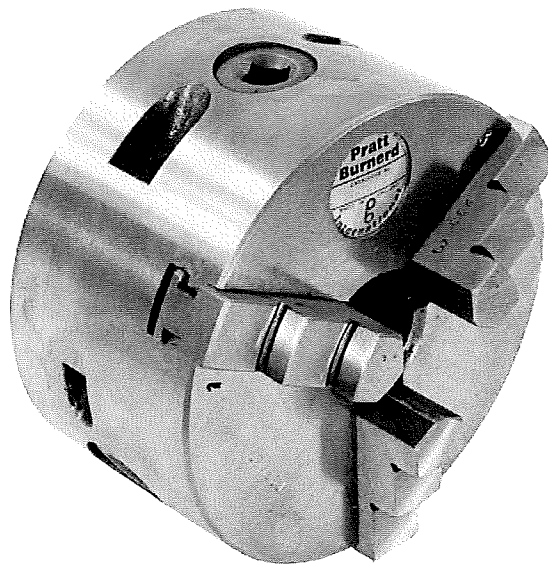


Pratt Burnerd International

600Group

Griptru 3 & 6 jaw Chucks

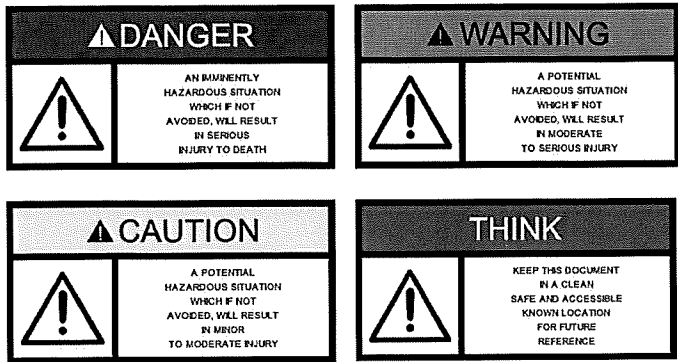
Ø80 – Ø315



The bodies are made from high strength nodular iron and all other components are made from high quality heat treated steel providing products with excellent technical characteristics and a long working life. These ranges of self centring chucks are suitable for use on both manual and CNC lathes. A comprehensive range of spindle mountings are available.

For ensuring the safe and correct use of this product, please read and pay attention to all the instructions and keep this manual so that it can be retrieved whenever needed.

1. Safety Alert Symbols



2. Qualified Operators



Pratt Burnerd clamping equipment may be set up, operated and maintained by those only who are trained to do so and/or have several years experience. Persons handling clamping equipment who do not possess the necessary training or experience run the risk of potential injury from the clamping motion and the forces generated.

3. Maximum Permitted Speed



The maximum permitted speed may only be run at maximum permitted actuation force and using a perfectly operating chuck. For maximum permitted speed ratings see page 4.

4. Exceeding The Permitted Speed



The centrifugal forces caused by excessive rotational speeds may result in individual parts of the clamping device becoming detached or the work piece being ejected, with the potential to cause harm to those in the close vicinity, considerable damage to the machine and the chuck itself.

The maximum speed and the operating force/pressures are embossed on the body and may not be exceeded for the reasons mentioned above.

5. Clamping Range



The maximum clamping range may not be exceeded, the lack of sufficient engagement between the clamping jaw and the component part could cause a negative effect on machining, work piece ejection or injury to the operator. For clamping ranges see page 4.

To check the chucking force, it is recommended using the Pratt Burnerd Radio Frequency Gripmeter.

For optimum performance the clamping force should be checked at regular intervals, the intervals are dependent on the application, for more information contact Pratt Burnerd.

6. Mounting



Clean any excess protective grease from the chuck and inspect for any damage which may have occurred in transit. Before mounting the chuck ensure the machine spindle is running true by checking the chuck locating faces both radial and axial directions using a dial indicator as shown in figure 1. The maximum error should not exceed 0.005mm full indicator movement (FIM). Also check the mounting faces are clean and undamaged. If the chuck is supplied with a separate mounting adaptor, this should match the machine spindle and should be secured to it using the fasteners provided. For torque values see page 4. Check the chuck mounting spigot and face for true running (Fig 2).

