



Product & Safety Information

Safety Comes First	225
Safety Guidelines	226
Recommended Air System	227
Selecting a Compressor	228

Maintaining Adequate Air Flow	229
Healthy Work Environment	230
Numerical Index of Tools	231



Continued Leadership In Portable Abrasive Power Tool Technology

www.dynabrade.com

Safety Comes First

Maximizing Value Through Proper Use and Care

General Safety Information

- Do not use Dynabrade® Abrasive Power Tools for anything other than their intended application.
- For best performance, use a recommended air line filter-regulator-lubricator to always maintain 90 PSIG (6.2 Bar), unless otherwise stated. Pressure should be checked at the tool inlet while the tool is running.
- Do not expose air tool to inlet pressure above 90 PSIG (6.2 Bar).
- Always use recommended air hose, fittings and couplers and inspect them for wear and damage and replace when necessary.
- On regular basis check free speed of power tool with tachometer to ensure proper functionality of tools.
- A tool with unusual sound and /or vibration must not be operated and must be inspected and repaired. Hand/wrist/arm injury may result from repetitive motion or prolonged exposure to vibration.
- A preventative maintenance schedule is recommended to insure the proper functionality of power tools.
- Never lubricate or clean tools with flammable or volatile liquids.
- Dynabrade® Power tool labels must be legible at all times. If not, reorder label(s) and replace.
- To prevent injury, always use eye, face, respiration, hearing and body protection while operating or in areas where abrasive power tools are being operated.
- Be sure that any loose clothing, hair and all jewelry is properly restrained.
- Keep hand and clothing away from working end of the power tool.
- Always work with firm footing, posture and proper lighting.
- Do not apply excessive force on a tool or apply "rough" treatment to the tool.
- Operate power tools with attention to the consistency of the work environment and the tool itself.
- Follow safety procedures posted in work area.
- Make sure that the work area is uncluttered, and visitors are at a safe range from the tools and debris.
- Use a vise or clamping device to hold work piece firmly in place.
- Electric Machines – Make sure proper electrical codes are followed, including safe wiring and proper grounding.

Accessories and Abrasives

- Tool RPM must never exceed accessory RPM rating. Check accessory manufacturer for details on maximum operating speed or special mounting instructions.
- Always disconnect power before changing accessories or making machine adjustments and repairs.
- The aluminum Dynaswivel® air line connector or similar accessories must never be used on percussion tools such as chippers and rammers.
- Do not use damaged, bent or severely worn accessories.
- When using any tool with an abrasive product, follow all safety guidelines of abrasive manufacturers.

Safe Operating Practices for Grinders and Sanders

- Every person involved in operating, repairing and/or supervising grinding machines or wheels should be familiar with the contents of ANSI B7.1.

- Never mount non-reinforced grinding wheels on any Dynabrade tool.
- If the speed is higher than the RPM marked on the tool, the tool must be serviced to correct the cause of the over speed condition before use.
- Always use required wheel guards. Never remove a wheel guard that has been specified for the machine. Damaged, bent and severely worn guards must be replaced.
- Improper mounting of grinding wheels is one major cause of grinding wheel failure. Each type of grinding wheel requires a different mounting method, spindle diameter and flange dimension.
- In every case, the Safety Code (ANSI B7.1) should be consulted for proper handling, storage, inspection and mounting information.
- All grinding wheels and mounting accessories should be closely inspected before installation and use.
- Protect accessories from exposure to water, solvents, high humidity, freezing temperatures and extreme temperature changes. Store accessories in protective racks or compartments to prevent damage.
- When using a new grinding wheel, or one that has been out of service for an extended period of time, the operator should start the machine under a steel workbench with proper wheel guard in place. It should be run for at least one minute. If the wheel is defective or improperly mounted, this is the time it will usually fail.
- Proper machine maintenance procedures are one of the most important aspects of safety in the use of abrasive wheels. Particular attention should be placed to those components or parts which can effect the speed (RPM) of a tool, such as governors on air grinders.

