik Kaskinen/kasko Kemi Kemio Korkkola/karleby Kotka Koverhar Kristinestad Lappvik Lovisa Mariehamn Merikarvia Nystad Naantali Oulu Pargas Pori Porvoo/borgaa Rauma Raahe/brahestad Skoeldvik Tammisaari Teijo Tolkis Torneaa Turku Valkom/valko Vaasa Akureyri Isafjordur Reykjavik Arklow Aughinish Bantry Cork Drogheda Dublin Dun Laoghaire Dundalk Foynes Galway Limerick Moneypoint Ringaskiddy Tarbert Waterford Liepaja Mersrags Riga Roja Salacgriva Skulte Ventspils Butinge Klaipeda Agnefest Alta **Piraeus** Arendal Asker Askoy Aukra Aure Averoe Bergen Berlevaag Bodo Boemlo Brattvag Breivika Brevik Baatsfjord Dirdal Drammen Dusavik Egersund Eide Elnesvaagen Eydehavn Fagerstrand Farsund Finnsnes Flekkefjord Floroe Flaam Fosnavaag Fraena Fredrikstad Frei Gamvik **Genoa** Geiranger Gjemnes Glomfjord Gravdal Grimstad Gudvangen Halden Halsaa Hammerfest Harstad Haugesund Hellesylt Heroeya Hjelmeland Hoeyanger Holla Holmestrand Hommelvik Honningsvaag Horten Husnes Jelsa Jessheim Joerpeland Joessinghamn Kambo Karmoey Kirkenes **Singapore** Krageroe Kristiansand Kristiansund Kvinesdal Kyrksaeterora Kaarsto Larvik Leknes Lillesand Lyngdal Mandal Mehavn Mo I Rana Molde Mongstad Mosjoen Moss Muruvik Maaloey Namsos Narvik Nesset Odda Oelen Oersta Orkanger Porsgrunn Rafnes Randaberg Raubergvika Risoer Sandefjord Sandnes Sandnessjoen Sarpsborg Sauda Skien Skjervoe Slagen Slagentangen Smoela Soevik Sola Sorreisa Sortland Stavanger Stord Sture Sunndalsoera **Dubai** Surnadal Svelgen Svolvaer Tananger Tau Thamshamn Tingvoll Tjeldbergodden Toensberg Tofte Tomrefjord Tromsø Trondheim Tustna Tvedestrand Tyssedal Tysvaer Ulsteinvik Vadsoe Vardoe Verdal Vik Volda Aagotnes Aaheim Aalesund Aalvik Aardal i Ryfylke Aardalstangen Gdansk Gdynia Kolobrzeg Police Swinoujscie Szczecin Arkangelsk Baltiysk De Kastri Kaliningrad Kandalaksha Kavkaz Kronshtadt Lomonosov Murmansk Nakhodka Novorossiysk Primorsk Sakhalin Sakhalin Severomorsk St. Petersburg Svetlyi Taman Temruk Temryuk Tuapse Vladivostok Vostochniy, Port Vostochnyi Vyborg Bohus Brofjorden Falkenberg Gavle Gothenburg Hallstavik Halmstad Helsingborg Hoganas Holmsund Hudiksvall Iggesund Kalmar Karlshamn Karlskrona Karlstad Koeping Landskrona Lidkoping Lilla Edet Luleaa Lysekil Malmoe Mariestad Marstrand Munkedal Norrkoeping Norrsundet Norrtalje Nvnashamn **Rotterdam** Ornskoldsvik Oskarshamn Oxelosund Pitea **Shanghai** Simrishamn Skarhamn Skelleftehamn Skutskar Slite