The adaptor should run within 0.01mm FIM on the Face and 0.02mm on the diameter. Wipe the chuck location faces clean and mount the chuck to the spindle and adaptor using screws provided. It is good practice to check the chuck's outside diameter and face for the true running (Fig 3). The chuck may be assessed for gripping accuracy (Fig 3) by using an accurate test bar gripped in the chuck and the readings compared with the particular chucks accuracy standard.

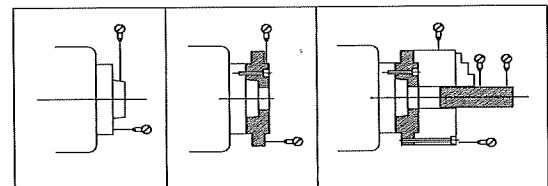


Figure 1

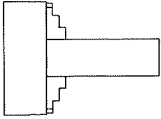
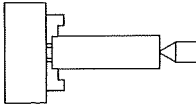
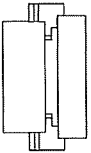
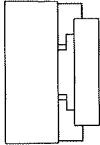
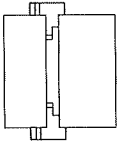
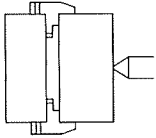
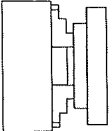

Figure 2

Figure 3

7. Operating

▲ WARNING

In order to ensure safe clamping of the work piece to withstand the machining forces occurring and prevent injury, the correct loading practices below should be adhered to:

Wrong	Right
<p>Work piece projected length too great relative to chuck size.</p> 	<p>Support Workpiece between centers.</p> 
<p>Chucking Diameter too great.</p> 	<p>Use a larger chuck.</p> 
<p>Workpiece too heavy and chucking step too short.</p> 	<p>Support between centers and extend chucking step.</p> 
<p>Chucking diameter too small.</p> 	<p>Chuck using greatest possible chucking diameter.</p> 

The illustrated examples do not cover all the possible dangerous situations. It is the responsibility of the user to recognize possible sources of danger and to adopt the necessary measures. Despite all precautionary measures, an element of risk can not be excluded

8. Maintenance

▲ WARNING

The reliability of the clamping equipment can only be ensured if the maintenance guidelines below are strictly observed. Failure to observe these instructions will result in loss of grip and could cause an accident.

- All chucks should be checked regularly for wear, cracks and accident damage, the following cause breakages and should be avoided:
 - Do not extend the crosspiece of the chuck key
 - Do not use a badly fitting operating key
 - Do not use the pinion socket to remove the chuck from the spindle.
 - Do not leave the key in the chuck when the lathe is started.
 - Do not start the lathe until all is clear. Collision between chuck and lathe will almost certainly damage both.
 - Do not use the chuck on heavy work where the chuck jaws project appreciably from the chuck body. Use the correct. Do not attempt to insert chuck jaws into the wrong jaw way. The jaws and jaw ways are numbered correspondingly.
 - Do not tamper with the chuck. If inaccuracy is found, check the spindle nose or adaptor plate for true running and make sure there is no dirt or foreign matter between the mounting faces.
 - If in doubt, do not use the chuck, contact Pratt Burnerd
- Lubricate the chuck at regular intervals using Pratt Burnerd chuck lubricant PB160Z, Refer to material data sheet for all information referring to PB160Z. Do not use any other brand of lubricant. To obtain maximum benefit, the chuck parts should be cleaned thoroughly with a suitable cleaning fluid before applying the lubricant with a clean brush.
- If spares are fitted to the chuck, ensure these are supplied by Pratt Burnerd, if screws are loosened or replaced, defective fastening or replacement may lead to a damage of the machine or injury to the operator. The torque table below should be used when retightening any fasteners
Ensure that the chuck has been tested before reusing.
- Use the Pratt Burnerd Radio Frequency Gripmeter to check the static and dynamic grip.
- **WHEN DISMANTLING THE CHUCK THE MICRO ADJUSTMENT SCREWS MUST BE REMOVED BEFORE ATTEMPTING TO REMOVE THE BACK HALF OF THE CHUCK**
- Pratt Burnerd International will advise on any problem concerning maintenance.

OPERATING INSTRUCTIONS

Operation of the adjustment feature is simplicity itself. If the required degree of accuracy is not achieved first time, do not assume that it is unobtainable. You will find that after one or two attempts the method of setting will become quite simple.