Machine Specifications

Machine specifications are believed to be accurate at time of printing. However, due to design changes, exact specifications of current tools may vary from the listed data.

It is our policy to test and measure our tools in a ready-to-use condition and to state the test results in industry-accepted terms. Dynabrade measures typical production tools using the recommended air hose size, 90 PSIG air line pressure measured at tool inlet, and all muffling and speed control mechanisms. Compromises to these real-use operating conditions can artificially enhance performance measurements.

For tool specifications listed in this catalog:

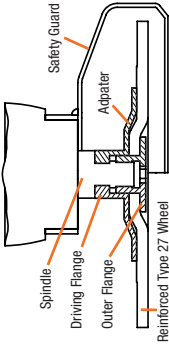
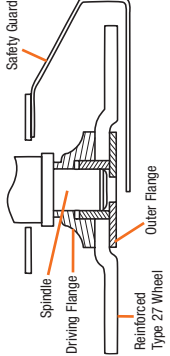
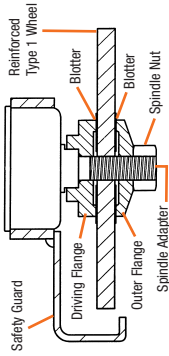
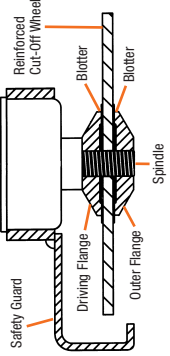
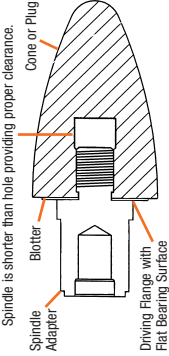
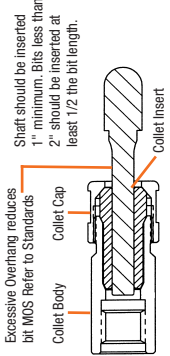
- **HOSE SIZE** denotes the recommended inside diameter of the air hose that should be used with the tool for maximum performance.
- **WEIGHT** includes all the parts required to run the tool except the airline, abrasive, or attachment.
- **RPM** is measured under no-load conditions.
- **HORSEPOWER** is an averaged maximum rating of production tools under ready-to-use conditions.
- Maximum air flow is measured in **STANDARD CUBIC FEET PER MINUTE (SCFM)** and is an averaged maximum rating, recorded at free speed on non-governed tools or at maximum horsepower on governed tools. Dynabrade adheres to this standard of measurement.

It is usually sufficient to directly compare the SCFM of the tool with the compressor's inlet CFM rating to determine how many tools a particular compressor will run. Depending upon the duty cycle of the tools, a compressor with a storage tank may allow it to run tools with a larger consumption than it's output.

- **SOUND LEVEL** is the sound pressure measurement according to the method outlined in ISO regulation ISO-15144.

Safety Guidelines

For Various Abrasive Tools

Air Tool Type	Mounting Features					Guard Requirements	Diagram Proper Mounting Procedure
	Abrasive Size	Backup Flange	Blotters	Front Flange	Additional Hardware		
Type 27 Depressed Center Wheel Grinders	All	Driving Flange, Requires a Special Adapter	—	1/3 of wheel diameter, may be smaller to just fit within wheel recess. Requires Special Boss Diameter to extend within Wheel bore	Adapter on rear side of wheel which extends beyond raised hub of wheel	180° operator protection Extend beyond Wheel Face Lip Feature required	
	Alternate Flanging for wheels less than or equal to Ø5" with Ø5/8" or Ø7/8" Centerbores	Driving Flange, Matching diameter to Front Flange	—	1/3 of wheel diameter, may be smaller to just fit within wheel recess. Requires Special Boss Diameter to extend within Wheel bore	—	180° operator protection Extend beyond Wheel Face Lip Feature required	
Type 1 Wheel Grinders	Up to 4"	Driving flange, Relieved Flange face, 1/3 Wheel Diameter minimum	Required on Both Sides of Wheel	Matching Diameters as Backup Flange	Retaining Nut Required	180° operator protection Extend beyond Wheel Face Lip Feature required	
Type 1 Cut-Off Wheel Tools	Up to 4"	Driving flange, Relieved Flange face, 1/4 Wheel Diameter minimum	Recommended	Matching Diameters as Backup Flange	—	180° operator protection Extend beyond Wheel Face Lip Feature required	
Cone or Plug Grinders	Wheel Ø 1 5/8 2 1 3 1 4 1-3/8 5 1-3/4 6 2	Min thickness 1/8 1/8 3/16 3/16 1/4 3/8	Required Between Flange and Abrasive	—	—	—	
Die Grinders	All	—	—	—	—	—	
NOTE: Intended for general reference use only.							Always refer to ANSI B7.1, B186.1 and EN 792 for detailed requirements.

Recommended Air System

Pneumatic Power Tools Have Several Advantages over Electric Power Tools

Pneumatic Power Tools Have Several Advantages over Electric Power Tools

One of the major advantages is durability, however, to make full use of that advantage some important steps must be followed.

A sufficient supply of compressed air is necessary

The air system must be able to deliver an adequate volume of air and maintain the rated operating pressure at the inlet of the tool.

Lubrication (oil) through the air supply is important

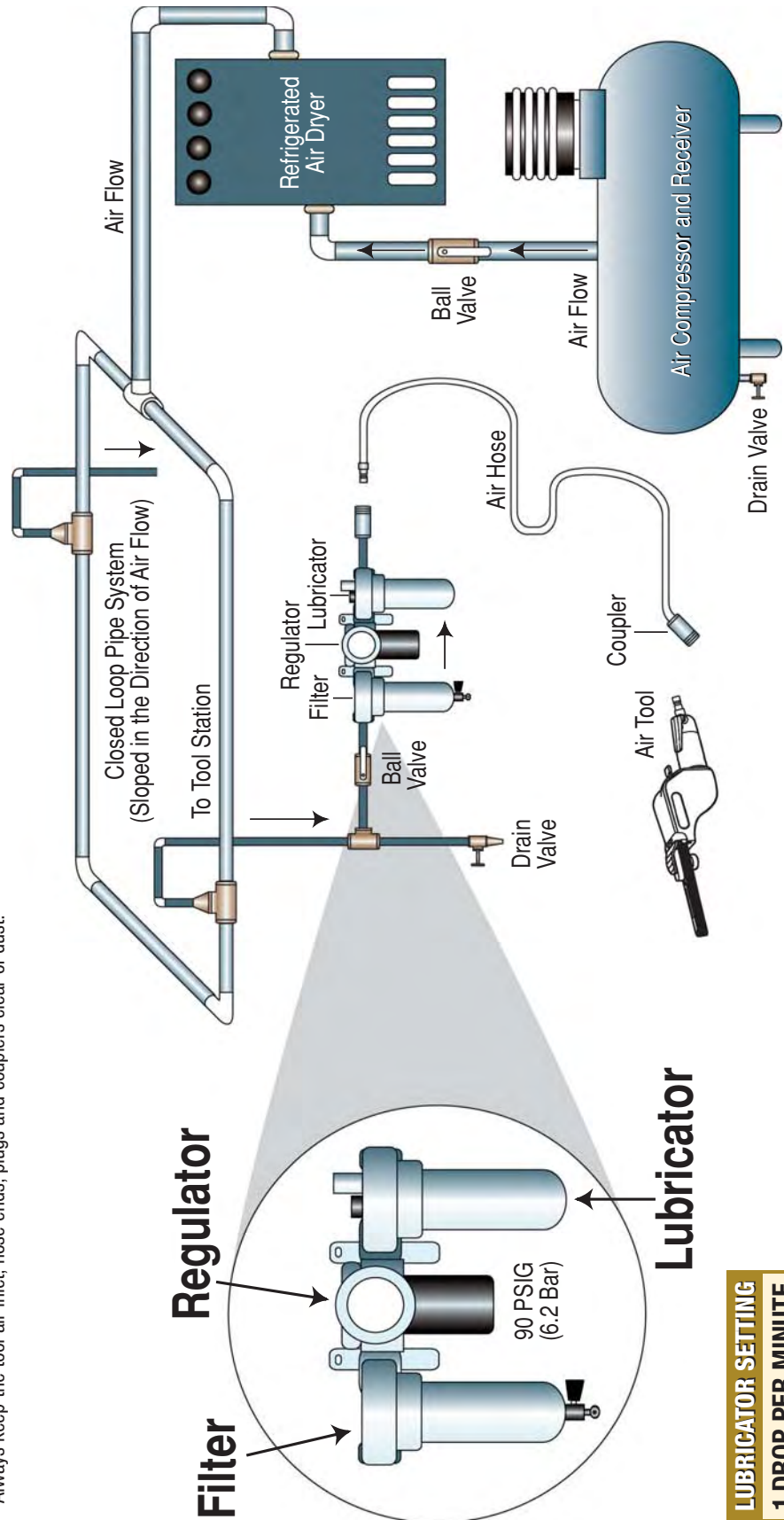
Supplying oil to rotary vane air motors reduces friction and wear of the moving parts and provides protection for steel components.