1. With the chuck correctly mounted on the machine spindle, a component may be gripped by using any of the usual three pinions to operate the jaws, at the same time noting which pinion you have used. These are numbered 1, 2, and 3 for identification.
2. Next slacken all three micro-adjustment screws by two turns at least, using the hexagon wrench provided.
3. A dial gauge should now be set up to register on the diameter of the component and the chuck revolved slowly until the position of the lowest (minus) reading on the gauge is found.
4. Having noted the amount of eccentricity (**do not remove the dial gauge**), proceed to tighten the micro-adjustment screw nearest to the low reading position and watch the gauge needle move in the plus direction until it has moved half of the total eccentricity previously recorded. Rotate the chuck again slowly and note the reduced amount of eccentricity recorded on the gauge. Repeat the same operation, if necessary, until the component comes within the desired tolerance (.0002" is easily possible if your lathe spindle bearings are in reasonable condition)
5. When the component is shown to be within the desired tolerance, tighten (but do not overtighten) any of the micro-adjustment screws which are still slack, **Never overtighten the micro-adjustment screws**. Always slacken off the opposing screws if the adjustment on any screw becomes hard.
6. When the adjustment has been completed as described for a component of a given diameter, any number of components of the same diameter may be gripped in the normal way without further adjustment providing the same pinion is used for such repartition as was used for gripping the original component. If this is carried out, repetition machining of identical components can be carried out with not more than .0002" variation in concentricity.

It is important to remember:

- a. That the action of tightening any one adjustment screw draws the chuck body and component in the direction of that same screw.
- b. Overtightening of any one micro-adjustment screw will cause the component to over-run the centre and it will be necessary to slacken that screw so that one, or both, of the other screws can be tightened to correct the over-run.
- c. It is not necessary to use force to turn the micro-adjustment screws. Nothing is gained by doing so and the screw may be damaged.
- d. Any operating pinion may be used when it is not essential to maintain concentricity within the very fine limits mentioned. If any difficulty is experienced in obtaining the required degree of accuracy after carrying out these procedures, it would be advisable to check the spindle bearings for wear. Even a Pratt Burnerd GRIPTRU chuck will not overcome excessive wear in the machine spindle or spindle bearings.

WARNING

- **WHEN DISMANTLING THE CHUCK FOR ANY REASON THE MICRO ADJUSTMENT SCREWS MUST BE REMOVED BEFORE ATTEMPTING TO REMOVE THE BACK HALF OF THE CHUCK**

9. Technical Information

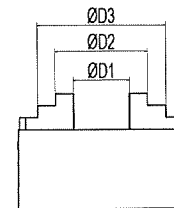
▲ WARNING

Chuck Size (mm)	Max Input Torque (Nm)	Static Grip per Jaw (KN)	Super Precision Maximum Speed (rpm)	Standard Accuracy Maximum	Approx Weight (Kg)
80	28	5.80	5000	4000	1.7
100	38	7.15	5000	3800	2.9
125	52	8.05	5000	3700	4.7
160	75	11.15	4900	3500	8.6
200	115	15.60	4200	3200	15.6
250	156	18.65	3300	2800	18.7
315	203	22.30	2700	2300	22.3
400	203	24.50	2000	2000	24.5
500	250	-	-	1100	

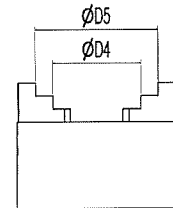
10. Clamping Ranges

▲ WARNING

Chuck size (mm)	D1	D2	D3	D4	D5
80	1-32	24-44	50-78	28-50	50-76
100	1-32	25-56	56-90	28-60	60-98
125	1.5-32	28-78	70-120	38-84	78-124
160	1.5-56	42-98	84-152	48-106	90-160
200	2-76	56-126	115-186	54-128	114-200
250	3-114	60-168	148-250	64-162	115-250
315	6-120	70-184	184-298	76-190	190-304
400	10-187	90-268	223-400	92-270	224-406