The supply of air must be free of contamination

The types of contamination that need to be eliminated are water (condensation produced by the temperature change while compressing the air), rust scale (rust particles produced inside iron pipes), and atmospheric dust, (dust that is pulled into the compressor from the work environment). Also, it is important to keep dust and debris from entering the air motor when the tool is disconnected from the air supply hose. Always keep the tool air inlet, hose ends, plugs and couplers clear of dust.

Filter-Regulator-Lubricator is Recommended

As an air tool manufacturer, Dynabrade recommends the use of a Filter-Regulator-Lubricator at each tool station. We also encourage the use of correctly sized accessories that will deliver a sufficient supply of air. Some examples of Dynabrade air tool accessories are Dynaswivel® airline connectors, quick disconnect fittings, and in-line blow guns. All of these accessories make for suitable additions to any compressed air system.



LUBRICATOR SETTING
1 DROP PER MINUTE
20 SCFM (566 LPM)

Selecting a Compressor

Guidelines for Matching Proper Compressor to Workplace

A) Compressor Type *Base on your PSIG (Bar) needs*

0 to 80 PSIG (5.5 Bar)— You may only need a single stage compressor.

80 to 250 PSIG (17.2 Bar)— You will need a two-stage compressor.

Two-stage compressors are recommended when tool use is continuous.

Note: Dynabrade air tools require operating air pressure of 90 PSIG (6.2 Bar).

B) Air Consumption

Determine the total demand SCFM (LPM). List the requirements for all equipment, tools and other air consumption variables (both continuous and intermittent air usage demands).

C) Compressor Horsepower (hp)

Use the determined total demand SCFM (LPM) and add approximately 20% for system variables.

Add _____% for (your) future growth.

If the above total equals less than 100 SCFM (2,832 LPM) divide this total by 4 to find the compressor hp.

If the total is over 100 SCFM (2,832 LPM) divide by 5 to find the compressor hp.

Example: System requirements = 165 SCFM (4,673 LPM) @ 100 PSIG (6.9 Bar)

$$165 \div 5 = 33 \text{ hp}$$

Resulting in a suggested compressor size:

30 hp to 40 hp compressor

D) Tank Size

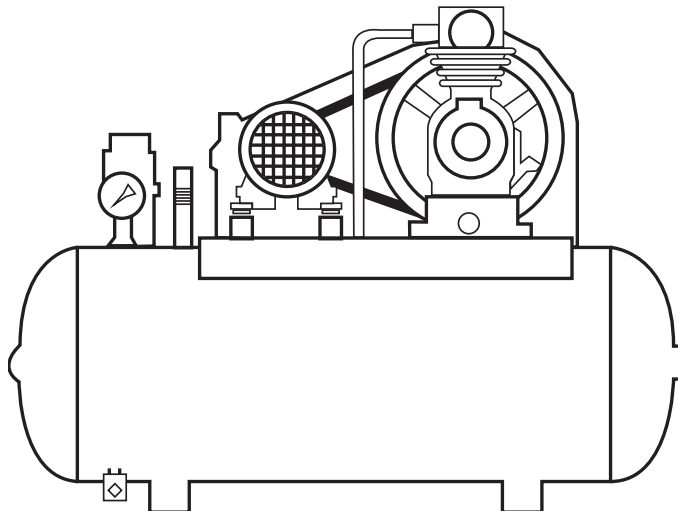
As a general rule, the larger the tank, the better the system. Use a larger tank for installations where large flows of short duration are needed.

Example: For a **5 hp** compressor use a **60 Gal. (227 L)**, **80 Gal. (303 L)** or **120 Gal. (454 L)** storage tank.

E) Controls

Stop-Start — The motor stops when the compressor unloads and starts again when the pressure in the receiver drops. Use a stop-start pressure switch control for a small system. (Compressors up to 15 hp.)

Continuous Run — Equipped with constant pressure control, loading and unloading as the supply of compressed air in the receiver drops or reaches a maximum.



Maintaining Adequate Air Flow

Prevent and Eliminate Air Supply Restrictions

Common Causes of Restriction

- The air supply hose is too long.
- The inside diameter (i.d.) of the hose is too small.
- The air connections or fittings have inside diameters that are too small.
- There are too many air connections or fittings being used.
- If an inline filter is being used, the unit may be too small or the filter element may be plugged.
- If an inline regulator is being used, the unit may be too small, not adjusted properly or defective.
- The air supply hose, air fitting, air tool inlet or air tool exhaust may be plugged.
- If the air tool has a speed regulator, it may be closed.

Air Hose Supply

- Use the air supply hose with the correct inside diameter as is recommended by the air tool manufacturer.
- Use the shortest air supply hose possible for the task being performed.
- Longer air supply hoses require larger inside diameters.
- Coiled air supply hoses appear much shorter than they actually are. When using a coiled hose, make sure that the inside diameter is large enough to compensate for the length (see chart below).

Air Supply Hose Recommended Chart

- Choose the correct Inside Diameter (I.D.) and Length of Air Supply Hose.

NOTE: To increase the length of air supply hose it will be necessary to increase the inside diameter of the hose.

Air Motor SCFM (Standard Cubic Feet per Minute)	Hose & Fitting I.D. Required	Recommended Length Air Supply Hose
22 SCFM (623 LPM)	1/4" (8 mm)	1' - 8' (0.3048 m – 2.44 m)
28 SCFM (793 LPM)	3/8" (10 mm)	1' - 25' (0.3048 m – 7.6 m)
35 SCFM (991 LPM)	3/8" (10 mm)	1' - 20' (0.3048 m – 6.10 m)
45 SCFM (1,274 LPM)	3/8" (10 mm)	1' - 10' (0.3048 m – 3.042 m)
73 SCFM (2,067 LPM)	1/2" (15 mm)	1' - 20' (0.3048 m – 6.10 m)

Flexible Air Supply Hoses *(Available from Dynabrade)*

- 3/8" I.D. with two male 1/4" NPT fittings. **Part No. 11292** - 8 feet (2.44 m) long
- 1/2" I.D. with one male and one female 1/2" NPT fitting. **Part No. 95870** - 5 feet (1.53 m) long

Air Supply Connectors/Accessories

- Compare airflow SCFM (LPM)



Common Plug Connector

25 SCFM (708 LPM)
.2010 in. (5.11 mm) I.D.



Dynabrade Plug Connector

76 SCFM (2,152 LPM)
.3070 in. (7.80 mm) I.D.

NOTE: All information is based on the size of the Inside Diameter @ 90 PSIG (6.2 Bar) in conjunction with the mating coupler.

How to Measure a Typical Plug

NPT
(National Pipe Thread)
is the thread size.
(i.e. 1/4" NPT)



Healthy Work Environment

The Term “Ergonomics” can Simply be Defined as the Study of Work

Ergonomics

Ergonomics helps adapt the job to the person, rather than forcing the person to fit the job. Adapting the job to fit the worker can help reduce ergonomic stress and eliminate many potential ergonomic disorders. The objective of ergonomics is to adapt the job and workplace to the worker by designing tasks, work stations, tools and equipment that are within the worker's physical capabilities and limitations. Major causes of many current ergonomic problems are technological advances such as more specialized tasks, higher assembly line speeds, and increased repetition, plus a lack of ergonomically designed technologies. Consequently,

worker's hands, wrists, arms, shoulders, backs and legs may be subjected to thousands of repetitive twisting, forceful or flexing motions during a typical workday. In many instances, some machine tools and work environment are often poorly designed, placing undue stress on the worker's tendons, muscles and nerves. Recognizing ergonomic hazards in the workplace is the essential first step in correcting the hazards and improving worker protection. The proper Dynabrade tool and work environment can help reduce the contributing factors associated with cumulative trauma disorders.

Dynabrade Tools Meet the Following High Quality Standards

Ergonomics and operator comfort have worked their way into each Dynabrade air tool design. Factors including, vacuum, vibration, insulation and noise (VVIN) are addressed at every integral design stage. VVIN is now critical to our research and development of new products as we continue to meet the challenging needs of the market place.

Vacuum

Airborne sanding particles can cause severe inflammation of the eyes and lung tissue, varying on the degree of exposure and the type of airborne contaminants involved. It is because of this danger that Dynabrade manufactures self-generated and central vacuum tools that direct airborne sanding particles away from the operator and the air motor, reducing contamination and the cause of risk to the operator.



Vibration

All hand-held machines transmit vibration to an operator's hand while in operation. Operators that work with vibrating machines for extended periods of time risk many types of injury. The most common are vascular injury, nerve injury, skeletal injury and joint injury. To help reduce vibration, we have built-in features such as composite housings and rubber overmolds, plus superiorly balanced motors and shafts. In addition, Dynabrade premium Sanding Pads are manufactured with unique one-piece hub assembly, ensuring lower vibration levels.

Insulation

Cold caused by pneumatic powered tools can cause a variety of work related injuries. Dynabrade manufactures a variety of tools with thermal-insulated housings that help prevent cold temperature transmission to the operator, reducing the risk of white finger disease and other related injuries.



Noise

High sound levels over an extended period of time can damage hearing. New enhancements to muffling systems, exhaust overhose protection and other tool design factors further reduce tool sound levels in the workplace.

Properly Designed Tool

An example of how a properly designed tool assists in reducing work injuries is Dynabrade's 7° Offset, Gearless Front Exhaust Die Grinder:

- Lightweight composite housing with anti-slip ring reduces cold air transmission to operator's hand.
- Handle is offset 7° for greater operator comfort and control.
- Gearless design reduces vibration.
- Smaller collet design reduces excessive run-out and reduces vibration.
- Low profile for greater operator control to work in hard to reach areas.



Unique Vacuum Design

Anti-clog design enhances vacuum pick-up and directs dust away from the air motor. Ask about our self-contained dust collection systems and vacuum shrouds.



Less Vibration

Composite base and integrated rubber over-mold create a non-slip feel and insulate from cold air.

Insulated Handle

Helps insulate from cold air... now standard on most tools.



Low Sound Levels

Rear exhaust muffler standard on many models.

Optional Overhose Assembly

May be used to further reduce noise levels by as much as 5 dB(A). Overhose redirects exhaust away from operator and workpiece.