Inside Jaws



Outside Jaws

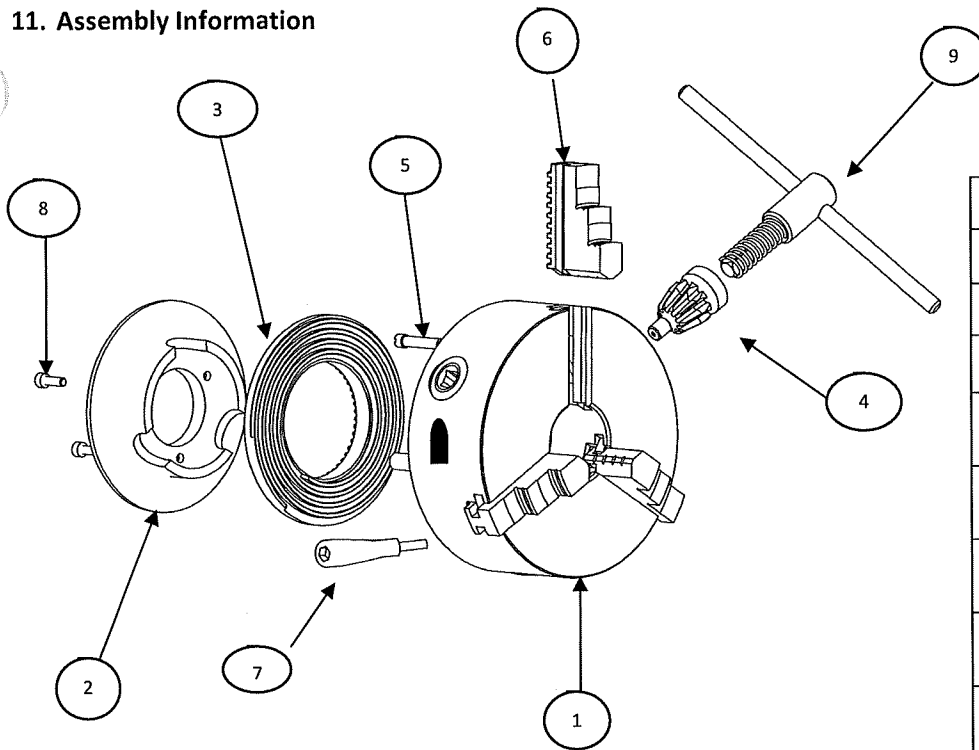
10. Tightening Torques (Nm)

▲ CAUTION

Screw	M2	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M24	M30
Socket Head Cap	0.66	2.43	5.66	11.4	19.3	46.3	88.3	161.8	257.4	397.2	551.6	772.3	1323.9	2684.6
Socket Counter	-	1.24	2.74	4.9	10.2	20.99	38.15	81.89	-	144.16	-	230.46	366.74	-
Button Head	-	1.37	3.53	5.39	12.45	24.91	51.88	93.75	-	-	-	-	-	-
Socket Set Screw	0.20	0.95	2.27	4.62	7.61	18.36	36.16	60.56	-	147.33	-	273.80	491.70	-

11. Assembly Information

▲ CAUTION



Number	Name of Part	Q'ty
1	Chuck Body	1
2	Back Body	1
3	Scroll	1
4	Pinion	3
5	Pinion Pin	3
6	Jaws	3
7	Micro adjusting screw	3
8	Back Body Mounting screws	3
9	Chuck Key	1

When reassembling the chuck, be aware of sharp edges, burr's and collected metal swarf which could potentially cause injury. The Super Precision and Standard Accuracy scroll chucks are supplied with inside and outside jaws as standard however cross tenon jaws are available.

12. Troubleshooting

▲ CAUTION

Ensure the machine is completely stopped, check the following points and perform the countermeasures.

Trouble	Cause	Countermeasure
Chuck does not work	Broken components.	Disassemble the chuck and replace with new parts supplied by Pratt Burnerd International.
Chuck does not work	Seized in components	Disassemble, remove the burr and lubricate.
Chuck does not work	Rusted parts.	Disassemble and remove rust.
Chuck does not work	Excessive dirt or chips in the chuck	Disassembly, clean and lubricate the chuck
Work Slips	Forming diameter of soft jaws is not concordance with workpiece diameter.	Machine soft jaws again.
Work Slips	Insufficient gripping force.	Tighten the jaws with key provided.
Work Slips	Cutting torque over.	Calculate the cutting torque and set the cutting conditions
Work Slips	Insufficiently lubricated.	Disassemble, clean and lubricate the chuck.
Poor accuracy	Jaw mounting bolts not properly tightened	Screw the jaw mounting bolts with the specified torque
Poor accuracy	Over height top jaw	Modify top jaw height
Poor accuracy	Incorrect centering of the chuck.	Clock the chuck OD and face, if there is run out, remove, clean and refit