Model Number	Page Number	Model Number	Page Number	Model Number	Page Number	Model Number	Page Number	Model Number	Page Number	Model Number	Page Number
11475	22	13520	32	50349	118	51412	55	51847	132	52276	105
11476	22	13521	29	50350	124	51415	55	51848	132	52277	105
11477	22	13523	32	50360	117	51430	87	52050	41	52278	105
11486	23	13525	33	51130	35	51446	90	52051	41	52280	104
12200	135	13531	29	51134	35	51447	90	52052	41	52281	105
12201	135	13535	33	51200	89	51448	90	52060	40	52282	105
12202	135	14000	8	51200	96	51449	90	52061	40	52283	105
12204	136	14010	8	51201	89	51450	87	52062	40	52286	106
12205	136	14200	25	51201	96	51451	87	52100	89	52289	106
12206	136	14300	26	51202	89	51454	87	52100	105	52290	106
12207	136	14303	26	51202	96	51455	87	52101	89	52293	106
12250	137	14306	26	51203	89	51458	88	52101	105	52294	106
13100	34	15003	16	51203	96	51459	88	52102	89	52295	106
13101	34	15006	16	51204	89	51470	88	52102	105	52297	106
13102	34	15300	18	51204	96	51472	88	52103	89	52298	106
13120	35	15302	18	51205	89	51474	78	52103	105	52315	99
13121	35	15400	19	51205	96	51476	78	52104	89	52316	99
13200	29	15401	19	51211	100	51479	78	52104	105	52317	99
13201	30	15420	19	51212	100	51600	88	52105	89	52318	99
13202	30	30200	138	51214	100	51601	88	52105	105	52319	99
13204	30	30303	138	51215	100	51610	89	52196	95	52320	99
13205	30	30304	138	51300	101	51612	59	52200	97	52325	97
13206	32	30336	138	51301	35	51613	59	52201	96	52326	97
13207	32	30337	138	51301	101	51614	90	52202	97	52327	97
13214	32	31600	138	51302	101	51700	93	52203	96	52328	97
13215	33	40320	11	51303	101	51701	93	52204	100	52331	100
13220	30	40321	11	51304	101	51702	93	52205	100	52333	100
13280	43	40324	11	51305	101	51703	93	52206	100	52335	100
13300	37	40326	11	51306	101	51704	93	52207	100	52337	100
13301	37	40330	13	51307	101	51705	93	52211	103	52341	97
13310	37	40335	11	51310	101	51706	93	52212	103	52345	97
13320	43	40352	12	51311	101	51707	93	52213	103	52373	125
13340	36	40353	12	51312	101	51708	93	52216	104	52374	125
13400	38	40381	11	51313	101	51730	93	52218	104	52376	125
13401	38	40590	13	51314	101	51731	93	52221	103	52377	125
13410	38	40591	13	51315	101	51732	93	52222	103	52378	125
13411	38	50000	99	51316	101	51733	93	52223	103	52379	125
13415	39	50001	99	51317	101	51740	93	52225	106	52380	125
13450	38	50002	99	51330	137	51742	93	52226	106	52400	111
13460	38	50003	99	51331	137	51750	93	52230	97	52402	111
13500	29	50004	99	51350	72	51753	93	52231	96	52405	111
13501	29	50005	99	51370	114	51756	93	52232	97	52410	113
13502	30	50302	121	51371	115	51800	99	52233	96	52412	113
13503	30	50303	123	51390	88	51801	99	52242	106	52413	113
13505	31	50304	117	51391	88	51802	99	52250	100	52415	113
13506	31	50306	122	51392	88	51803	99	52251	100	52420	127
13507	32	50307	117	51393	88	51804	99	52252	100	52430	128
13508	32	50308	122	51394	88	51805	99	52256	105	52431	128
13509	34	50320	116	51395	88	51810	93	52257	105	52434	127
13511	29	50321	116	51396	88	51811	93	52258	105	52435	127
13512	31	50324	114	51397	88	51812	93	52261	103	52436	129
13515	31	50340	122	51400	86	51813	93	52262	103	52438	129
13516	31	50345	117	51401	86	51820	111	52263	103	52439	127
13517	32	50346	122	51405	86	51821	111	52264	105	52450	118
13518	32	50347	118	51410	55	51822	111	52265	105	52451	118
13519	34	50348	124	51411	55	51846	132	52267	104	52452	124