13. Service

THINK

Before contacting Pratt Burnerd International, gather as much information relating to the chuck as possible. Product code numbers are in the form of four digits followed by five digits i.e. 1234-56789 and serial numbers are in the format of a letter followed by five digits i.e. A12345. Below are the most common Spares requirements.

For 3 jaw chucks

Chuck Size (mm)								
Item	Ø80	Ø100	Ø125	Ø160	Ø200	Ø250	Ø315	
Inside Jaws	8210-08603	8210-10603	8210-13603	8210-17603	8210-20603	8210-25603	8210-32603	
Outside Jaws	8210-08602	8210-10602	8210-13602	8210-17602	8210-20602	8210-25602	8210-32602	
Soft Jaws	8210-08606	8210-10606	8210-13606	8210-17606	8210-20606	8210-25606	8210-32606	
Base Jaws	—	8210-10607	8210-13607	8210-17607	8210-20607	8210-25607	8210-32607	
Hard Top Jaws	—	8210-10608	8210-13608	8210-17608	8210-20608	8210-25608	8210-32608	
Soft Top Jaws	—	2580-10509	2210-13509	2210-17509	2210-20509	2210-25509	2210-32509	
Chuck Key	2580-08395	2580-10395	2210-13395	2210-17395	2218-20208	2218-25208	2218-32208	

Special parts for Griptru chucks								
Micro screws	2630-08360	2630-10360	2630-14360	2630-16360	2250-20360	2630-27360	2630-27360	
Allen keys	SSKEYL0.156	SSKEYL0.188	SSKEYL0.188	SSKEYL0.219	DN911L-43778	SSKEYL0.375	SSKEYL0.375	

For 6 jaw chucks

Chuck Size (mm)								
Item			Ø125	Ø160	Ø200	Ø250	Ø315	
Inside Jaws			8260-13603	8260-17603	8260-20603	8260-25603	8260-32603	
Outside Jaws			8260-13602	8260-17602	8260-20602	8260-25602	8260-32602	
Soft Jaws			8260-13606	8260-17606	8260-20606	8260-25606	8260-32606	
Base Jaws			8260-13607	8260-17607	8260-20607	8260-25607	8260-32607	
Hard Top Jaws			8260-13608	8260-17608	8260-20608	8260-25608	8260-32608	
Soft Top Jaws			2210-13509	2210-17509	2210-20509	2210-25509	2210-32509	
Chuck Key			2210-13395	2210-17395	2218-20208	2218-25208	2218-32208	

Special parts for Griptru chucks								
Micro screws	2630-08360	2630-10360	2630-14360	2630-16360	2250-20360	2630-27360	2630-27360	
Allen keys	SSKEYL0.156	SSKEYL0.188	SSKEYL0.188	SSKEYL0.219	DN911L-43778	SSKEYL0.375	SSKEYL0.375	

600UK, 1 Union Works, Union Street, Heckmondwike, WF16 0HN, England,
 Telephone: 01924 415000 Fax: 01924 415011
 Web: www.600uk.com Email: mail@600uk.com

D Type Camlock Mounting Plates

Spindle	Ø100mm	Ø125mm	Ø160mm	Ø200mm	Ø250mm	Ø315mm	Ø400mm
D1-3	8277-10222	8277-1322	8277-17222	8277-20222	—	—	—
D1-4	—	8277-13223	8277-17223	8277-20223	8277-25223	—	—
D1-5	—	—	8277-17224	8277-20224	8277-25224	—	—
D1-6	—	—	8277-17225	8277-20225	8277-25225	8277-32225	8277-40225
D1-8	—	—	8277-17226	8277-20226	8277-25226	8277-32226	8277-40226
D1-11	—	—	—	8277-20227	8277-25227	8277-32227	8277-40227

14. Fitting Camstuds to Camlock mount chucks

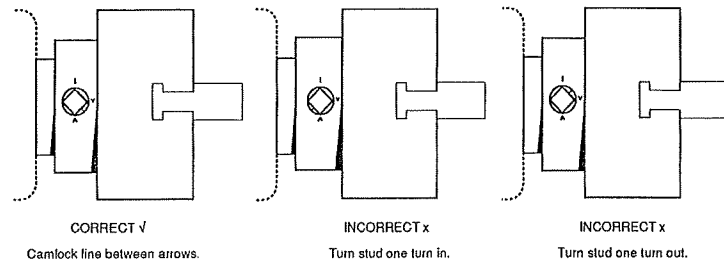
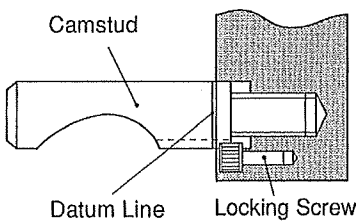
▲ CAUTION

Chucks for direct mounting to lathes with camlock mounts are now delivered with the camlock studs packed separately within the chuck case. This reduces the risk of damage in transit to both chucks and studs. The following notes are offered guidance in assembling the studs to the chuck.

Screw each camstud into the mounting holes provided until the datum line is as close as possible to the rear face without being below the surface and the screw head cutout in the line with the locking screw hole.

Ensure that the chuck and spindle nose tapers are clean and offer the chuck up to the spindle. When in position, tighten each of the spindle cams in turn, ensuring the datum line on each cam is between the arrows on the spindle nose. If any do not tighten within the limits, remove the chuck and adjust the camlock studs as required. When all cams lock within the marked limits, remove the chuck and insert the locking screws beside each cam lock stud. Remount the chuck.

Remember once a chuck has been adjusted to a spindle nose, inscribe a reference mark so that each time it is removed from the machine, it may be replaced in the same position. If the chuck is mounted on a different machine from that which it has been adjusted, the above procedure should be repeated.



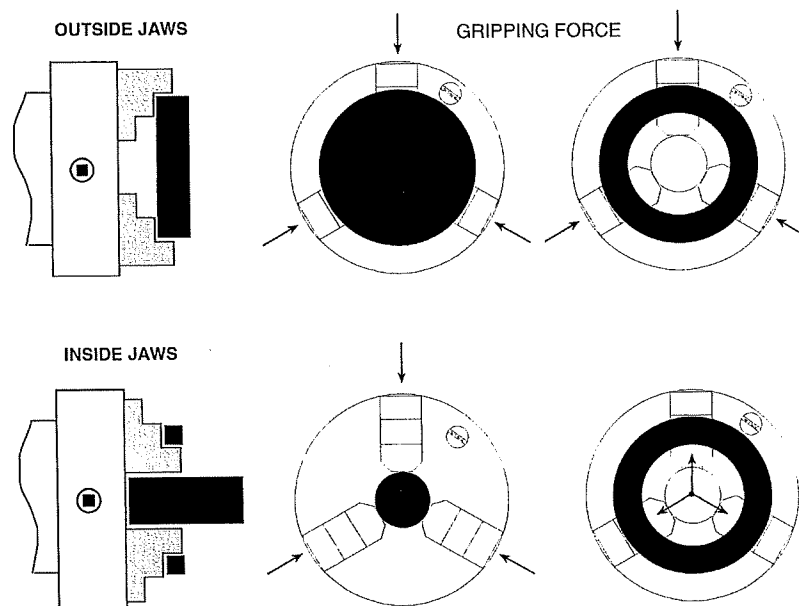
16. Inside or Outside Jaws

The most common misunderstanding in the chucking world is the terminology of inside and outside jaws for self centering chucks, a point which appears to have caused confusion since chucking was introduced and still does.

OUTSIDE jaws are designed only to grip OUTSIDE components, usually of larger diameters.

INSIDE jaws are designed to grip the INSIDE diameter of a ring of cylinder but will also grip the outside diameter of bar material which is, by far, the most common application and complicates the terminology.

To simplify:



MATERIAL SAFETY DATA SHEET

Product Name:	PRATT BURNERD CHUCK LUBRICANT
Revision Date:	08 August 2013
Revision:	01
Page:	10 of 12

**1. product and company identification**

Product trade name: Pratt Burnerd Chuck Lubricant

Product code: PB16OZ

Manufacturer: HUSK-ITT Corporation

CHEMTREC: 001 800 424-9300 (24 Hour)

Supplier: 600 UK

Tel.: 01924 415000

Union Street, Heckmondwike

Fax.: 01924 415011

West Yorkshire WF16 0HL

Generic description: Molybdenum disulphide grease

Colour: Grey / charcoal

Physical form: Paste.

Odour: None.

2. composition/information on ingredients**Hazardous Ingredients**

If present IARL, NPT and OSHA carcinogens and chemicals subject to reporting requirements of SARA title 111, section 313 are identified in this section: None.

(Non hazardous) Components	CAS number	TLV	PEL	%
Petroleum oils	64741-62-7	N/E	N/E	60-70
	64741-96-4	N/E	N/E	60-70
Lithium Hydroxystearate	7620-77-1	N/E	N/E	5-10
Molybdenum Disulphide	1317-33-5	N/E	N/E	15-25
Proprietary Components	N.J.T.S.R.N			
	80100362-5009P			<1.0

3. hazards identification

Effects of over exposure: May cause irritation to eyes and skin on sensitive individuals.

4. first aid measures

Eye contact: Flush eyes thoroughly with water for at least 15 minutes. If irritation occurs see doctor.

600UK, 1 Union Works, Union Street, Heckmondwike, WF16 0HN, England,

Telephone: 01924 415000 Fax: 01924 415011

Web: www.600uk.com Email: mail@600uk.com

Skin contact: Wash contact areas with soap and water. See doctor if symptoms persists.
 Inhalation: Remove to fresh air. See doctor if irritation/discomfort persists.
 Ingestion: Call Doctor. Do not induce vomiting. Keep warm.
 Additional: Prolonged or repeated contact may produce mild skin irritation and inflammation. Personnel with pre-existing skin disorder should avoid contact.

5. fire fighting measures

Extinguishing media: Dry chemical, water fog, carbon dioxide, and sand/earth.
 Special fire fighting procedures: Treat as oil fire: Use self-contained breathing apparatus.
 Unusual fire and explosion hazards: None.
 NFPA profile: Health: 1, Flammability: 1, Reactivity: 1, Personal Protection: B
 Hazardous decomposition products: Carbon monoxide, carbon dioxide, metallic and sulphur compounds.

6. accidental release measures

Notification Procedures: Report spills as required to appropriate authorities.
 Spillage Procedures: Stop flow, scrape, wipe mop up or absorb with diatomaceous earth or other inert material. Store in appropriate container for disposal.

7. Handling and storage

Handling: No special precautions are necessary beyond normal hygiene practices.
 Storage: Avoid storage near open flame or other sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection: Normally not needed.
 Skin protection: Neoprene or nitrile rubber gloves recommended.
 Eye protection: Approved safety glasses or goggles.
 Other protection: Chemically resistant boots and apron recommended.
 Work/hygienic practices: Use standard methods.

9. physical and chemical properties

Form/colour: Paste/dark grey or black
 Odour: None.
 Specific gravity: 1.02
 Water solubility: Nil
 Evaporation rate: N/A
 Boiling point, °C: N/A
 Melting point, °C: N/A

Volatile by volume, %: None
 Vapour pressure: N/A
 vapour density: N/A
 flash point: (ASTM D92) C.O.C: 232 °C (450 °F)
 Upper flammable limit: N/D
 Lower flammable limit: N/D

10. STABILITY AND REACTIVITY

Stability: Stable
 Incompatibility (materials to avoid): Strong oxidising agents.
 Conditions to avoid: Extreme heat (do not heat above flash point)
 Polymerisation: Will not occur.
 Hazardous decomposition products: Carbon monoxide, carbon dioxide, metallic and sulphur compounds.

11. Toxicological information

Acute Toxicological Data: Not established.
 Component Toxicological information: Not established.
 Special Hazard Information on components: No known applicable information.

12. ecological information

Environmental fate and effects: Not established.

13. Disposal considerations

Not established.

14. Transport Information

DOT Hazardous classification: Not regulated grease or oil - N.O.S.

15. Regulatory information

Not established.

16. Other Information

Use: Lubricant – especially formulated for use on work holding chucks.
 Note: This product is not intended for any other purpose.
 Prepared by: Pratt Burnerd International.